The Impact of a Customisation Feature on Introducing Naval Warfare Concepts to Students at Career Fairs

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1. Abstract

This report explores the integration of a customisation feature within the Thales Naval Warfare game, aiming to enhance the understanding of naval warfare concepts, particularly the role of radar systems, among students attending career fairs. The game, developed by student teams at Thales Netherlands, faced inconsistencies in design and struggled to effectively convey the importance of radar systems.

The central research question guiding this project was: "How can a ship designer feature assist the core gameplay of the Thales Naval Warfare game in improving career fair attendees' understanding of the role radars play in naval warfare?”. To address this, the project utilized a comprehensive research methodology, including benchmarking existing ship customisation systems, conducting stakeholder interviews, and implementing pre- and post-game assessments to track learning outcomes. UI design was refined through A/B testing to ensure an intuitive and informative player experience.

Initial findings revealed that players lacked prior knowledge of naval warfare and often overlooked the significance of ship equipment. Subsequent iterations focused on developing a gameplay-impacting ship customisation system that offers educational opportunities and is intuitive for new users. While the product owner sought direct comparison of component stats for promotional purposes, this was balanced with the audience's limited prior knowledge, leading to the exploration of features like dynamic stats diagrams and tooltips to provide accessible information. The thesis details the iterative design process, highlighting efforts to create an engaging and informative experience that effectively communicates the strategic value of radar systems in naval combat scenarios.

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3. Introduction

3.1. Assignment

The Thales Naval Warfare project is a game that is being developed at Thales Netherlands Hengelo, part of Thales Group, to introduce new employees and career fair attendees to maritime warfare dynamics and Thales' mission within this sector. The game lets the player take control of a ship and its equipment to complete single-player or co-op missions of varying scales.
The game aims to introduce its target audience to the importance of radars in naval warfare. While the game is not accurate to real-life naval warfare, it still represents the dynamic at play, which allows players to understand why radars and weapon systems are crucial in this environment.
The game is a student-led project and has been in development for the past 5 years. A team of 3 students generally works on it for a semester before a new team takes over. The project has suffered from a lack of consistent vision because of this,is and therefore is in a quite chaotic state when it comes to gameplay and organisation. While most of the core gameplay is already implemented, it needs to be redesigned and adjusted to better fit the new vision for the game.

3.2. Thales Netherlands

Thales Nederland B.V. is a subsidiary of the French multinational company Thales Group, based in the Netherlands. The company was originally founded in 1922 as NV Hazemeyer's Fabriek van Signaalapparaten by Hazemeyer and Siemens & Halske to produce naval fire-control systems. It was later renamed Thales Nederland following the renaming of Thomson-CSF to Thales in 2000 (*Our History*, 2019).

Thales Nederland specialises in naval defence systems, including sensors, radars, and infrared systems. The company is also involved in air defence, communications, optronics, cryogenic cooling systems, and navigation products. It has continued to expand its business, including a joint venture with EADS Germany to develop and produce naval combat systems (*Thales Nederland*, 2023).

The company has about 2,800 employees and is located in several cities across the Netherlands, including Huizen, Delft, Eindhoven, Amersfoort, and Hengelo, which serves as the headquarters (*Adwise Internetmarketing*, 2025)(*Thales Netherlands*, 2022).

Thales Nederland is organised to focus on the defence and security sectors, designing and producing professional electronics for these applications. The company also acts as a local point of contact for the complete portfolio of the Thales Group (*Thales Netherlands*, 2022).

Thales Netherlands operates primarily in the defence and security sectors, focusing on naval defence systems, including sensors, radars, and infrared systems. The company is also involved in air defence, communications, optronics, cryogenic cooling systems, and navigation products(*Adwise Internetmarketing*, 2025). Additionally, Thales Netherlands designs, develops, produces, integrates, and services land-based and maritime system solutions to meet the defence and security requirements of various organisations worldwide. The company is known for its integrated naval command and control systems, as well as ground-based air defence systems and telecommunications equipment(Defence in Netherlands, 2025). Thales

Netherlands is a subsidiary of the French multinational Thales Group and has a significant presence in the Dutch defence market, with a strong focus on innovation and technology(*Thales Nederland B.V.*, 2023).
Since Thales is a defence company, the company's organisation and departments could not be disclosed in this report due to security concerns.

The author's role in the company is exclusive to the naval warfare game project as a game design intern. As a game designer, the focus is on making the user experience of the game fit the intended vision based on the expectations of the stakeholders and the needs of the target audience. This will be achieved through researching, ideating and prototyping problems or ideas to find the best solutions.

The project is being managed by Wiebe Huynh, who works at Thales as a Java software engineer. Wiebe started this project on the side of his job and is the main stakeholder at the moment as the product owner. The project was first started as a new way of introducing potential employees visiting the Thales stand at career fairs to Thales as a company.

4. Problem Statement

The *Thales Naval Warfare* project aims to introduce new employees and career fair attendees to the basics of maritime combat and Thales' role within that space, particularly highlighting the significance of radar systems in naval operations. While the game already has a playable core with functional mechanics and missions, its chaotic development history, caused by the rotating nature of student teams, has led to inconsistencies in design, vision, and gameplay cohesion.

A critical challenge lies in making the importance of radar systems more understandable and engaging for players, especially those who aren't familiar with naval warfare. The current gameplay does not fully emphasise how radars impact decision-making or combat effectiveness, which weakens one of the game's core educational goals.

Wiebe Huynh, the project manager, has also expressed the idea of introducing a ship customisation or designer system that allows players to actively select and configure radar and weapon systems before heading into missions. However, it's still unclear how such a feature would fit within the broader gameplay loop in a way that enhances learning without overwhelming or boring players. There's also the risk of the feature becoming too abstract or disconnected from gameplay, missing the opportunity to reinforce the importance of radar through meaningful interaction.

This project tackles the challenge of designing a ship customisation system that not only fits the game's new direction but also improves players' understanding of the strategic value of radar systems in naval warfare.

5. Research Questions and Methodology

5.1. Main Research Question

This graduation project focuses on exploring how a ship designer feature can contribute to both gameplay and educational value within the *Thales Naval Warfare* game. The central research question guiding this project is:

“How can a ship designer feature assist the core gameplay of the Thales Naval Warfare game in improving career fair attendees' understanding of the role radars play in naval warfare?”

This question serves as the foundation for the design process and decision-making throughout the project. It connects the gameplay experience with the game’s intended educational purpose, aiming to ensure that new players not only enjoy the experience but also gain a clearer understanding of radar systems and their importance in modern naval combat scenarios.

5.2. Sub-Research Questions

The main research question guides the exploration of how ship customisation can be leveraged as both a gameplay mechanic and an educational tool. To address this, several sub-questions examine key aspects of the feature’s design, effectiveness, and user experience:

1. What are the key features of a ship customisation system that can enhance the experience of the *Thales Naval Warfare* game?
2. How can career fair attendees' understanding of radar systems in naval warfare be tracked?
3. How can the user interface be designed to make the ship's customisation informative for players?
4. In what ways is the project currently succeeding and failing in its mission to demonstrate the role of radars in defence and naval warfare?

These questions guide the development and evaluation of the ship designer feature, ensuring it not only enriches gameplay but also serves as an effective educational tool. By addressing customisation mechanics, tracking learning outcomes, and refining UI design, the project aims to create an engaging and informative experience that effectively communicates the significance of radars in naval warfare.

5.3. Research Methodology

To investigate the key features of a ship customisation system that can enhance the *Thales Naval Warfare* game, benchmarking and case studies will be conducted. Successful ship customisation mechanics in existing games will be analysed to identify best practices in balancing complexity, accessibility, and educational value. These insights will inform the design of a customisation system that is both engaging and informative.

To track career fair attendees' understanding of radar systems in naval warfare, pre- and post-game assessments will be implemented. Surveys or quizzes will be designed to measure players' baseline knowledge before gameplay and compare it to their understanding afterwards.

This test will be performed using the game before the implementation of the ship designer feature to test the current effectiveness of the project, and will be repeated after the ship designer feature is implemented. Comparing the post-game test results should give insight into the effectiveness of the ship designer feature. This method will help determine whether the ship designer feature effectively enhances learning and where improvements may be needed.

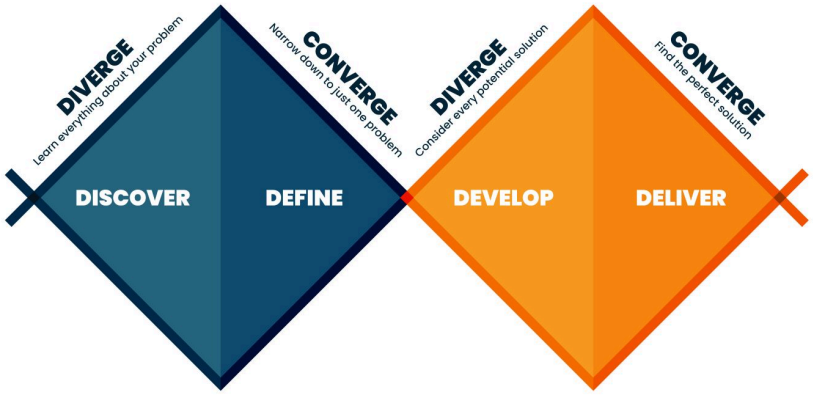
User interface (UI) design for the ship customisation system will be refined through A/B testing. Multiple UI variations will be developed, with players testing different layouts, visual cues, and interactions. Their performance, ease of use, and engagement levels will be analysed to identify the most intuitive and educational design.

Additionally, user playtests and post-game surveys will provide qualitative and quantitative data on how well the game conveys the role of radars in naval warfare. By assessing player feedback and understanding, the study will determine the project's current successes and shortcomings, informing further refinements to ensure a compelling and educational experience.

6. Design Framework

The Double Diamond design process is a visual framework that highlights both divergent and convergent thinking in design, ensuring a user-centric approach across various fields such as product development and problem-solving. This process is divided into four key stages.

Figure 1.(Diagram of the Double Diamond Design Thinking Method, n.d.).



The first stage, Discover, focuses on understanding the problem space by conducting user research and gathering insights to encourage divergent thinking. The goal is to gain a comprehensive understanding of the problem area and identify potential areas for innovation.

The second stage, Define, involves synthesising the findings from the Discover phase to define the core problem or opportunity. Convergent thinking is used to analyse research data and create a clear problem statement that guides the subsequent design process.

The third stage, Develop, aims to generate a wide range of potential solutions through brainstorming, creating prototypes, and iterating based on feedback. Divergent thinking is encouraged to explore multiple solutions, leading to refined concepts that address the problem statement.

The final stage, Deliver, focuses on implementing and launching the final solution, ensuring it meets user needs and business goals. Convergent thinking is used to test prototypes, gather feedback, and refine the solution, resulting in a user-centric design ready for implementation and scaling.

This structured approach ensures that the design process is thorough and results in innovative, user-focused solutions. (Humble, 2021)(*Design Methods Step 1: Discover*, n.d.)

7. Iteration 1 - Designing the Core Concept

7.1. Preliminary research

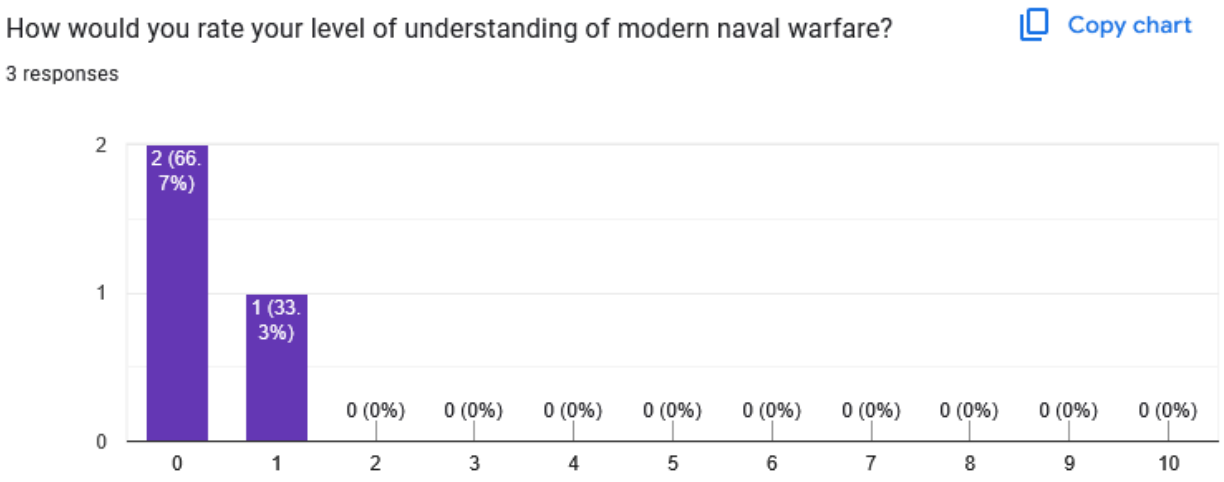
7.1.1. Stakeholder Interview

In this first step of the design process, the problem statement needs to be defined appropriately to understand the direction the solution needs to go. To do this, the people who this project concerns needed to be identified as the stakeholders. It is important to empathise with the stakeholders as they ultimately dictate the success of the solution based on their needs and expectations.
One of those stakeholders is Wiebe Huynh, the product owner of the Thales Naval Warfare game project. Understanding what Wiebe expects out of this assignment is important to consider because he started the project to fulfil the need to better communicate Thales' mission during career fairs. To better understand Wiebe's needs and expectations, an interview was conducted with him.
The primary takeaway from this interview was Wiebe's need for a ship customisation system to be implemented into the project. He believed it would be a better way of providing the user with additional information on Thales hardware compared to the current feature, which tries to do that during gameplay.
He further specified that the ship customisation feature should impact gameplay and therefore should not just be cosmetic.
Finally, he hopes the feature will help the project in its mission to better communicate the role Thales hardware plays in naval warfare and defence.

7.1.2. Playtest findings

To better understand the target audience, as well as to understand the game's effectiveness, a survey was created to ask questions of the target audience at the yearly internship market of Hogeschool voor de Kunsten Utrecht, where the team's artist (Max Weijers) currently studies. Students who came by the Thales booth were asked if they would be willing to test the project and answer some questions before and after testing the game using the survey, which can be found in Appendix A.
Unfortunately, not many attendees visited the Thales booth, and even fewer were willing to take the time to test the game. This already indicates some flaws with the concept of the game as a whole, but due to the scope of this report, it will not be discussed in more detail.
The playtests did show that players struggle to understand the importance of the ship's equipment. From observation, they tend to rush into the action while spamming the cannons, and mostly ignoring the radar and missiles. The few anwers show that people the participants didn't learn anything new about radars or naval warfare.
An important finding however is that the participants as well as other students visiting the booth showed minimal to no prior knowledge about naval warfare and radars. This is important to consider for the design of the ship design feature.

Figure 2. Question and Graph from the Questionnaire.



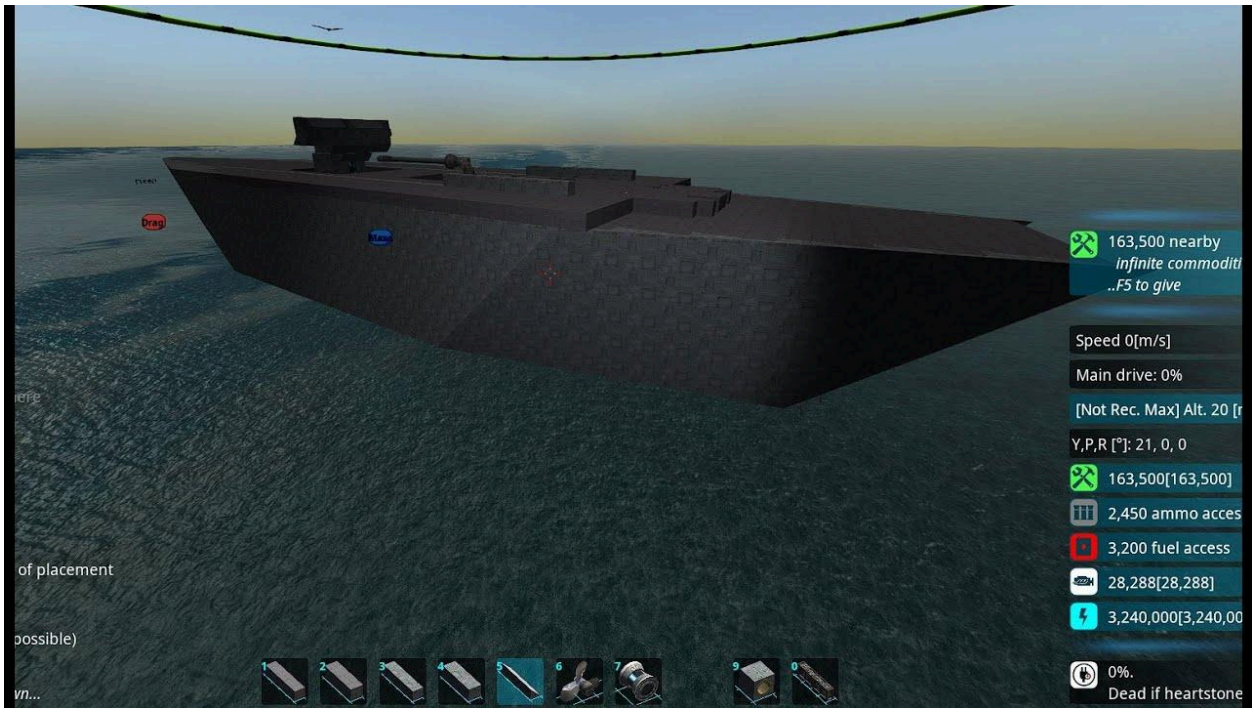
Overall, this playtest give further insight into sub-question 4(In what ways is the project currently succeeding and failing in its mission to demonstrate the role of radars in defence and naval warfare?), established in the Research Questions section. Based on the answers and observation, the game currently does not do a good job at teaching naval warfare dynamics and radars.

7.1.3. Existing Ship Customisation Systems Analysis

To better understand the potential impact of a ship-building system on gameplay and player engagement, an analysis was conducted on several existing games that feature mechanics allowing for ship or vehicle customisation. The titles Stellaris, Hearts of Iron IV, War Thunder, World of Warships, and From the Depths were chosen due to their diverse approaches to vehicle customisation and their relevance to the subject of naval or vehicular design within gameplay systems.

One of the primary observations is that these systems often provide players with a form of creative expression. In From the Depths, for example, players can construct entire vehicles block-by-block, which allows for a near-infinite range of designs, encouraging creativity not just in visual aesthetics but also in functional strategy(*Official from the Depths Wiki*, 2025). Similarly, in Stellaris, players can design spaceship loadouts to suit specific combat roles or personal preferences, reinforcing the idea that customisation serves as a personal expression of playstyle(*Ship Designer - Stellaris Wiki*, 2019).

Figure 3. Screenshot of From the Depths' Ship Designer (Rigsters Journey, 2022).



Additionally, customisation options frequently act as a reward mechanism. In games like War Thunder and World of Warships, new components, weapons, or ship modules become available as the player progresses through the game. These upgrades act both as incentives for continued play and as tangible proof of the player's accomplishments. This progression system not only motivates players to engage with the game longer but also encourages experimentation with different loadouts and configurations(*War Thunder Wiki*, n.d.)(*World of Warships - Global Wiki. Wargaming.net*, n.d.).

Another key insight from the analysis lies in the distinction between stat-based adjustments and functional changes. Some games offer upgrades that affect numerical stats, such as armour values, speed, or firepower, without significantly changing how a ship operates (Hearts of Iron IV and World of Warships lean toward this approach)(*Ship - Hearts of Iron 4 Wiki*, 2019). Others, like From the Depths, go further by allowing players to change the core functionality of a vehicle, adding entirely new systems, propulsion types, or control schemes, thus directly impacting gameplay dynamics. This difference plays a critical role in determining how deep or surface-level the customisation system feels, and how much it influences the core gameplay loop.

Figure 4. Screenshot of Hearts of Iron IV's Ship Designer (Gamerant, 2023).

7.2. Design Criteria Definition

As a solution to the problem statement mentioned previously, the ship design feature must fulfil certain design criteria to ensure its success and get the best answers to the research questions. The MoSCoW method will be used to display the criteria clearly and in order of priority. The MoSCoW method is a prioritisation technique used in project management to categorise tasks into four groups: Must have, Should have, Could have, and Won't have. It helps teams focus on the essentials while managing scope and expectations(*Atlassian*, 2023).

Must Have:

- Gameplay-impacting ship customisation: The feature must allow for gameplay-impacting ship customisation in a way that feels meaningful to the player.
- Educational opportunities: The feature must provide the user with information on their options, both for real life and in-game, through various features that display this information.
- Intuitive and straightforward: The feature must allow a new user to instantly understand how it works and what they need to do to quickly complete their ship.
- Feasibility: To ensure completion, the feature must be developed by three students within one semester.

Should Have:

- Progression possibility: The feature should be able to be implemented into a large-scale progression system down the line.

Could Have:

-

Won't Have:

- Visual Customisation: The feature could include a way for the player to customise the ship's look.

7.3. Generating Ideas

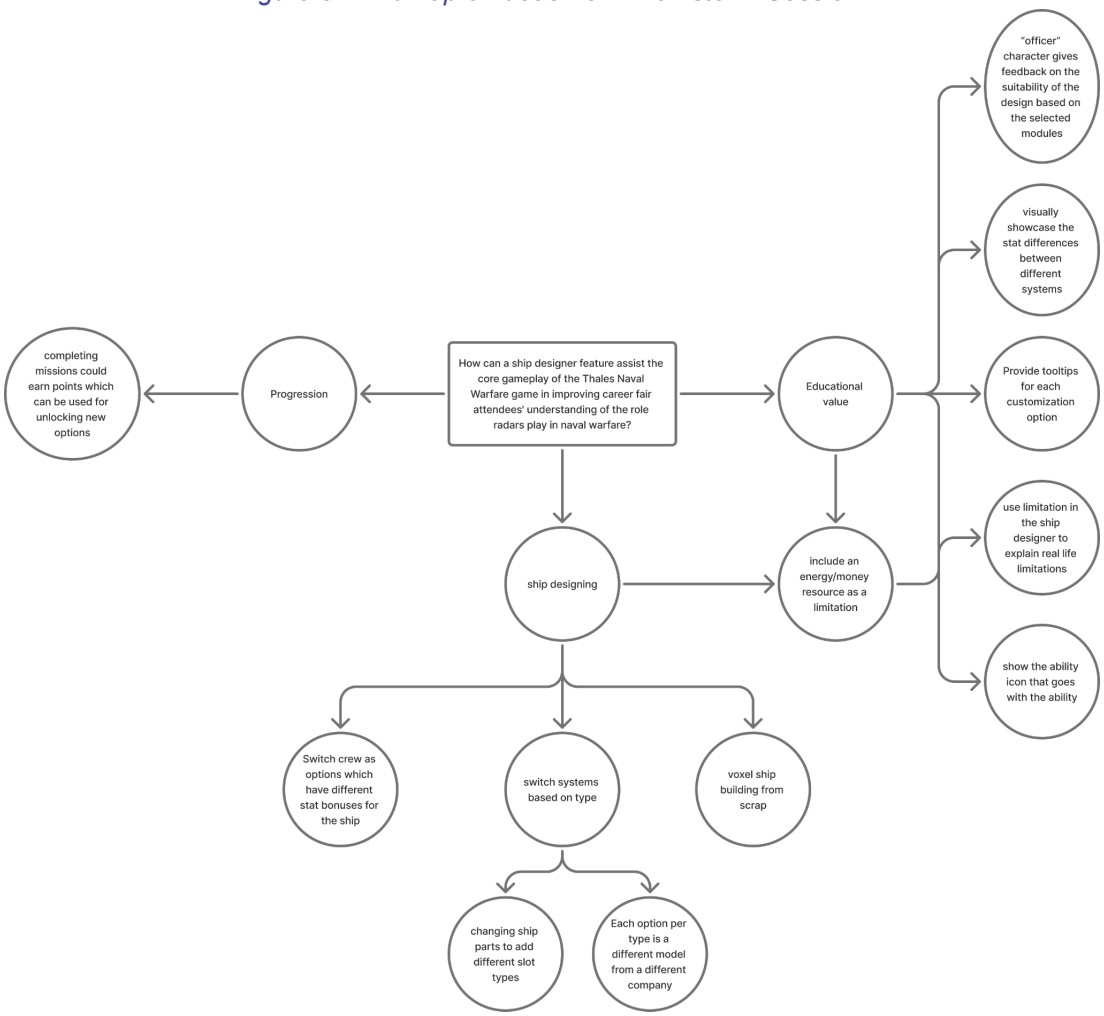
7.3.1. Brainstorming Method

A brainstorming session was conducted to generate a variety of ideas. A brainstorming method has been chosen to improve the quality and quantity of the ideas. Out of the suggested methods, Mind Mapping provided the most flexibility out of the options that were viable individually. Mind mapping is a visual brainstorming technique that helps organise ideas by starting with a central concept and branching out into related topics or sub-ideas.(*Atlassian*, 2024)
Due to the nature of the problem, the brainstorming session was conducted individually. It was aimed at finding potential features specifically for the ship designer system that would tackle the problem stated previously. To do this effectively, an understanding of existing ship designer systems in other games was required for participation, which members of the development team didn't have.

7.3.2. Ideas

The following image shows the outcome of the brainstorming session using the mind-mapping technique explained in the previous section:

Figure 5. Mindmap of Ideas from Brainstorm Session.



The process for the creation of this mindmap started with the research question at its centre. From there, the various aspects of the ship designer feature that needed to be considered in the solution, such as the progression, ship designing and educational aspects, were mapped out in different directions. This allowed each element to be considered individually from the others, which could lead to combining ideas for the final solution.
The ideas will first be explained and evaluated individually per category because each idea within a category can be mixed and matched with an idea from a different category. Picking the best ideas from each category and combining them into one feature will give the best solution to the problem stated earlier.

7.3.2.1. Ship Designing

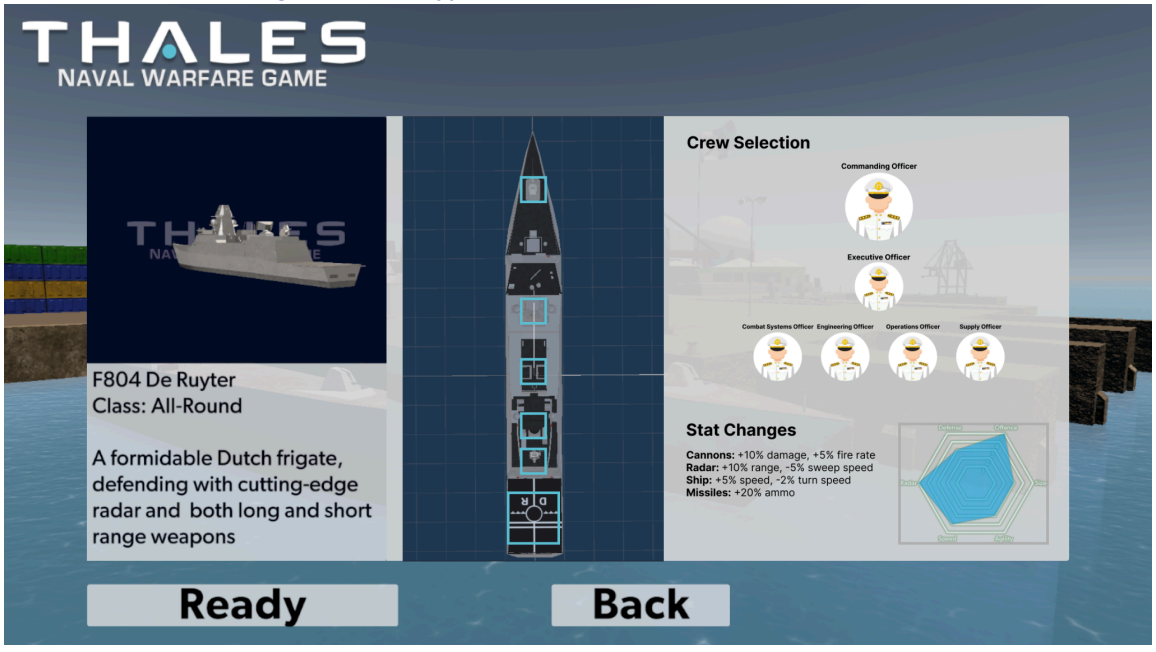
The following ideas describe different ways that the ship design aspect of this feature could be handled.

Idea 1: Crew Customisation
In this idea, the ship's capabilities and systems are kept intact and identical to the real-life version. Instead, the player would adapt the ship by picking various crew members for different positions on the ship from a selection. These crew members would enhance different aspects of the ship based on their position through stats. Through this system, the player would adapt to the mission by selecting an appropriate ship preset, but adapting it slightly through the crew selection. The feature would have to provide some form of explanation on the ship's equipment and abilities during the ship design process to make sure the player is introduced to the ship's strengths and weaknesses.

Some of the key features include:

- Crew selection panel with various positions, each with their own options.
- 3D viewport of the ship which shows ship systems.
- Panel showing the crew selection overall effects on the ship.

Figure 6. Prototype Visual of Crew Customisation Idea.

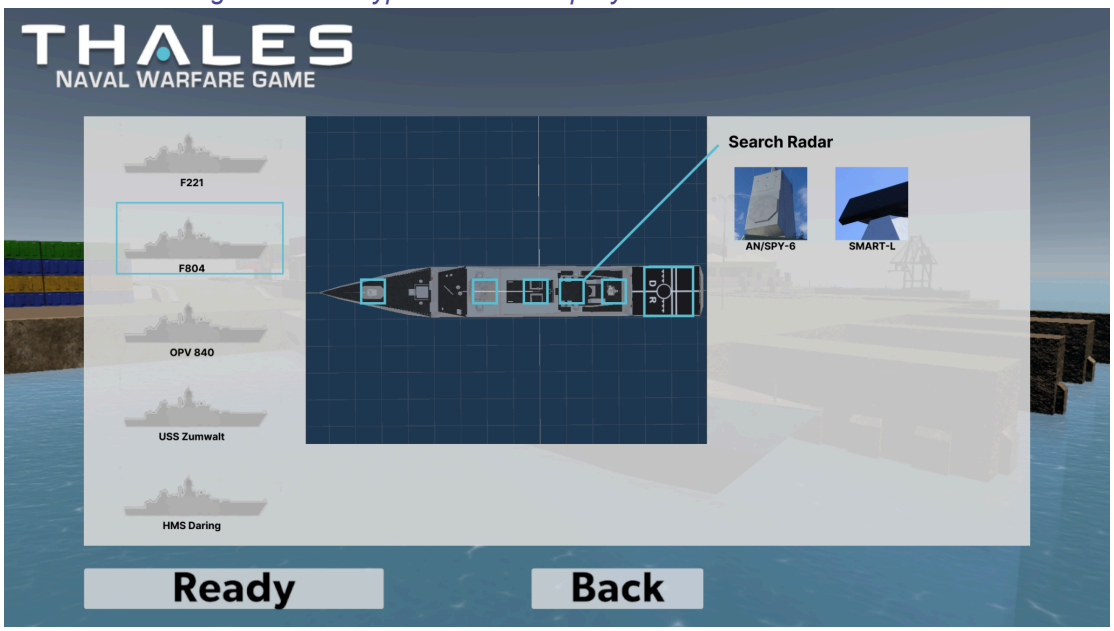


Idea 2: Ship Systems Customisation
In this concept, the player can choose which systems to equip in dedicated slots. The player would first select a base ship hull, which provides different options in slot types and number of slots, as well as different stats for health, stealth, speed, etc. Each slot can be filled with the appropriate weapon, radar or utility system depending on what best suits the player's needs.

Some of the key features include:

- Click on a system slot opens up a list of systems that can be selected which would affect the ship's capabilities.
- 3D viewport of ship with systems location highlighted.

Figure 7. Prototype Visual of Ship System Customisation Idea.



Idea 3: Voxel Ship Creation
With the final idea for Ship Design, the player can build their desired ship on a granular level using a voxel system. A voxel system consists of a 3d grid on which cubes can be placed. In this case, the player would build their ship hull using the voxel system and add their desired weapon and radar systems as presets.

Some of the key features include:

- A 3D viewport which allows the player to place voxel blocks and various other components to build their ship.
- A Stats panel which shows the stats of the ship as it's being built.

Figure 8. Prototype Visual of Voxel Ship Creation Idea.

7.3.2.2. Educational features

The following feature ideas would hypothetically help the player make more educated choices for designing their ship. This would hypothetically also help their understanding of radar systems by having to consider and choose the best option for their mission.

Idea 1: Tutor Character
While the player is putting together their ship, the tutor character will appear on their screen to give them feedback on their choices concerning the mission they are about to engage in. The tutor character wouldn't explicitly tell the player what to do, but it would guide them to the best solution. If the player doesn't want its advice, it could be ignored or turned off.

Idea 2: Stats Diagram
To give the player a visual representation of their ship's capabilities, a diagram will dynamically display this information and update it when the ship is changed. This would help the player understand how different systems affect the qualities of their ship.

Idea 3: Tooltips
Tooltips could be added to each system choice. This tooltip would display a description of the system and its stats. The description would mention the manufacturer and its intended use. The stats displayed would allow the player to understand what the system brings to the table.

Idea 4: Energy/Money
An energy/cost system could be introduced to incorporate limitations on the player, which would abstractly reflect those in real life. This system would encourage the player to make strategic choices since it would prevent them from bringing the best equipment possible for each option.

7.3.2.3. Progression

Customisation systems in other games are often used as part of a progression system by allowing players to unlock new options. Since the project currently lacks a progression system, it has been considered in the brainstorming of ideas for the conceptualisation of this ship designer

feature. However, since a larger scope progression feature isn't of great importance for the primary purpose of this game, the progression features will only be considered and not prototyped or tested.

For the progression aspect of the ship designer feature, the main idea revolved around earning a currency or experience, which allows the player to unlock new options for designing ships.

7.4. Prototyping

The images shown alongside the ship design feature ideas are static prototypes that were created to help the team understand the concepts in a visual way and to better understand the implications of these concepts for the design process.
These prototypes were made using Figma, a cloud-based design and prototyping tool. It functions as a comprehensive vector graphics editor, it's adept at crafting user interfaces (UI) and user experiences (UX) across diverse digital platforms, including websites, mobile applications, and crucially, game UIs.
In this particular case, Figma was used to quickly recreate visual representations of the ideas using a mix of in-game screenshots of the Thales Naval Warfare project, crafted UI elements for the new features and other existing games.

7.5. Testing

Once the ideas were extrapolated, explained and visualised, they were analysed using the Idea Evaluation Matrix to evaluate their alignment with the criteria.

The Idea Evaluation Matrix is a structured tool used to assess and compare different ideas based on a set of predefined criteria. It typically involves listing ideas down one axis and the evaluation criteria (e.g., feasibility, market potential, cost, alignment with goals) across the other. Each idea is then scored against each criterion, often on a numerical scale, and these scores are aggregated to provide an overall rating for each idea. This systematic approach helps in making objective decisions, prioritizing promising concepts, and identifying potential weaknesses before significant resources are invested. (*Watkins*, 2020)

7.5.1. Ship Design System Idea Evaluation

To evaluate the ideas for the ship design system, a meeting was held with the development team to rate each idea. The evaluation grid method was used to rate each idea based on the relevant criteria defined earlier in the process. Each criterion was given a weight based on its relative importance for the final evaluation. The weight was decided upon through discussion with Wiebe Huynh and the team.

Table 1. Results of Idea Evaluation in Idea Evaluation Matrix.

		Options					
		1. Crew Customisation		2. Ship Systems Customisation		3. Voxel Ship Creation	
Criteria	Weight	Rating	Score	Rating	Score	Rating	Score
Gameplay-impacting ship customisation	0.2	6.5	1.3	9	1.8	10	2
Educational potential	0.3	5	1.5	8	2.4	4	1.2
Intuitive and straightforward	0.3	9	2.7	7	2.1	4.5	1.35
Feasibility	0.2	8	1.6	6	1.2	3.5	0.7
Total	1		7.1		7.5		5.25

7.5.2. Educational Features Idea Evaluation

The educational feature ideas were evaluated differently from the ship design system ideas. The educational features are not mutually exclusive, unlike the ship design system, which means each of them could theoretically be implemented.
Based on this, the decision has been made to evaluate the ideas using lo-fi prototypes to test their effectiveness in providing educational insights to the player. Each idea could then be evaluated with feasibility in mind. For this to be done, the core concept of the ship designer feature needs to be developed further. The educational features will therefore be elaborated on in a future iteration.

7.6. Results

The final chosen idea is Idea 2: the *ship system customisation*. Idea 1 (the crew customisation) and idea 2 were both close in scores, but for different reasons. While Idea 1 scored highly on feasibility and intuitiveness, it was weaker in gameplay impact and educational potential. The argument for these lower scores is that the crew-focused nature of the system diverted attention from the ship's systems, which is where the educational aspect of the feature is trying to intervene. Additionally, due to the customisation impacting stats only, the gameplay impact would always be on the lower end of the spectrum.
On the other hand, Idea 2 scored highly in both of these criteria, and scored higher in its weaker criteria compared to Idea 1. The lowest score for idea 2 came from its feasibility. Unlike Idea 1, Idea 2 would require some major refactoring of existing systems in the game.

7.7. Conclusion

In conclusion, this iteration explored a few of the sub-questions established in the Research Questions Section. Research question one (What are the key features of a ship customisation system that can enhance the experience of the *Thales Naval Warfare* game?) throughout the iteration process, but mainly during the Discover and Develop phases of the Double Diamond method. During these phases, potential features of the ship designing system were explored through research and ideation.

The answers to sub-questions two (How can career fair attendees' understanding of radar systems in naval warfare be tracked?) and three (In what ways is the project currently succeeding and failing in its mission to demonstrate the role of radars in defence and naval warfare?) were also explored during this iteration through a survey conducted during an internship fair to better understand the audience and the current state of the project.

8. Iteration 2 - Designing the UI

In the previous iteration, a concept was chosen out of a few options. This concept is outlined in basic terms and gives a foundational idea of how it works.
In this iteration, the concept will be developed further by identifying more specifically how the feature will allow the player to carry out the core functionalities. The intention is to have a menu layout that displays the necessary information in an intuitive and comprehensible way for the target audience.

8.1. Deepening Research of Existing Feature

To better understand the chosen concept, the ship designer feature from Stellaris was further analysed since the chosen concept was heavily inspired by it. This analysis is based on personal experience by playing the game extensively and interacting with the ship designer feature. Stellaris has already been analysed in the Preliminary Research section, but this analysis is more focused on the key aspect of the feature. In this section, the ship designer feature from Stellaris will be analysed in more detail.

Stellaris' ship designer feature allows players to equip their various ship classes with the desired components to improve their chances of winning wars. Components can be categorised into weapon components, defence components, utility components and ship system components. Almost every component increases the ship's cost of production and upkeep.
The ship classes come with varying numbers and types of component slots, which limit the kinds of components that can be equipped. Each component has strengths and weaknesses (such as damage type, range or cost), which the player needs to account for when designing their ships. This is where the strategic element of the feature comes into play. Depending on their enemy and many other factors, the player needs to equip their ships with the right components to counter the enemy's strengths while also taking into account their own weaknesses.

Below are labelled screenshots of Stellaris' ship designer menu:

Figure 9. Screenshot of Stellaris' ship designer

Figure 10. Screenshot of Stellaris' ship designer.

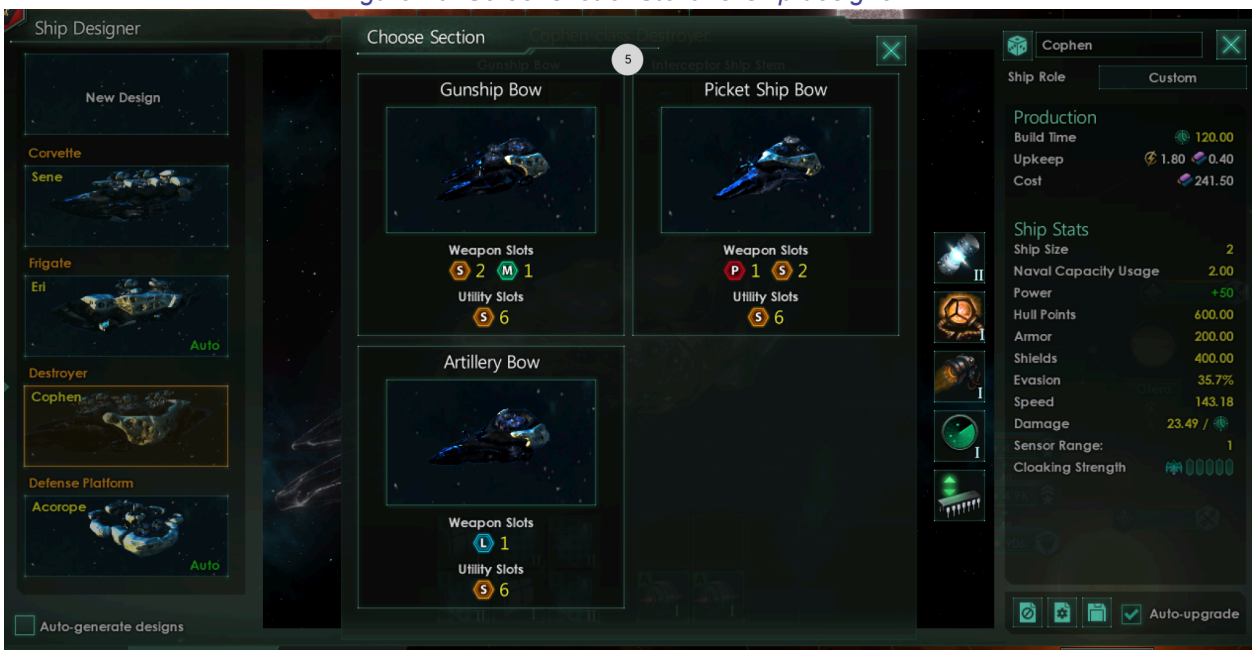


Figure 11. Screenshot of Stellaris' ship designer.

1. Ship design selection menu sorted by ship class
2. 3D ship viewport
3. Component slots
4. Ship stats section
5. Ship section selection
6. Component tooltip

The ship designer menu in Stellaris needs to allow the player to accomplish a few fundamental tasks:

- The player should be able to easily find and select the ship class and design they are looking to edit.
- The player should be able to have an overview of the components available for a slot type to know what their options are.
- The player should be able to easily see the specifics of any component at any time to understand what a component does.
- The player should be able to see a ship's general stats overview easily to know if the current design fits their needs.

8.2. Analysis of the Existing Project

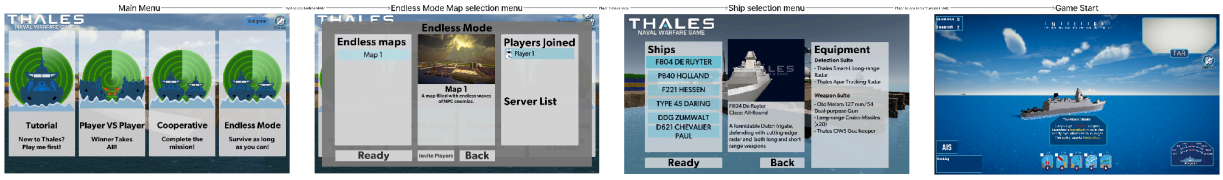
In this section, various aspects of Thales Naval Warfare have been analysed due to their relevance in this iteration. This section will explore the user journey of a player going from the main menu to the game, the menu style of the project and the implementation of the ability system.

8.2.1. User Journey

To better understand the context of the feature being designed, the user flow of going from the main menu to the gameplay was studied. The current user journey for the player to navigate from the main menu to the game involves the following steps:

1. Select a game mode (e.g. Endless Mode)
2. Select a map and press Ready
3. Select a ship and press Ready

Figure 12. User journey diagram from main menu to in-game



8.2.2. Menu Style

Since the feature mainly involves a menu, the existing menu style of the game has been studied to replicate it and make sure the aesthetic remains consistent. Figure 13 shows a labelled image detailing the specifics of the menu style:

Figure 13. Screenshot of Thales Naval Warfare's ship selection menu with number labels.

1. Separated menu sections with gaps between them
2. Slightly transparent grey background for sections
3. Light blue transparent colour for accent/call to action
4. Slightly rounded corners
5. Bold, sans-serif font

8.2.3. Ability System & Abilities

Lastly, the abilities that are currently present in Thales Naval Warfare need to be considered when further developing the concept, since they are heavily tied to the ship designer feature. The abilities currently implemented in the game are as follows:

- Cruise Missile
  - Launches a missile through the air at a surface target.
- Sea Skimming Missile
  - Launches a missile at a target by skimming the sea surface.
- Counter Missile
  - Launches a missile through the air at a flying target.
- Oto Melara Cannon
  - Fires the cannons at a target.
- Tracking Radar
  - Tracks a target and updates its position more frequently.
- Helicopter
  - Sends a helicopter to the targeted location for scouting.
- Flares
  - Attempts to "distract" incoming missiles.
- CIWS
  - Fires a burst of bullets at the target.

The way the ability system is currently implemented into the game would make it very hard to use for the ship designer system. The abilities' visuals and scripts are not located in the same place and are not always linked, which is important when swapping abilities in and out.
This is why the ability system may need to be reworked, but it is too big a task for this project. This means the ship designer system will not be prototyped within the project. A future team would need to rework the ability system before implementing the ship designer feature.

8.3. Defining Requirements for Menu Layout

Having analysed the context of the chosen concept further through its implementation in the game flow and an existing example from Stellaris, the requirements for the menu layout and its implementation in the menu flow could be defined.

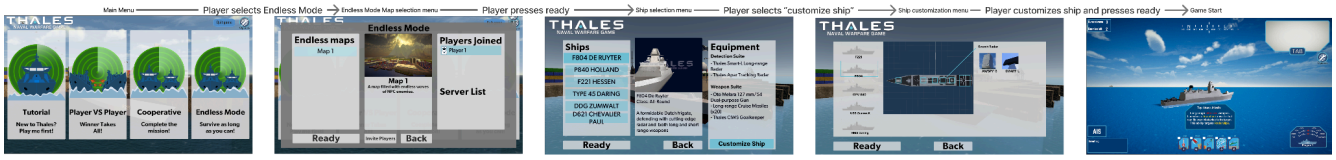
The menu layout of the ship designer feature will need to facilitate the following requirements:

1. The player should be able to select a ship class.
2. The player should be able to select components for their selected ship class.
3. The player should be able to understand the impact of their choices easily and intuitively.
4. The player shouldn't need prior gaming experience to navigate the menu.

These requirements were established based on the research done into existing features and the tests conducted with the target audience for this assignment, and tests conducted for the project in general, conducted by previous students.

To follow up on the first 2 requirements, the following user journey was adapted from the one in the previous section to visualise how a player might interact with the feature within the scope of getting from the main menu to the game, and the general actions they might take.

Figure 14. User journey diagram with suggested ship designer feature implementation



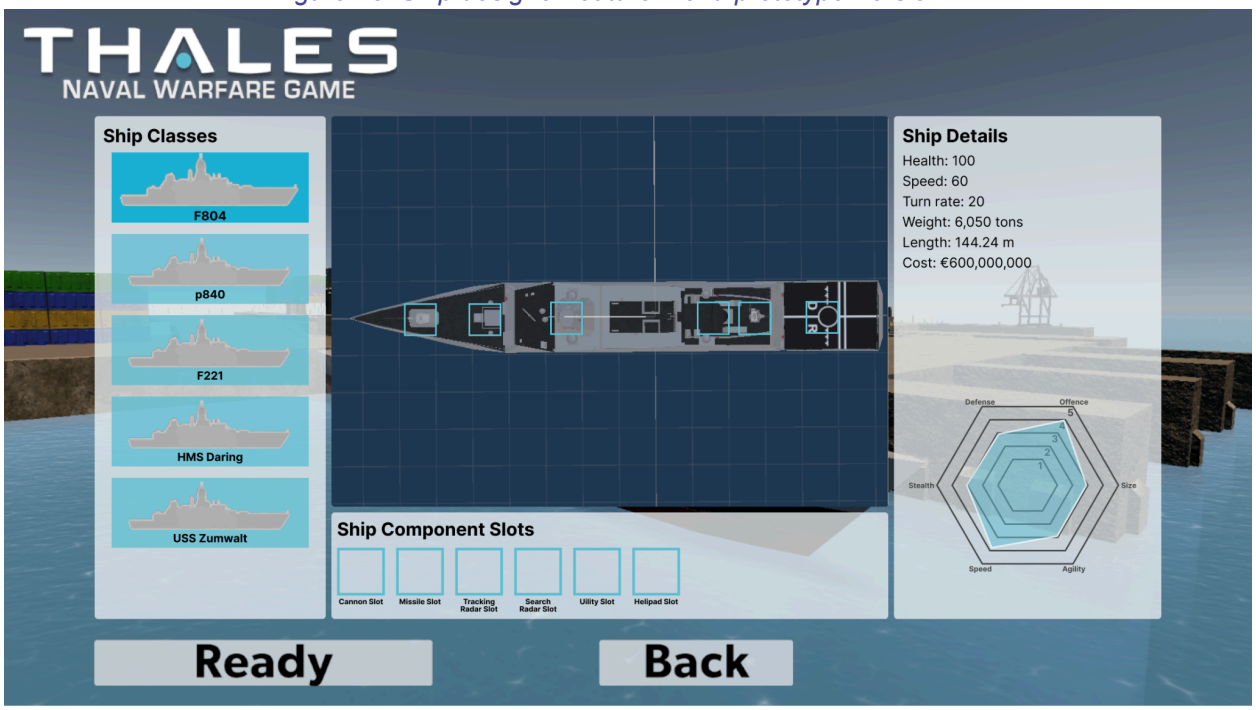
An important consideration regarding the scope of this iteration, and the project in general, is that the aesthetics of the UI will not be considered outside of its layout. The UI has already been established multiple times by previous groups, and Wiebe Huynh has made it clear that the overall UI of the game should not be adjusted. Therefore, the UI aesthetic will not be changed in this project, and the ship designer's UI will aim to fit the existing style using the analysis performed in the previous section.

8.4. Ideating Menu Layouts

The ideation process for this iteration was rather brief because the inspirations for the ideas were very strong. This meant that the brainstorming led to very few results because of the success of similar concepts such as Stellaris. However, the brainstorming did result in two interesting versions of the menu layout:

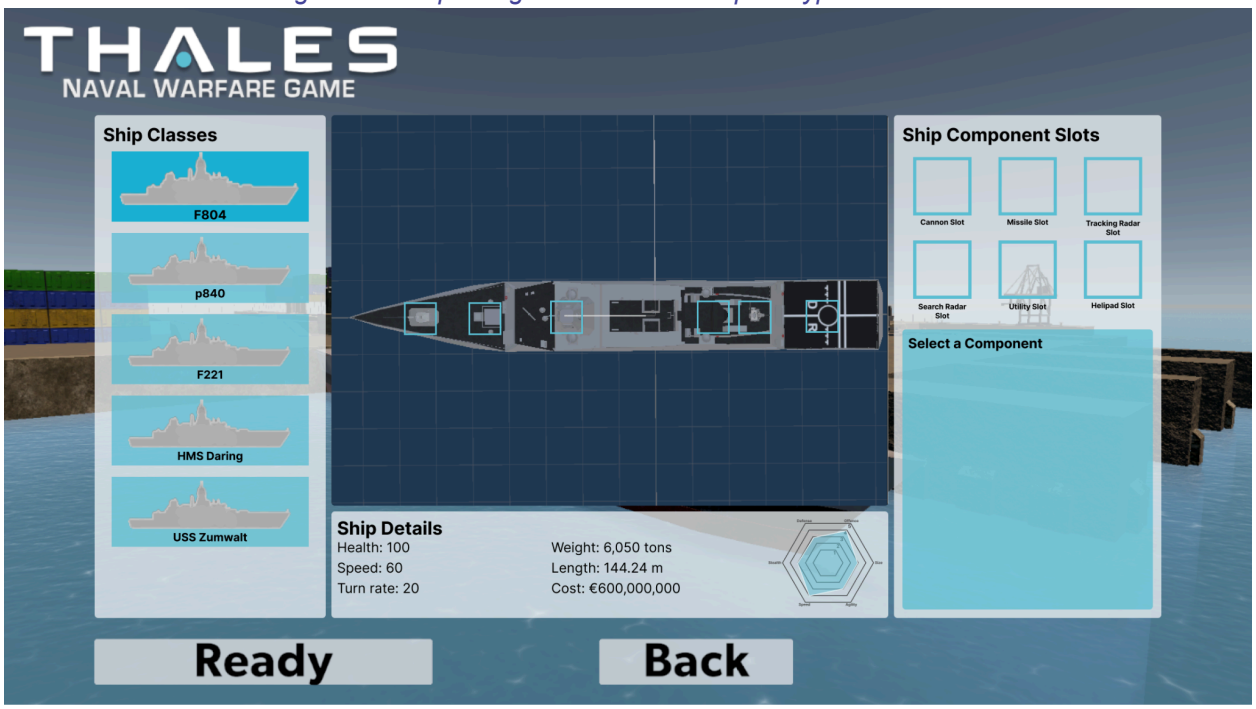
Version A

Figure 15. Ship designer feature menu prototype Version A.



Version B

Figure 16. Ship designer feature menu prototype Version B.



Both versions retain a very similar layout to Stellaris. This layout is intuitive because by following the menu from left to right, the user is guided along the steps in the right order (first select the

ship class, then select components). Both versions also feature a viewport which can display a 3D version of the selected ship class to make the feature less abstract for the player.

Where the versions differ, however, is in how they display the component slots and the ship stats/details. Version A remains heavily inspired by the Stellaris layout, with the component slots underneath the ship viewport and the ship details on the right side. Version B, on the other hand, has these sections flipped.

The outcome of this ideation phase was rather inconclusive. Both versions had merit, and it was difficult to assess which one fit the requirements better.
The decision was therefore made to perform an A/B test with the target audience to better understand their differences. While the images of the menu layouts above were not interactive, they had to be made interactive on a low fidelity level to get the best results from the test.

8.5. A/B Testing

To appropriately test for the best menu layout between the two versions, an A/B test procedure was devised.

8.5.1. A/B Testing

AB testing, in the context of game menu design, involves comparing two versions of a menu (A and B) to determine which performs better based on specific metrics. For example, a game developer might create two different layouts for an in-game shop menu: Version A with a horizontal navigation bar and Version B with a vertical one. Players are then randomly assigned to experience either Version A or Version B. By tracking metrics like time spent navigating the menu, conversion rates for in-game purchases, or player satisfaction surveys, the developers can statistically analyse which menu design leads to more desirable outcomes. The goal is to identify changes that optimise player experience and achieve design objectives, whether it be increased engagement, clearer navigation, or higher monetisation(*A/B Testing in Mobile Games – Superscale*, 2024).

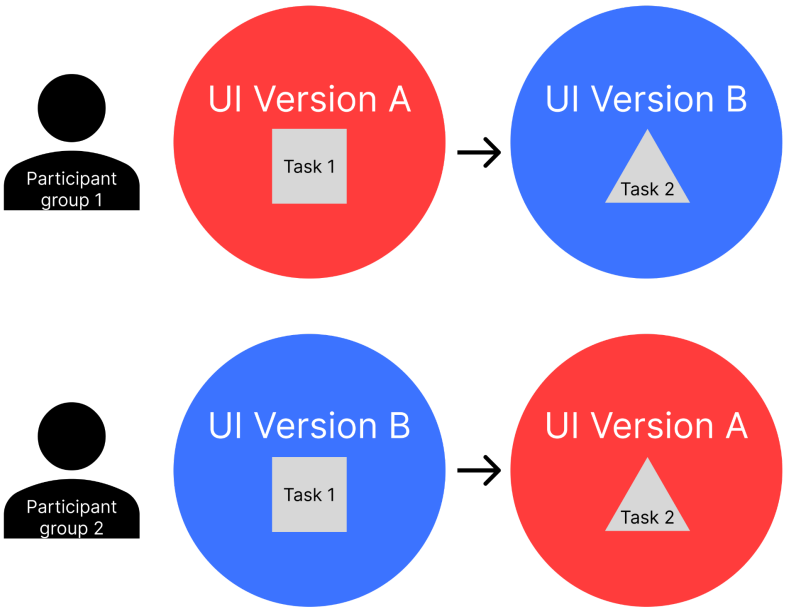
Despite its utility, AB testing is susceptible to some forms of bias. One significant weakness is selection bias, which can occur if the random assignment of players to versions isn't truly random, leading to one group having inherently different characteristics than the other (Vrountas, 2016). Another is novelty bias, where users might initially interact more with a new design simply because it's different, not necessarily because it's superior; this effect can fade over time, leading to misleading short-term results (Shukairy, 2018).
Conversely, pre-existing bias can occur if users are already accustomed to a certain menu paradigm and resist a new, potentially better, design simply due to habit. Finally, **experimenter bias** can creep in if the people designing or analyzing the test have conscious or unconscious preferences for one version, influencing how the experiment is set up, run, or interpreted, potentially leading to a self-fulfilling prophecy rather than an objective evaluation (*A/B Testing: Overcoming Cognitive Bias!* | *Kameleoon*, 2024).

8.5.2. Testing Procedure

Testing would be done by asking the participants to complete a different task in each version and asking them questions about it. However, the testing would be split between 2 groups: one group will test version A first, while the other will test version B first. To test the usability of the menu versions, two simple tasks were devised, each to be performed in a different version.

Regardless of the version order, task 1 would be tested first, and task 2 would be tested second. This ensured that between the two groups, each task was performed in a different version. The test would be performed by sending a questionnaire, which would include links to the appropriate prototypes as well as follow-up questions to inquire about the preferences of the participants.

Figure 17. Diagram of testing procedure.



Splitting the test into two groups, each starting with a different version, was done to minimise the bias effect from the first or last tested version. A participant might have a preference for the first version tested, not because it was more usable, but because they grew more familiar with it compared to the second one.

The tasks to be performed by the test participants are as follows:
Task 1:

1. Click ready to get to the ship selection screen.
2. Get to the ship customisation menu.
3. Select the USS Zumwalt class.
4. Select the search radar module with the highest sweep RPM.
5. Click ready

Task 2:

1. Click ready to get to the ship selection screen.
2. Get to the ship customisation menu.
3. Find the ship with the most health.
4. Select the cannon module which has the best offensive capabilities based on the diagram.

These tasks were made to be as simple as possible while still encouraging the participant to interact with the important aspect of ship designer menu: the ship class selection, the ship component slot section and the ship details section.

8.5.3. Prototyping for Test

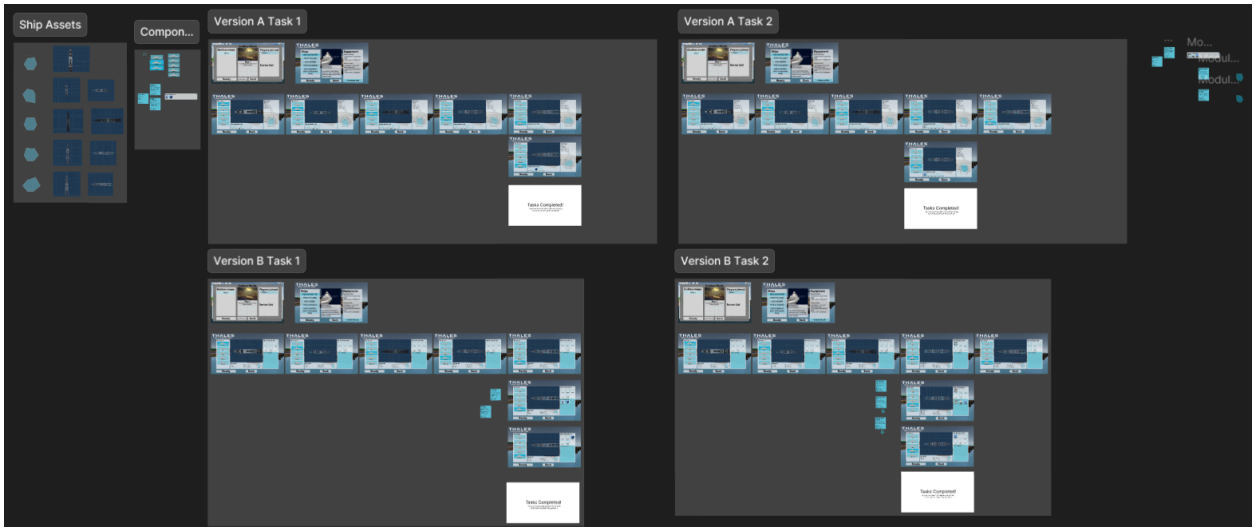
To conduct a meaningful A/B test on the usability of the menu layout versions, the participants must be able to perform these tasks in each version to form a meaningful opinion on their preferences. For this purpose, the prototypes shown in the ideations section were expanded upon in Figma to add interactivity.

In the case of prototyping for the test, Figma offered the possibility to create simple interactions which could be used to simulate a working system and interface. It is important to note however that, due to the simplicity of these interactions, Figma can only be used to simulate rather simple functions in the prototype. This illusion of functionality is created by sometimes transitioning to duplicated scenes on interaction, with a minor change to simulate the system adapting to the users input.

Overall, Figma can only be used to simulate basic flows for prototyping and not for making complex system. This is why only the features necessary for the tasks in the test were prototyped.

With this in mind, four Figma prototype flows were created: two for version A and B, each allowing to complete task 1 or 2. Separating the tasks in different flows even within the same version made it less likely that the participant would accidently complete the wrong task.

Figure 18. Screenshot of prototypes in Figma.



Below are links to all 4 prototype flows used in the questionnaire:

Version A

- Task 1: https://www.figma.com/proto/y7PK2pIGbkIgM7C12Yb9Yv/Naval-Warfare?page-id=0%3A1&node-id=1582-365&viewport=2720%2C-5352%2C0.72&t=4mX41DIhJw2YI2ft-1&scaling=min-zoom&content-scaling=fixed&starting-point-node-id=1582%3A365
- Task 2: https://www.figma.com/proto/y7PK2pIGbkIgM7C12Yb9Yv/Naval-Warfare?page-id=0%3A1&node-id=1588-517&viewport=2720%2C-5352%2C0.72&t=4mX41DIhJw2YI2ft-1&scali

ng=min-zoom&content-scaling=fixed&starting-point-node-id=1588%3A517&show-proto-sidebar=1

Version B

- Task 1: https://www.figma.com/proto/y7PK2pIGbkIgM7C12Yb9Yv/Naval-Warfare?page-id=0%3A1&node-id=1595-1113&viewport=2720%2C-5352%2C0.72&t=4mX41DIhJw2YI2ft-1&scaling=min-zoom&content-scaling=fixed&starting-point-node-id=1595%3A1113&show-proto-sidebar=1
- Task 2: https://www.figma.com/proto/y7PK2pIGbkIgM7C12Yb9Yv/Naval-Warfare?page-id=0%3A1&node-id=1603-1188&viewport=2720%2C-5352%2C0.72&t=4mX41DIhJw2YI2ft-1&scaling=min-zoom&content-scaling=fixed&starting-point-node-id=1603%3A1188

8.5.4. Questionnaires

The questionnaires to collect the data were made using Google Forms. This made it easy to share the forms with the participants as well as to visualise the data in graphs automatically. The questions for the questionnaire were formulated using AI for inspiration. This helped speed up the process while still making sure the right questions were considered to get useful answers. The goal of the questionnaire was to be able to determine the preferences of the participants and the reasons for their preferences while inquiring about potential biases.

The questions, for the most part, were closed-ended to make it easier to collect quantitative data while also making it easier and faster for the participant to fill out. Some open questions were present to offer the participant an opportunity to explain themselves in more detail, but these questions were made optional to not discourage the participant.

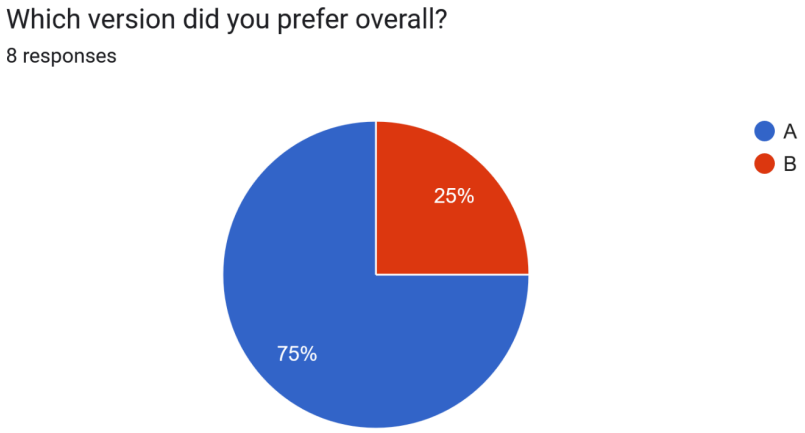
The questionnaires were sent to student groups with an attempt to vary the assumed gaming experience of said groups. Due to the nature of the study for which this assignment is being made, a lot of the students who were initially considered had extensive gaming experience, which might affect the results since the target audience also includes students with little to no gaming experience. Student groups with less predisposition to gaming as a hobby were therefore sought out to balance the demographic.

8.6. Results

While trying to determine which of the two versions would be best after the ideation phase, the hypothesis was that Version A would be better because the layout seemed more space-efficient and more intuitive. The component slot section, being under the ship viewport, seemed more logical, and the vertical version of this section in Version B didn’t work as well as the horizontal space of Version A.

The results for both questionnaires were mainly in favour of Version A, as shown in Figure 19. The overall sentiment expressed by the participants in the open question at the end of the questionnaire was that Version A’s Ship Details section was more readable compared to Version B. Additionally, the Ship Component Slot made more sense underneath the viewport in terms of space and usage flow.

Figure 19. Results diagram of questionnaire A/B.



The rest of the question seems to support this result. Most participants found both versions to be adequately intuitive and easy to complete the tasks in. Most of the issues expressed in the open answers related to the limitations of the prototypes.

There is, however, an issue with the results shown in questionnaire B/A. In this questionnaire's last section, the graphs for the multiple-choice questions about the participants' preferred version indicate a preference for Version B. This is, however, a misunderstanding on the part of the participants. Participants indicated Version B because they assumed it was the second prototype they tested, but in this test, the second prototype they tested was Version A. This is supported by the open questions, where participants only indicate a preference for the layout of Version A.

Figure 20. Results Diagram of questionnaire B/A.

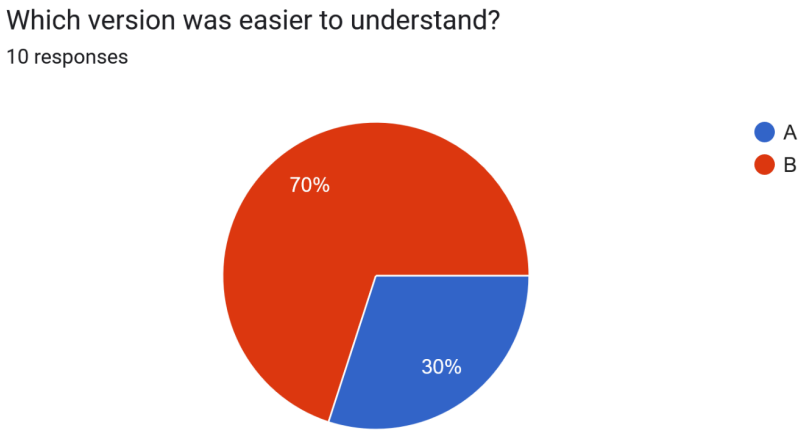
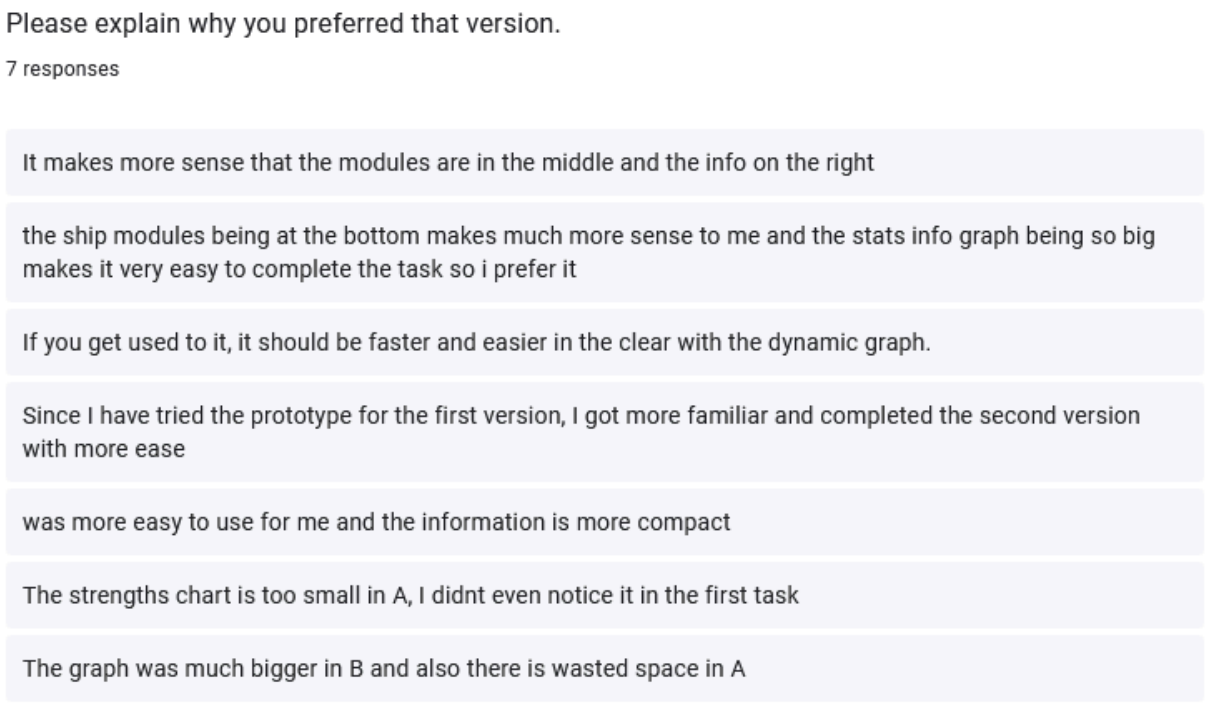


Figure 21. Answers from questionnaire B/A.



Even though images of the menu layouts were shown with their appropriate version name in the final section of the questionnaire, this misunderstanding could have been prevented by making the naming more intuitive for the participant while still being able to track which Version they represent for data analysis.

In conclusion, the most intuitive layout for the ship designer feature's menu between Version A and Version B is Version A. This gives further insights into sub-question 3 (How can the user interface be designed to make the ship's customisation intuitive and informative for players?) from the Research Questions section, by establishing a user interface for the ship designer that intuitively helps the player navigate the feature even without prior knowledge.

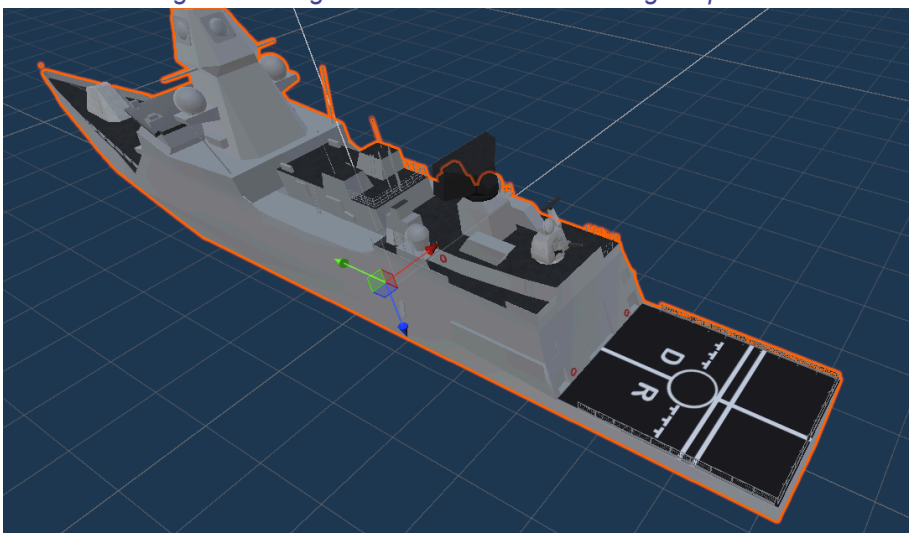
8.7. Concept Changes

While the main focus throughout this iteration was on the menu layout of the ship designer feature, the core concept was also further developed. One of the main aspects of the system that was expanded upon is how the components slot would be implemented. In the Stellaris example, component slots have a type that determines the kinds of components a ship class can equip. This is an important aspect of the system as it ties in heavily with balancing the ship classes and also creating a more strategic dynamic for the player due to the added limitations to play around.

Something similar needed to be done for Thales Naval Warfare's ship designer. The existing ability system needed to be taken into consideration, but fortunately, it already had ability types that most ships followed. While most component/ability "types" only involved one ability, they could be adjusted and expanded upon to fit the requirements for this feature.

A good example of an existing slot type would be the missiles, which already come in different versions. If a ship class had a “missile” component slot type, then the player would be able to choose from the variety of missile types to equip on their ship.
The other abilities that did not benefit from this existing variety would require some more consideration.
A particular example of this is the “Helicopter” ability. The challenge in this ability is that it would be hard to categorise it with anything other than “helicopters” because the helipad would need to be visually modified out of the models if the “Helicopter” ability could be swapped out for a different ability.

Figure 22. In-game model of F804 showing helipad.



Instead, ship classes with a helipad would be able to select different types of helicopter components in their helipad component slot. These helicopters would fulfil different roles from each other, providing another layer of strategic consideration. The specifics beyond that have not been explored yet.

In conclusion, the main adjustment that has been made to the concept is the consideration of the component slot types and how to categorise the existing abilities without requiring a complete rework.

9. Iteration 3 - Educational Features

In this iteration, the “educational” features of the ship design system will be further explored to determine which ones would bring value to the overall experience. This is a continuation of the ideation done in the first iteration, which had been left for later to focus on defining the core concept further in Iteration 2.

9.1. Wiebe Huynh’s Expectations

To better understand the expectations regarding the informational features, a discussion was held with the product owner of the project, Wiebe Huynh. His input was important because one of the project’s goals is to promote Thales equipment throughout the game. This discussion was held with the aim of better understanding his perspective and his expectations going into this iteration.
The key takeaways from this discussion involved Wiebe Huynh’s expectations regarding how components are promoted to the player for gameplay purposes. He described wanting a feature which allows the player to compare the stats of components within the same category to each other to determine which one is better. He mentioned that this would also be tied into how Thales components would ideally be promoted by highlighting their strengths.

Overall, one of the key aspects of the ship designer feature according to Wiebe Huynh should still seek to promote Thales’ role in the industry, like for the rest of the game should.

9.2. Existing Features

A more in-depth exploration was done of game features that help players learn new information or assist them. The exploration was mainly conducted using AI to find examples of such features in existing games. AI helped find examples specific to games with ship designer features that may have otherwise never been considered.

Google’s Gemini suggested that the ship designer feature could enhance its educational value by integrating real-life information. Players could benefit from detailed component information overlays; for instance, hovering over a selected gun turret or helicopter slot might display its historical name, real-world specifications like caliber, muzzle velocity, or armor thickness, and a brief historical context detailing its development and notable applications.
Furthermore, a dedicated "Learn More" option could expand on these details, providing access to historical photographs, technical drawings, and more extensive textual explanations about the technology's evolution and strategic significance, potentially even including citations for deeper academic exploration.

More direct desk research was done by playing a selection of grand strategy game to look for other interesting examples. Stellaris, Age of Wonders 4 and Civilization VI, make extensive use of tooltips and in-game wikis to provide the player with easy-to-access information and context. While these games don’t necessarily fit into the same category as Thales Naval Warfare, they rely heavily on these informational features, which makes them interesting to analyse and draw inspiration from.

Figure 23. In-game screenshot of a Civilization VI tooltip (kreemac, 2021).

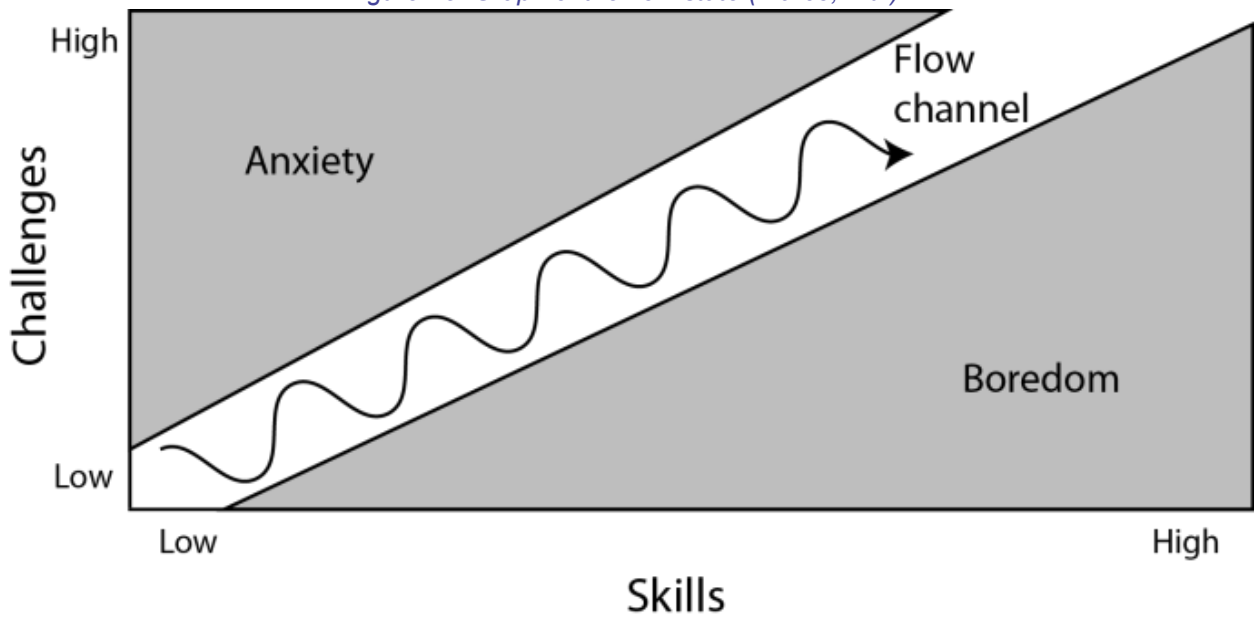
Figure 24. (“Screenshot of Civilization VI’s In-Game Encyclopedia,” n.d.).

Overall, most of the examples found throughout this exploration had already been considered in the ideation phase of the first iteration.

9.3. Defining Criteria

The discussion with Wiebe Huynh indicated his desire to have a feature that allows for the direct comparison of stats between components of the same type. This is because he wants players to see how Thales components compare to others out there, with the ultimate goal being to sell Thales as a company. However, based on the A/B tests conducted in Iteration 2, the open-ended questions revealed that people have very little to no knowledge about the specific properties of ship components.
Based on Mihaly Csikszentmihalyi’s Flow Diagram in Figure 25, expecting such an audience to focus on such specific details and be able to understand their significance would completely break the flow of the player since the “challenge” would be greater than their “skill” and would lead to anxiety (Icodewithben, 2023).

Figure 25. Graph of the flow state (Marco, n.d.).



The requirements for this iteration had to be devised with these interests in mind by finding a way to promote Thales' components in-game while keeping it simple enough to understand for an uninitiated audience.

The criteria are as follows:

1. Promotion: The feature's capacity to promote Thales equipment.
2. Intuitiveness: The feature's capacity to support an uninitiated player in naval warfare.
3. Feasibility: The feature's capacity to be implemented into the project.

These criteria will be used in the evaluation process of the ideas by attributing them a weight which will represent their importance. This weight will be decided upon with the team to make sure everyones interests are heard but also to have different perspectives.

9.4. Ideation

The ideation process for the educational/informational features had already been started in iteration 1 using the mind map method. In this iteration, ideas were added to the list over time as the project went on.

Iteration 1 ideas:

- **Idea 1: Tutor Character**
  - While the player is putting together their ship, the tutor character will appear on their screen to give them adaptive feedback on their choices concerning the mission they are about to engage in. The tutor character wouldn't explicitly tell the player what to do, but it would guide them to the best solution. If the player doesn't want its advice, it could be ignored or turned off.
- **Idea 2: Stats Diagram**
  - To give the player a visual representation of their ship's capabilities, a diagram will dynamically display this information and update it when the ship is changed.

This would help the player understand how different systems affect the qualities of their ship.

- **Idea 3: Tooltips**
    - Tooltips could be added to each system choice. This tooltip would display a description of the system and its stats. The description would mention the manufacturer and its intended use. The stats displayed would allow the player to understand what the system brings to the table.

New Ideas:

- **Idea 4: Description toggles**
    - One of the difficulties for this project is that the ship designer feature needs to expose the player to gameplay-related information as well as real-life information, without being overwhelming. This concept aims to tackle this issue through a button that toggles between these two types of information on ship classes and ship components.

The money/energy idea from the original ideation phase was left out because it didn't fit as well with the scope of this iteration. With the development of the ship designer concept, the money /energy idea fits more with potential progression implementations, which were left out of this project altogether.
Lastly, Wiebe Huynh expressed wanting to be able to directly compare components during the discussion described earlier in this iteration. In the Design Criteria section, it was established that it would clash too much with the target audience. A compromise could be found through the Stats Diagram idea, which would provide a similar concept without focusing too much on small details and overwhelming the target audience.

To best evaluate the ideas, simple prototypes with minimal interactivity will be created to communicate their core concepts. The evaluation of the ideas will be done as a team with Edwin Slottje, Max Weijers and Wiebe Huynh to determine how these ideas fit the criteria established in the previous section.

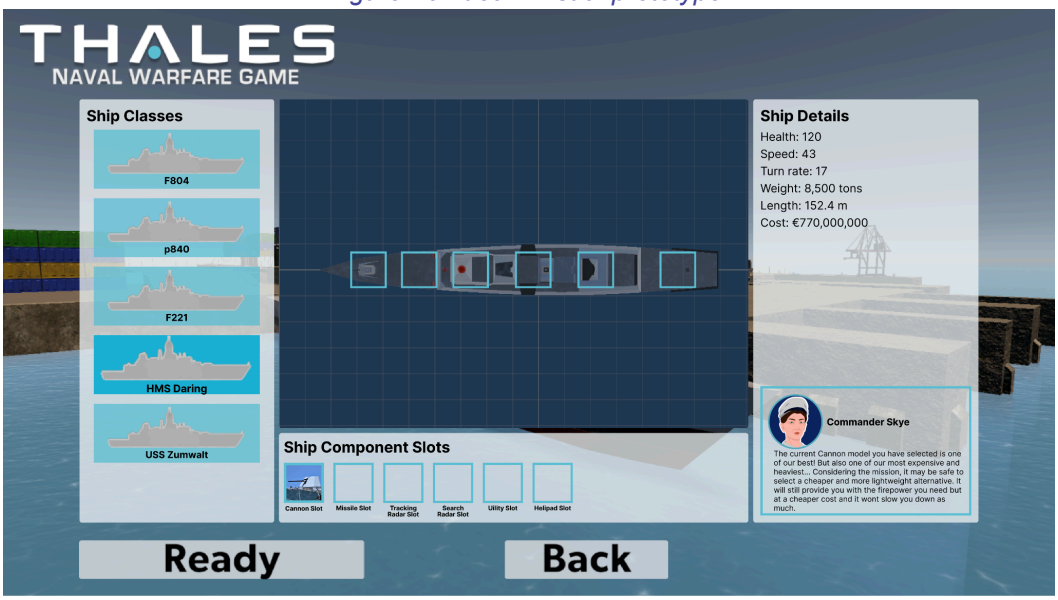
9.5. Prototyping

Using Figma, the ideas were prototyped to help with the visualisation of the concepts so they may be evaluated more accurately. Using the UI layout established in the previous iteration, the various ideas were implemented into separate prototypes to separate their functionality from each other so they could be judged more individually.

Since the prototypes' main purpose is to communicate the general concept of the ideas, which is why they focused on recreating the functionality without putting too much attention to the details of the information they present. For example, Idea 4's (see Figure 29) functionality was prototyped, but the contents of the information toggle were copied and pasted from a website. This content is not suited for this use case, but this would have to be developed further in the implementation process.

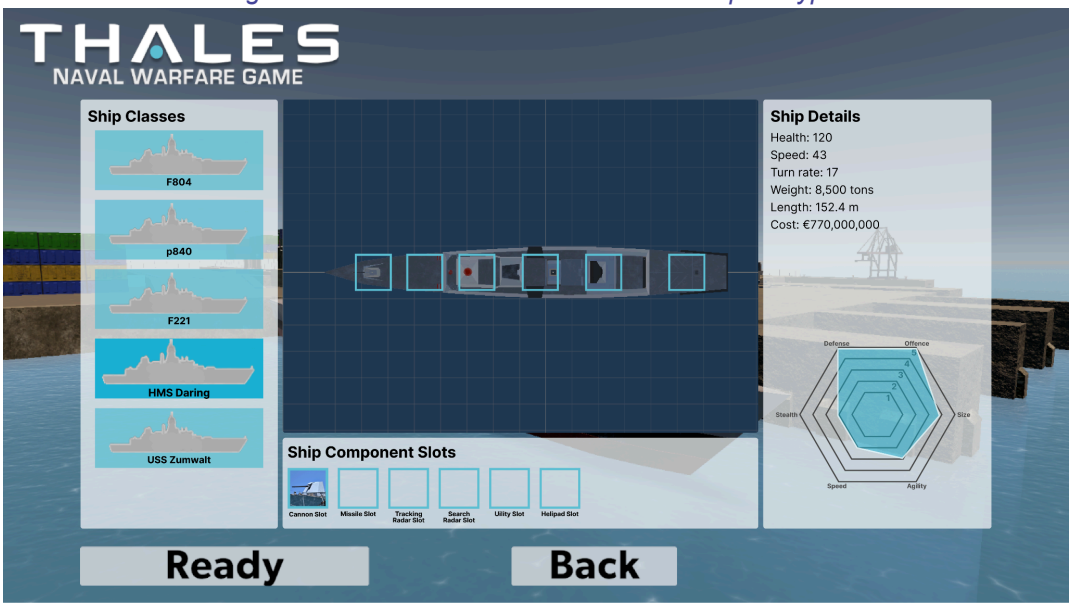
Throughout the process of making these prototypes, the ideas were further refined and defined. Idea 1's prototype is not interactive, but it showcases nonetheless how the feature would look if it were implemented. The tutor character used in this prototype is an existing character from the project used in the tutorial called Commander Skye. The character would adaptively guide the player to inform them if they are making good or bad choices based on the selected mission. This could also be used to provide more context on some equipment, such as radars.

Figure 26. Idea 1 visual prototype.



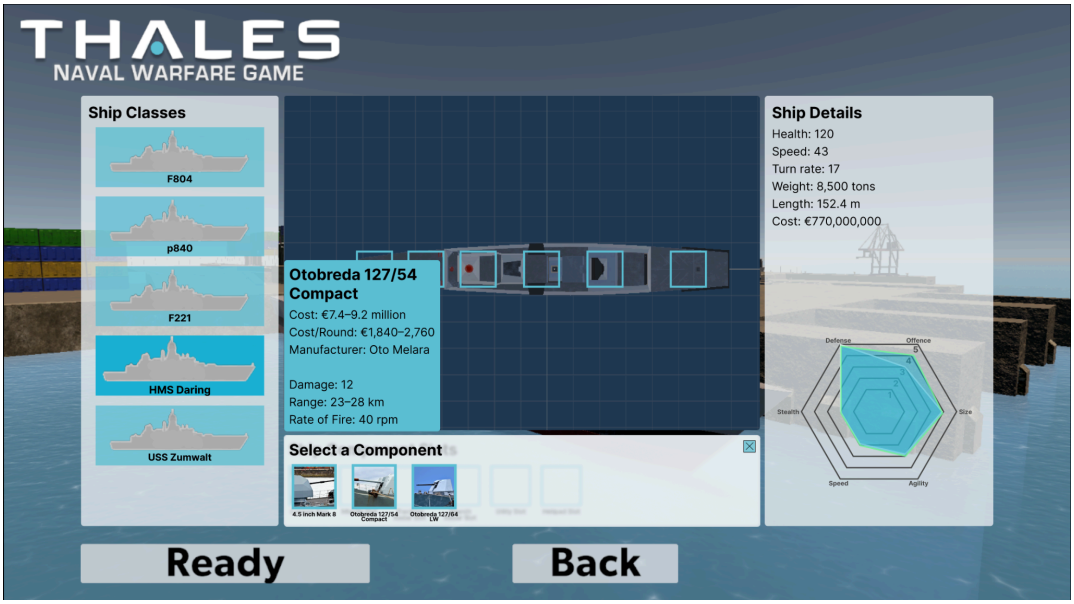
Idea 2 was inspired by the existing feature in the project, which is diagrams that represent the capabilities of the ships in different areas. This concept takes it to the next level by making them adapt to the selected components. While developing this concept in iteration 2 for the purpose to having the participants interact more with the UI, the concept evolved to also show expected changes when hovering over a component.

Figure 27. Idea 2 screenshot of interactive prototype.



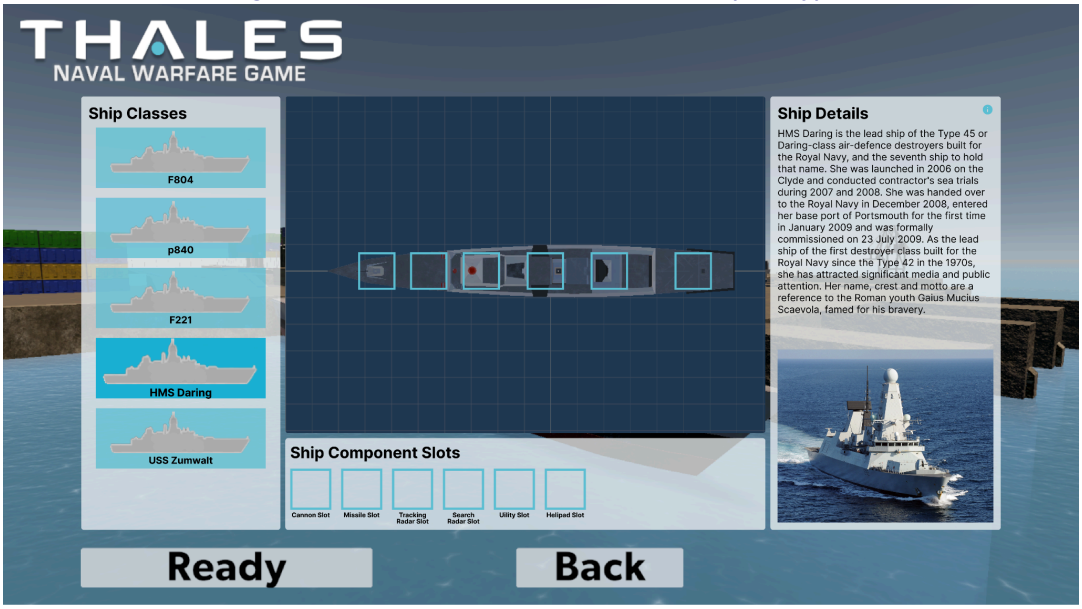
Idea 3 was also explored and prototyped in Iteration 2, as it seemed almost unavoidable. This feature is widely used in games that require a lot of information, such as grand strategy games. The concept didn't evolve much throughout the prototyping.

Figure 28. Idea 3 screenshot of interactive prototype.



Lastly, Idea 4's concept involved adding a toggle button which could be clicked to change the information being displayed from gameplay-oriented information to real-life-oriented information. The concept here is to give the player the ability to choose when they want to see additional information on a particular ship or component.

Figure 29. Idea 4 screenshot of interactive prototype.



The links below lead to the prototypes in figma:

- **Idea 1**: is not interactive and therefore does not need a link, the prototype is visible in Figure 26.
- **Idea 2**: https://www.figma.com/proto/y7PK2pIGbkIgM7C12Yb9Yv/Naval-Warfare?page-id=0%3A1&node-id=1764-815&viewport=625%2C-3982%2C0.18&t=ojwhfCTeI929DxNj-1&scaling=contain&content-scaling=fixed&starting-point-node-id=1764%3A815&show-proto-sidebar=1

- **Idea 3**: https://www.figma.com/proto/y7PK2pIGbkIgM7C12Yb9Yv/Naval-Warfare?page-id=0%3A1&node-id=1769-1643&viewport=625%2C-3982%2C0.18&t=ojwhfCTeI929DxNj-1&scaling=contain&content-scaling=fixed&starting-point-node-id=1769%3A1643&show-proto-sidebar=1
- **Idea 4**: https://www.figma.com/proto/y7PK2pIGbkIgM7C12Yb9Yv/Naval-Warfare?page-id=0%3A1&node-id=1769-1379&viewport=625%2C-3982%2C0.18&t=ojwhfCTeI929DxNj-1&scaling=contain&content-scaling=fixed&starting-point-node-id=1769%3A1379&show-proto-sidebar=1

9.6. Evaluation Procedure

The testing procedure for this iteration involved evaluating the ideas with the help of the development team and the product owner of the project. This would be done using the Idea Evaluation Matrix to guide the process. The Idea Evaluation Matrix was used in Iteration 1 to determine the best ship designer concept and is used again here in the same way.

An important aspect to consider for this particular procedure is that the ideas are technically not mutually exclusive. All the ideas could end up being selected for implementation without considering their feasibility or total intuitiveness. This is why, on top of the scoring, some consideration of how these features work together and what roles they fulfil is necessary.

9.7. Results

During the meeting with the team, the weight of the criteria was first discussed and established. The promotional potential criteria received the highest weight. As the product owner, Wiebe Huynh put a lot of importance on the criteria, as it ultimately goes back to the purpose of the game. Intuitiveness was given the second-highest weight. It scored higher than feasibility because Wiebe Huynh felt it was more important that ideas with the most potential in the two other criteria were selected to make sure the ideas best fit the needs of the project.

Table 2. Results of idea evaluation in form of an Idea Evaluation Matrix.

		Options							
		1. Tutor Character		2. Stats Diagram		3. Tooltips		4. Information Toggle	
Criteria	Weight	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Promotional potential	0.5	3	1.5	2	1	7	3.5	7	3.5
Intuitive	0.3	6	1.8	8	2.4	7	2.1	6	1.8
Feasible	0.2	4	0.8	6	1.2	7	1.4	7	1.4
Total	1		4.1		4.6		7		6.7

Next, the ratings were given for each criterion, one idea at a time. The two ideas that scored the highest were the Tooltips and the Information toggle. Their potential for promoting Thales equipment in their content was highly valued, but both ideas scored high on every criterion. Both

concepts are already widely used in games and software and are therefore very intuitive to anyone with experience in software. In terms of feasibility, both require very little development according to the team's engineer, Edwin Slottje.

The stats diagram scored low in its potential to promote Thales. This is because the feature is mainly targeted at helping the player make gameplay choices rather than learning about real-life information on ships and equipment.
However, it scored the highest out of all ideas in terms of intuitiveness. This is because it could help new players a lot in understanding the impact of their choices in the ship designer. Its implementation would be a bit more complex than Ideas 3 and 4, but would still be considered feasible.

Lastly, the Tutor Character idea scored the lowest overall. The reason can be attributed to the fact that the concept heavily relies on text, which the target audience may not read in the context of a career fair, and that this text needs to have a system that adapts it to the choices made by the player. This would require a lot of content, on top of a fairly complex system that can take multiple factors into account and reformulate them into text.

9.8. Outcome

Based on the results, the features that were picked are Ideas 2, 3 and 4. Each of these ideas complements the other's weaknesses with their strengths. While the stats diagram idea was lowly rated on its promotional potential, it was considered the best feature to help the player navigate the ship designer feature. The tooltips and information toggles would work in a similar way to promote Thales equipment in their contents while also giving the player useful gameplay information on the components when hovered over.

The outcome of this iteration further answers sub-questions 1(What are the key features of a ship customisation system that can enhance the experience of the *Thales Naval Warfare* game?) and 3 (How can the user interface be designed to make the ship's customisation intuitive and informative for players?) by exploring key features that could support the current gameplay experience of Thales Naval Warfare. The outcome of this iteration also further develops the user interface of the feature through other UI elements.

10. Conclusion

This graduation project explored how a ship designer feature could enhance both the gameplay experience and the educational value of the Thales Naval Warfare game, by answering the main research question: "How can a ship designer feature assist the core gameplay of the Thales Naval Warfare game in improving career fair attendees' understanding of the role radars play in naval warfare?".

The preliminary research revealed a gap: career fair attendees possessed minimal prior knowledge of naval warfare and radar systems. During playtests, participants often overlooked the importance of ship equipment like radar and missiles, indicating that the game's existing mechanics were not effectively communicating their strategic significance. This highlighted the necessity for a more engaging and intuitive approach to educate players on radar's critical role.

To fill this gap, the project focused on designing a ship customisation system that would be gameplay-impactful, offer clear educational insights, and be user-friendly for individuals new to naval warfare concepts. Drawing insights from existing game customisation systems, the "ship system customisation" emerged as the most viable concept. This choice was based on its potential for influencing gameplay and delivering educational content, distinguishing it from less effective alternatives like "crew customisation" , which tended to divert focus away from crucial ship systems. Although full implementation of this feature was constrained by the need for reworking of the game's existing ability system, the conceptual groundwork was firmly established.

The user interface (UI) design was refined through A/B testing to ensure maximum intuitiveness and informative delivery. Version A of the menu layout was identified as the preferred design, mainly due to the increased readability of its "Ship Details" section and the intuitive placement of "Ship Component Slots" beneath the viewport. This optimized UI is fundamental to enabling players to easily grasp the implications of their customisation choices, thereby fostering a clearer understanding of radar systems and their strategic importance.

In conclusion, while practical limitations prevented complete in-game prototyping, this project laid a conceptual and design foundation for a ship designer feature. It indicated that a gameplay-impacting ship customisation system, specifically one focusing on modifying ship systems, is highly promising for improving career fair attendees' understanding of radar's role in naval warfare.

11. Recommendations

Based on the findings from this project, some recommendations are important for the future development and success of the Thales Naval Warfare game and its ship designer feature.

Firstly, the core game concept requires reconsideration. The playtest results from Iteration One clearly showed its ineffectiveness in achieving the intended educational objectives at its current stage. A re-evaluation and potential redesign of the core gameplay loop are necessary to ensure it more effectively explains naval warfare concepts and the strategic role of radars to career fair attendees.

Secondly, for the ship designer feature to be fully functional and seamlessly integrated into the game, a comprehensive rework of the project's ability system is important. This step involves grouping all related aspects of any given ability, including its visuals, scripts, and underlying data, together. Such a structural change would enable abilities to be easily added, removed, and modified within the ship designer system.

Finally, to fully establish the success and real-world impact of the ship designer feature, it would be beneficial to develop a fully working prototype. This prototype should then be tested directly with the target audience.

12. Discussion

The outcome of this project does explore aspects of the main question and provides some justification for the conclusion but is ultimately not fully answered due to a lack of a working prototype of the full feature which would be tested with sufficient members of the target audience. This is in part due to an oversight in planning caused by inexperience and a misunderstanding of the expectations for this assignment.
A lot of time was spent trying to work out the feature itself even though the focus should have been on answering the research questions. This confusion led to a lot of time lost trying to understand the direction the project needed to head into. About half of the time of the project was spent on the first iteration trying to understand what was supposed to happen.

The initial playtest from Iteration 1 was not good enough to draw solid conclusions from due to a lack of participants. This was difficult to remedy because playtesting at a fair is often forbidden and no new opportunity presented itself in time. However, observations made during the playtest did provide valuable insights on the project as a whole.

While the research side of this project did not provide full answers to the question, the design of the ship design feature did create a solid foundation for future development. The feature does show promise in its ability to spread out the information exposure to the player in a way that would enhance their ability to learn something new on the topic of radars and naval warfare.

13. Self-Reflection

While there were some issues with my process for this project, I learned a lot about my abilities to go in depth in terms of analysis, design and documentation of my process. While the research aspect of this project could be improved, I believe that, as a game mechanics designer, I successfully managed to combine the Thales Naval Warfare project requirements with the task of creating a ship design system that takes into consideration the target audience and the stakeholders' expectations.

Furthermore, I think another personal strength that surfaced in this project was my ability to adapt quickly and re-evaluate the vision of the project. I described in the discussions my struggles with understanding what the school's expectations were for this project, which led to confusion and a lot of time spent aimlessly moving forward in what felt like random directions. I was left with very little time when I finally felt like the direction of the project became more clear to me, even if the school's expectations were still not clear. As my understanding of the project improved, I was able to adapt and fill in the gaps quickly to try and make up for lost time.

An area of improvement would be in my planning capabilities and scope definition. I learned a tremendous amount about both these aspects of project management during this project, both new skills and how much there is still to learn. While I did attempt to make a plan at the very beginning of the project, it quickly fell apart due to the issue I described regarding the confusion about the project's expectations. After a few weeks, I gave up on maintaining said plan, which hurt my ability to manage the time left in the project. I had initially planned more iterations with the aim of answering the main research question more thoroughly, but it quickly became evident that there was not enough time left.
To improve on this, I think I need to focus on planning one iteration at a time. I would define the scope of the iteration beforehand into something manageable withing whatever timeframe I have.

My plan for the future is to look for a game design job in the gaming industry as my priority. In particular, I hope to be a game mechanics designer as I really enjoy designing mechanics and system that affect the players behaviour.
However, due to the current state of the game industry, if it proves to difficult to find a job I'm considering starting my own business in gamification. The gamification industry seems promising since many companies are starting to see the benefits of gamifying various aspects of their workflows and products.

Overall, this project has taught me a tremendous amount about my capabilities as a game designer in terms of documentation and project management.

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15. Appendices

15.1. Appendix A: Questionnaires

15.1.1. Iteration 1 playtest questionnaire:

Graduation Assignment Playtest

This project is being developed at Thales Hengelo. Thales is a French multinational company specializing in aerospace, defence, security, and transportation. It develops advanced technology solutions, including avionics, cybersecurity, and military systems. The offices in Hengelo focus on the development of various radar systems for defence and naval warfare.

Thales Hengelo is developing a game to help them introduce career fair attendees interested in Thales to the importance of radars in defence and naval warfare. The Thales employees who are at the booths at these career fairs find it difficult to convey this concept using only verbal or visual methods because of how abstract it is to a civilian audience.

The goal of this test is to asses the effectiveness of the game in helping the player better understand naval warfare dynamics and the role radars play in it. For this playtest, the playtester will first answer a few questions to understand the baseline of their knowledge on the this topic. Next, the playtester will play through the game and will then answer another set of questions to assess any changes in their understanding of the topic.

Thank you for participating!

Pre-game questions

Please answer the following questions before playing the game.

1. What is your age?

   Mark only one oval.

   - ◯ 16-19
   - ◯ 20-25
   - ◯ 26-30
   - ◯ 31-40
   - ◯ 41-50
   - ◯ 51-60
   - ◯ 61+

2. What is your gender?

Mark only one oval.

- ◯ Female
- ◯ Male
- ◯ Prefer not to say
- ◯ Other: _____

3. What field are you studying

_____

4. What year are you in?

Mark only one oval.

- ◯ 1st
- ◯ 2nd
- ◯ 3rd
- ◯ 4th

5. How familiar are you with games

Mark only one oval.

	1	2	3	4	5	
Nev	◯	◯	◯	◯	◯	I'm a gamer

6. Do you have an existing interest or occupation that relates to warfare(history, realistic games, simulators, job, etc.)?

Dropdown

Mark only one oval.

- Yes
- No

7. How would you rate your level of understanding of modern naval warfare?

Mark only one oval.

	0	1	2	3	4	5	6	7	8	9	10	
Very												Expert level

8. Please explain your answer to the previous question.

Post-Game questions

Once you've answered the previous set of questions and have played the game you may answer the following questions.

9. How would you rate the gameplay experience?

1 2 3 4 5

☆ ☆ ☆ ☆ ☆

10. How would you rate the experience of playing the game at a career fair?

1 2 3 4 5

☆ ☆ ☆ ☆ ☆

11. Please briefly describe how you would approach playing the game differently if you played again.

12. What are new things you've learned about modern naval warfare?

13. How would you rate your level of understanding of modern naval warfare after having played the game?

Mark only one oval.

	0	1	2	3	4	5	6	7	8	9	10	
Very	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Expert level

14. How did playing the game affect your understanding of naval warfare?

15. If you have any questions or things you think the game should explain more regarding the topic of naval warfare, please write them here.

15.1.2. Test Version A/B:

Thales Graduation Assignment Test

This test is being conducted to identify the best UI layout for a ship customization system. This system is currently being designed as part of my graduation assignment at Thales Nederland for an ongoing game project about naval warfare.
In this test, you will be asked to complete 2 simple tasks, each in a different version of the UI for the ship customization system. Each version will be followed with a set of questions about your experience using them.
Thank you in advance for taking the time to participate!

* Indicates required question

1. What is your gender?

Mark only one oval.

- ◯ Female
- ◯ Male
- ◯ Prefer not to say
- ◯ Other: _____

2. What is your age?

Mark only one oval.

- ◯ Under 18
- ◯ 18-20
- ◯ 21-23
- ◯ 24-26
- ◯ 27+

3. Have you ever played a naval warfare or ship simulation game before?

Mark only one oval.

- ◯ Yes
- ◯ No

4. How familiar are you with ship customization interfaces?

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Familiar

Version A

Your goal for this UI layout version will be to complete the following tasks in the prototype linked below:

1. Click ready to get to the ship selection screen.
2. Get to the ship customisation menu.
3. Select the **USS Zumwalt** class.
4. Select the **search radar module** with the highest **Sweep RPM**.
5. Click ready

(Optional)If you're willing, it would be nice to keep track of how long it took to complete all the tasks.

---> **Link to Prototype** <---

⚠️ **If the prototype is very zoomed in, click the top right sliders icon and click "Fit width and height"** ⚠️

5. How easy was it to understand what each part of the menu does? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Clear

6. How easy was it to complete the task using this menu? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Easy

7. How intuitive did this menu feel? *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Very Intuitive

8. Were there any moments you felt confused or unsure?

9. Did you notice any unnecessary or missing information/features?

10. How fast do you feel you completed the task? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Fast

11. *(Optional if you're recording actual time separately)* Did you feel rushed or did it flow naturally?

Mark only one oval.

	1	2	3	4	5	
Rusł	◯	◯	◯	◯	◯	Smooth

Version B

Your goal for this UI layout version will be to complete the following tasks in the prototype linked below:

1. Click ready to get to the ship selection screen.
2. Get to the ship customisation menu.
3. Find the ship with the most **health**.
4. Select the **cannon module** which has the **best offensive** capabilities based on the **diagram**.

(Optional)If you're willing, it would be nice to keep track of how long it took to complete all the tasks.

---> **Link to Prototype** <---

⚠️ **If the prototype is very zoomed in, click the top right sliders icon and click "Fit width and height"** ⚠️

12. How easy was it to understand what each part of the menu does? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Clear

13. How easy was it to complete the task using this menu? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Easy

14. How intuitive did this menu feel? *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Very Intuitive

15. Were there any moments you felt confused or unsure?

16. Did you notice any unnecessary or missing information/features?

17. How fast do you feel you completed the task? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Fast

18. *(Optional if you're recording actual time separately)* Did you feel rushed or did it flow naturally?

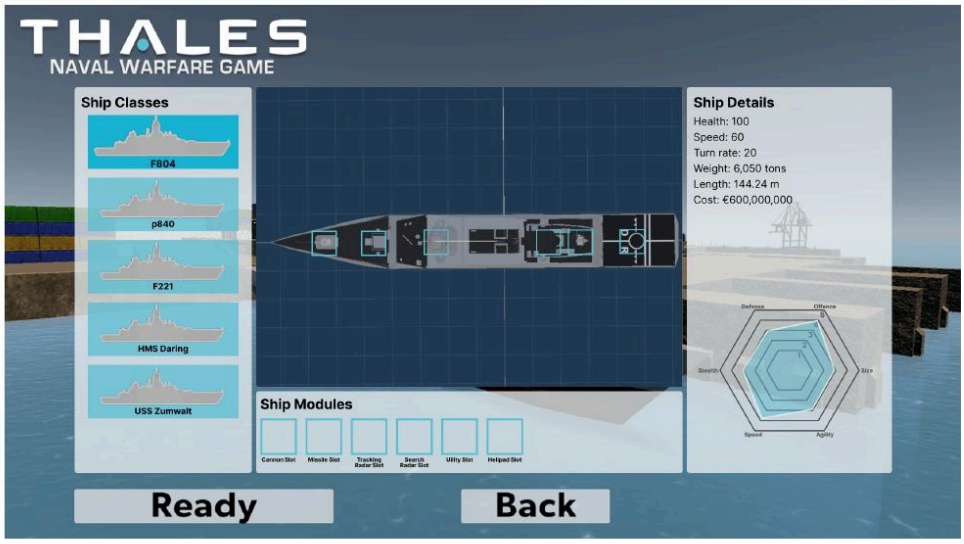
Mark only one oval.

	1	2	3	4	5	
Rusł	◯	◯	◯	◯	◯	Smooth

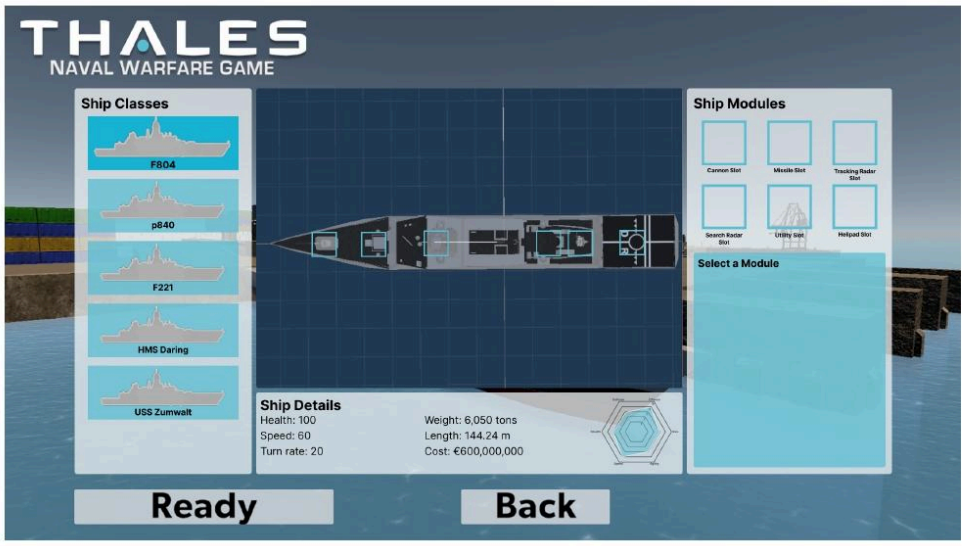
Final Questions

These are the final questions of of the test! Here are pictures of the versions in case you don't remember which is which:

Version A



Version B



19. Which version was easier to understand? *

Mark only one oval.

- A
- B

20. Which version was faster to use? *

Mark only one oval.

- A
- B

21. Which version felt more intuitive? *

Mark only one oval.

- A
- B

22. Which version did you prefer overall? *

Mark only one oval.

- A
- B

23. Please explain why you preferred that version.

15.1.3. Test Version B/A:

Thales Graduation Assignment Test

This test is being conducted to identify the best UI layout for a ship customization system. This system is currently being designed as part of my graduation assignment at Thales Nederland for an ongoing game project about naval warfare.
In this test, you will be asked to complete 2 simple tasks, each in a different version of the UI for the ship customization system. Each version will be followed with a set of questions about your experience using them.
Thank you in advance for taking the time to participate!

* Indicates required question

1. What is your gender?

Mark only one oval.

- ◯ Female
- ◯ Male
- ◯ Prefer not to say
- ◯ Other: _____

2. What is your age?

Mark only one oval.

- ◯ Under 18
- ◯ 18-20
- ◯ 21-23
- ◯ 24-26
- ◯ 27+

3. Have you ever played a naval warfare or ship simulation game before?

Mark only one oval.

- ◯ Yes
- ◯ No

4. How familiar are you with ship customization interfaces?

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Familiar

Version B

Your goal for this UI layout version will be to complete the following tasks in the prototype linked bel

1. Click ready to get to the ship selection screen.
2. Get to the ship customisation menu.
3. Select the **USS Zumwalt** class.
4. Select the **search radar module** with the highest **Sweep RPM**.
5. Click ready

(Optional)If you're willing, it would be nice to keep track of how long it took to complete all the tasks.

---> Link to Prototype <---

⚠️ **If the prototype is very zoomed in, click the top right sliders icon and click "Fit width and height"** ⚠️

5. How easy was it to understand what each part of the menu does? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Clear

6. How easy was it to complete the task using this menu? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Easy

7. How intuitive did this menu feel? *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Very Intuitive

8. Were there any moments you felt confused or unsure?

_____

9. Did you notice any unnecessary or missing information/features?

_____

10. How fast do you feel you completed the task? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Fast

11. *(Optional if you're recording actual time separately)* Did you feel rushed or did it flow naturally?

Mark only one oval.

	1	2	3	4	5	
Rusl	◯	◯	◯	◯	◯	Smooth

Version A

Your goal for this UI layout version will be to complete the following tasks in the prototype linked below:

1. Click ready to get to the ship selection screen.
2. Get to the ship customisation menu.
3. Find the ship with the most health.
4. Select the cannon module which has the best offensive capabilities based on the diagram.
5. Click ready

(Optional)If you're willing, it would be nice to keep track of how long it took to complete all the tasks.

---> Link to Prototype <---

⚠️ If the prototype is very zoomed in, click the top right sliders icon and click "Fit width and height" ⚠️

12. How easy was it to understand what each part of the menu does? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Clear

13. How easy was it to complete the task using this menu? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Easy

14. How intuitive did this menu feel? *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Very Intuitive

15. Were there any moments you felt confused or unsure?

16. Did you notice any unnecessary or missing information/features?

17. How fast do you feel you completed the task? *

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very Fast

18. *(Optional if you're recording actual time separately)* Did you feel rushed or did it flow naturally?

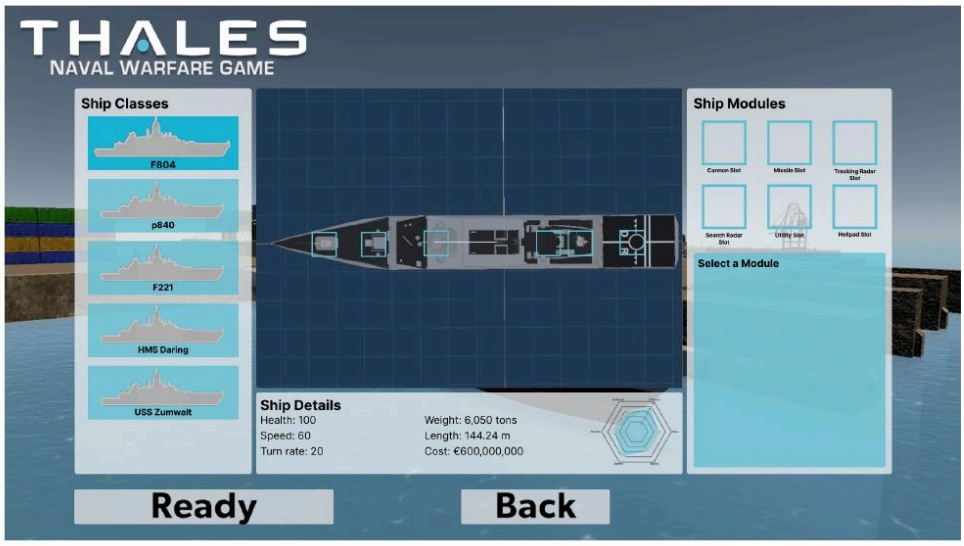
Mark only one oval.

	1	2	3	4	5	
Rusl	◯	◯	◯	◯	◯	Smooth

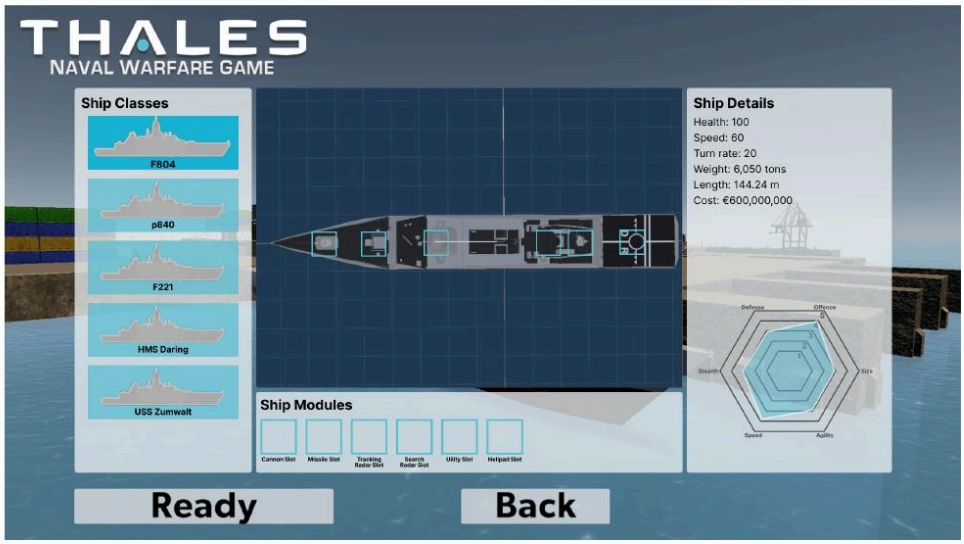
Final Questions

These are the final questions of of the test! Here are pictures of the versions in case you don't remember which is which:

Version B



Version A



19. Which version was easier to understand? *

Mark only one oval.

- A
- B

20. Which version was faster to use? *

Mark only one oval.

- A
- B

21. Which version felt more intuitive? *

Mark only one oval.

- A
- B

22. Which version did you prefer overall? *

Mark only one oval.

- A
- B

23. Please explain why you preferred that version.

15.2. Appendix B: Questionnaire Results

15.2.1. Iteration 1 playtest Results:

Graduation Assignment Playtest

3 responses

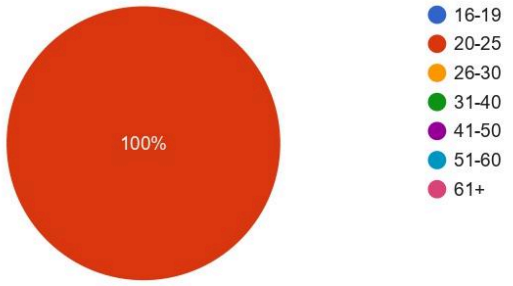
Publish analytics

Pre-game questions

What is your age?

Copy

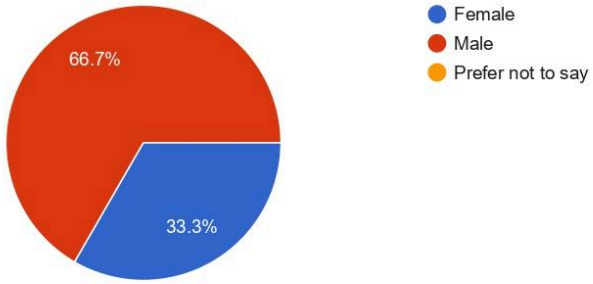
3 responses



What is your gender?

Copy

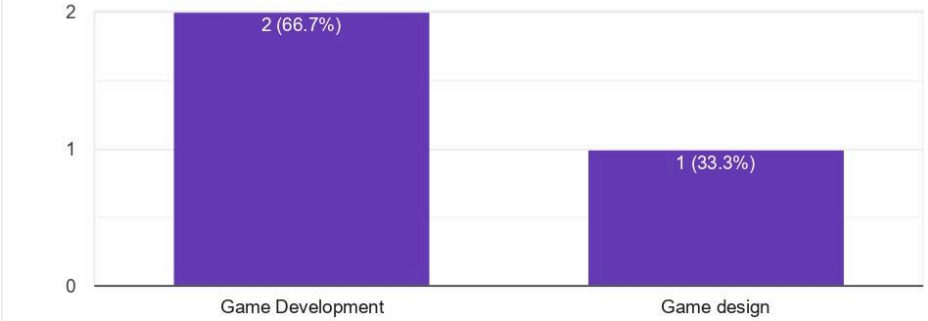
3 responses



What field are you studying

Copy

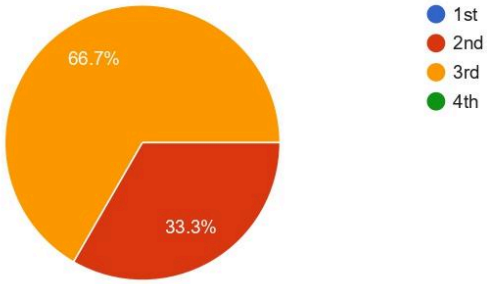
3 responses



What year are you in?

Copy

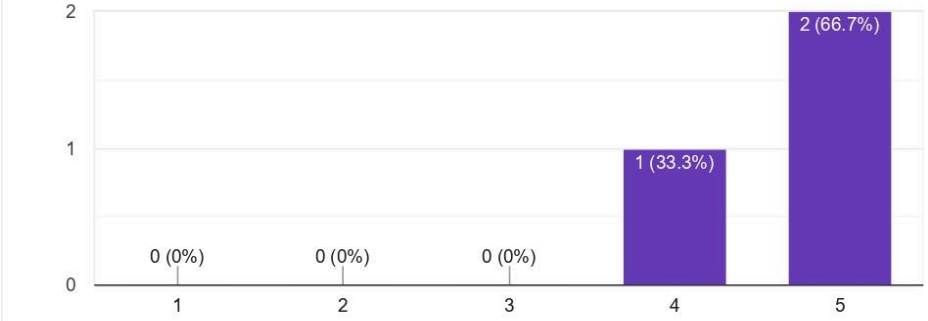
3 responses



How familiar are you with games

Copy

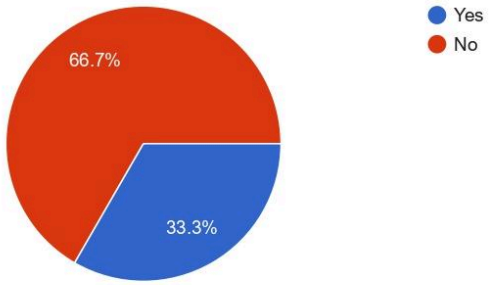
3 responses



Do you have an existing interest or occupation that relates to warfare(history, realistic games, simulators, job, etc.)?

Copy

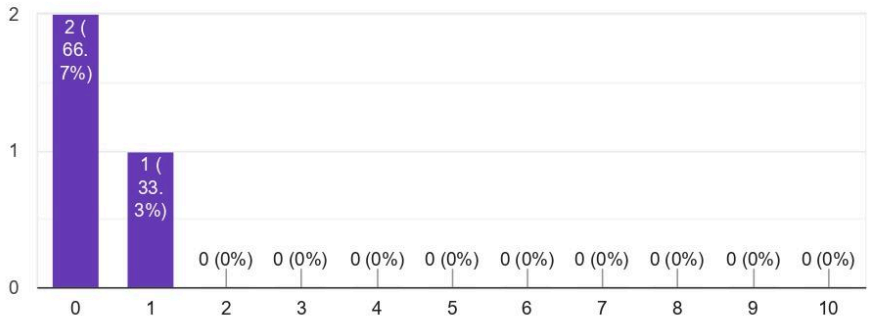
3 responses



How would you rate your level of understanding of modern naval warfare?

Copy

3 responses



Please explain your answer to the previous question.

2 responses

I don't know a lot about modern naval warfare. The only thing I know is the naval base in Delft

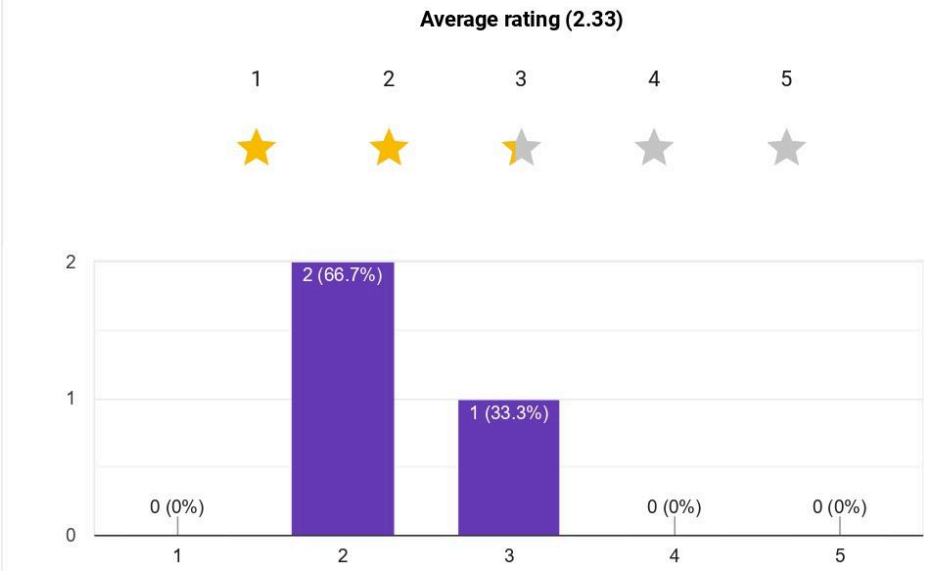
Bro im just a guy

Post-Game questions

How would you rate the gameplay experience?

Copy

3 responses



How would you rate the experience of playing the game at a career fair? Copy

3 responses

Please briefly describe how you would approach playing the game differently if you played again.

3 responses

I only played the tutorial, but I would be more focused on the objectives

Wouldnt ngl

I only played the tutorial, which didn't showcase much of interest.

What are new things you've learned about modern naval warfare?

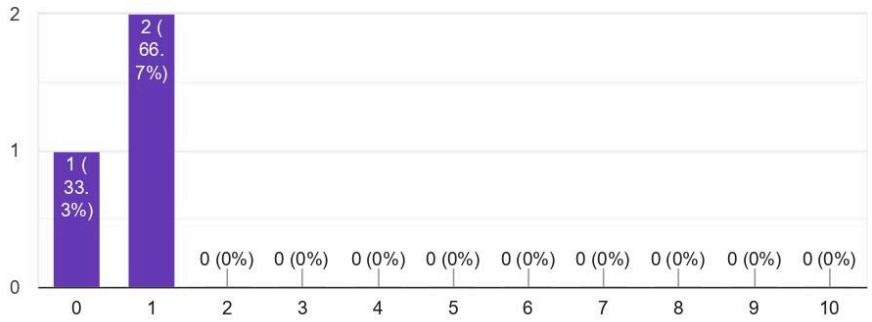
2 responses

Nothing

How would you rate your level of understanding of modern naval warfare after having played the game?

Copy

3 responses



How did playing the game affect your understanding of naval warfare?

2 responses

I didn't know anything about radar and radar icons

I learned nothing, gramted I onyl llayed the tutorial

If you have any questions or things you think the game should explain more regarding the topic of naval warfare, please write them here.

1 response

Overall more clear communication

15.2.2. Iteration 2 Test Results Version A/B:

Thales Graduation Assignment Test

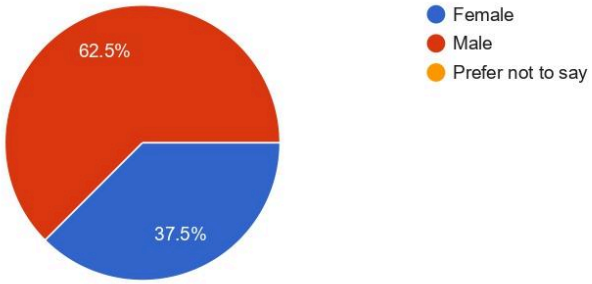
8 responses

Publish analytics

What is your gender?

Copy

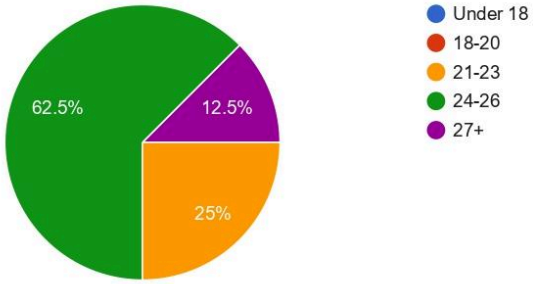
8 responses



What is your age?

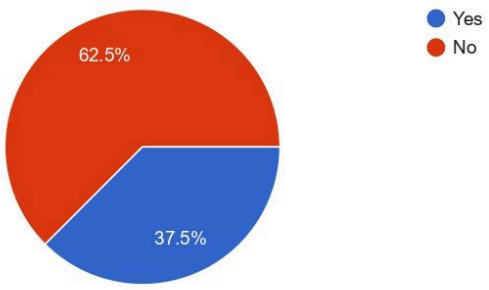
Copy

8 responses



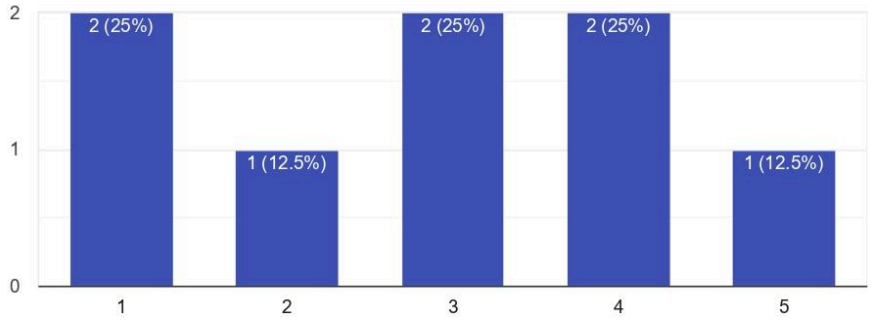
Have you ever played a naval warfare or ship simulation game before? Copy

8 responses



How familiar are you with ship customization interfaces? Copy

8 responses

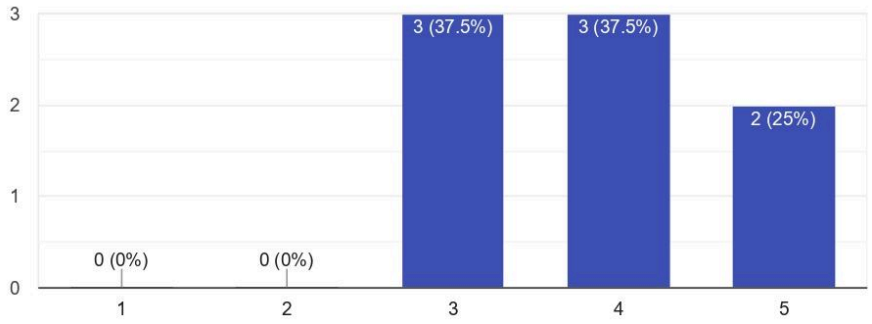


Version A

How easy was it to understand what each part of the menu does?

Copy

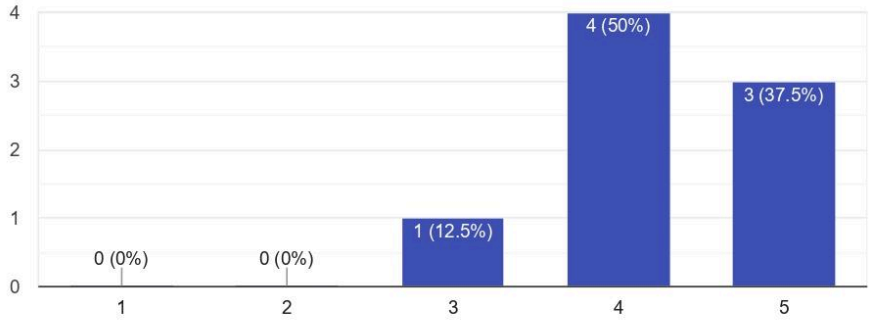
8 responses



How easy was it to complete the task using this menu?

Copy

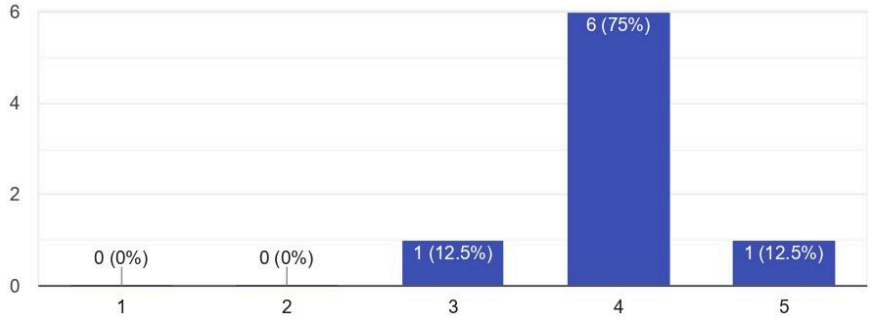
8 responses



How intuitive did this menu feel?

Copy

8 responses



Were there any moments you felt confused or unsure?

5 responses

There were ships to choose from but I was not supposed to choose any of them, just move to the customization part and then choose. This was confusing due to the instructions for this excersise.

The rearch slot is in different places, for differnet ships. Some consistency would be nice. For example, a fixed layout for all the possible attachments, and if certain ships are not compatible with an attachment, it could be disabled (greyed out)

What to click and when

yes, after clicking ready it seemed like you could already select the zumwalt and then customize it, but instead you had to select it after selecting customize, spent a few seconds trying to select the radar before I realized I had to select the zumwalt first

Why is there a ships list and then when customizing you get different ship classes?

Did you notice any unnecessary or missing information/features?

4 responses

No, just on the phone missing ship part specifications. Also, I could not press on the incorrect search radar module, only the correct one was clickable.

I am not very familiar with ship attachemnts but I bet there are some pieces of information that is more important than others. Idk this could be the range or something else. Those more important informations could have their own place, a place more accesible than hovering over each item to see their info box. To make it better, that information could be represented by an icon. or a bar or anything visual.

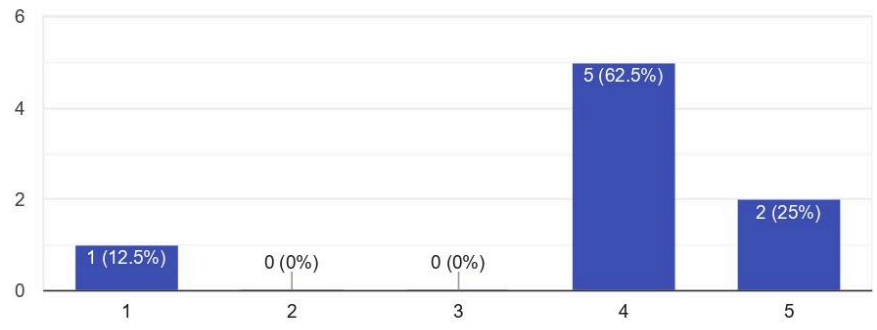
not really

If I'm new to this game I don't actually know what rpm means

How fast do you feel you completed the task?

Copy

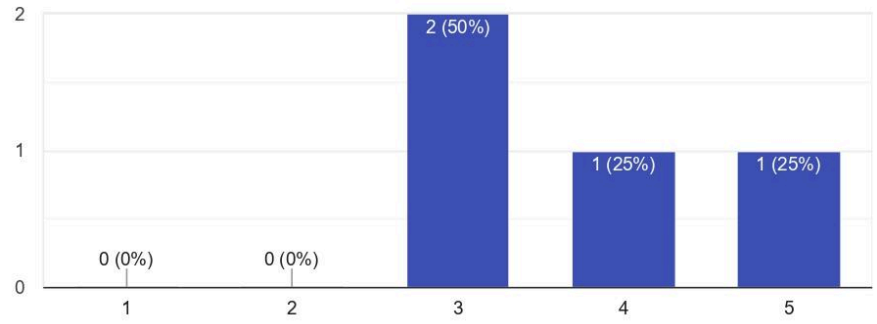
8 responses



(Optional if you're recording actual time separately) Did you feel rushed or did it flow naturally?

Copy

4 responses

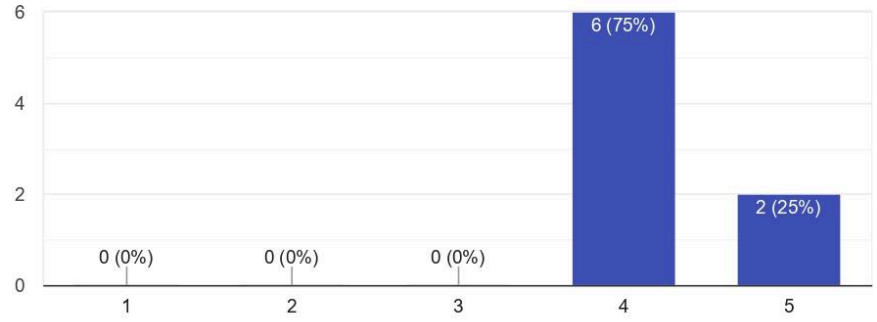


Version B

How easy was it to understand what each part of the menu does?

Copy

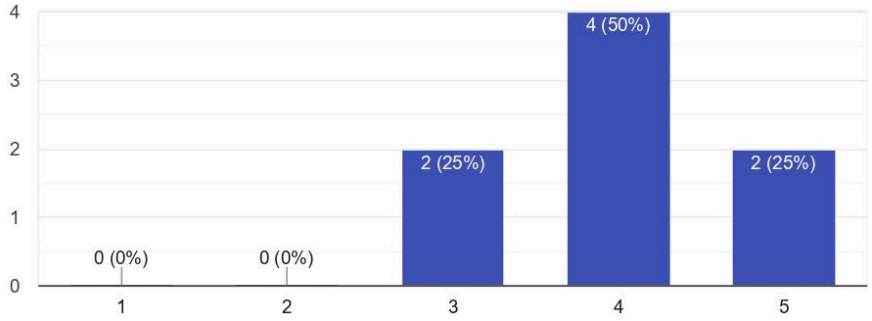
8 responses



How easy was it to complete the task using this menu?

Copy

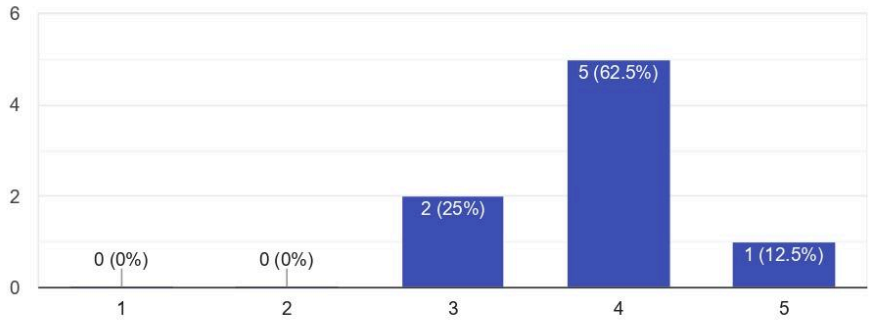
8 responses



How intuitive did this menu feel?

Copy

8 responses



Were there any moments you felt confused or unsure?

4 responses

I could not see info about ships element and could not press on them thus not being able to finalize the excersise

Its very hard to see that the diagram changes.

same issue as previous

The diagram is quite small to see the information

Did you notice any unnecessary or missing information/features?

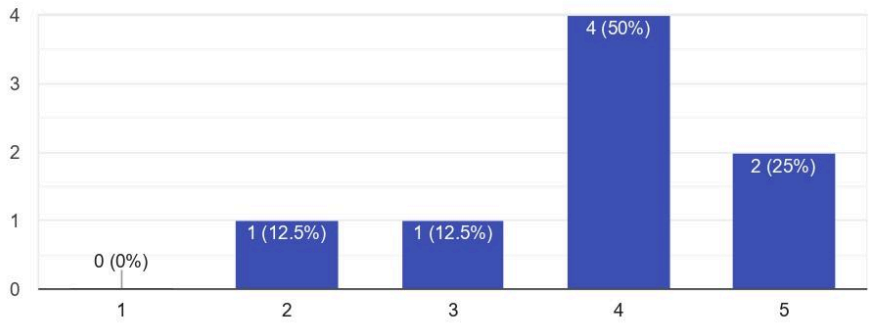
2 responses

Info about elements

That diagram, well its not very readable to begin with. And when I am trying to compare which module has most effect on my ship offense, my eyes are jumping around in two places. Checking the diagram and back to moving my cursor to the next option, and then back to the diagram. The cause and effect are quite a distance away from eachother. You could fix this by adding to your information popup the effect of choosing a module. Ex: Offence +2. if it has no effect, dont add it.

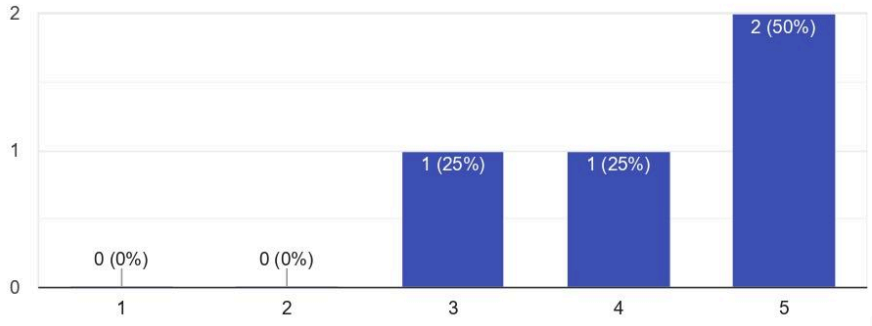
How fast do you feel you completed the task? Copy

8 responses



(Optional if you're recording actual time separately) Did you feel rushed or did it flow naturally? Copy

4 responses

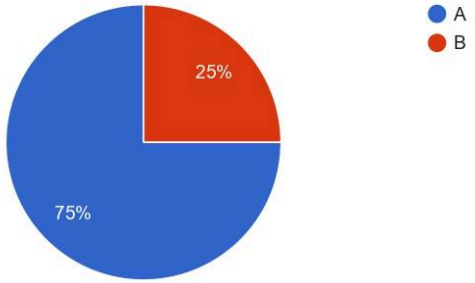


Final Questions

Which version was easier to understand?

Copy

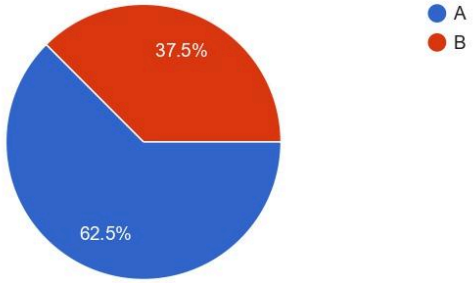
8 responses



Which version was faster to use?

Copy

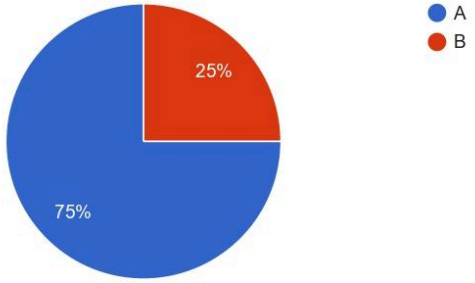
8 responses



Which version felt more intuitive?

Copy

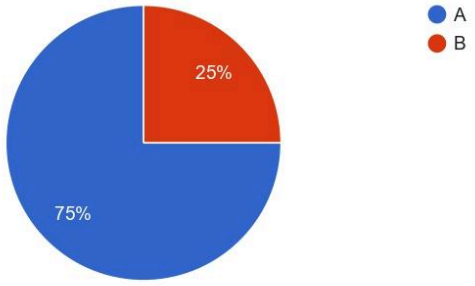
8 responses



Which version did you prefer overall?

Copy

8 responses



Please explain why you preferred that version.

7 responses

Its instantly more visible what information is for what and the ship description is not awkwardly split in half. I think the hover pop up for ship elements should pop up in the middle of the screen while the background becomes darker

I prefer is slightly more. a bit more easier to work with. But both versions could be better.

I preferred looking at the graph instead of text stats

There is lots of room to display stats

Modules don't feel crammed at the bottom

seemed more logical to have the parts at the bottom, reminded me of stellaris

The details were a bit better readable (though it could also be that I prefer it because I've seen it first)

15.2.3. Iteration 2 Test Results Version B/A:

Thales Graduation Assignment Test

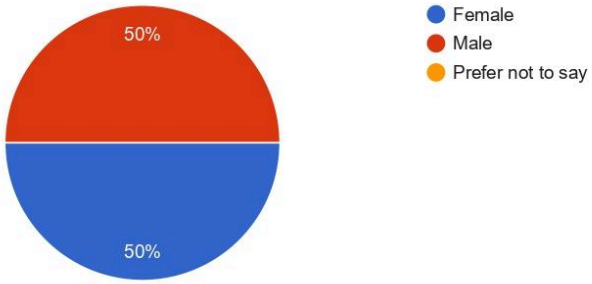
10 responses

Publish analytics

What is your gender?

Copy

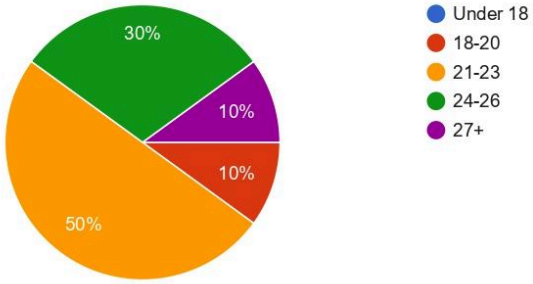
10 responses



What is your age?

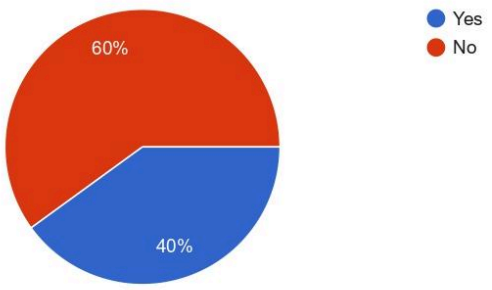
Copy

10 responses



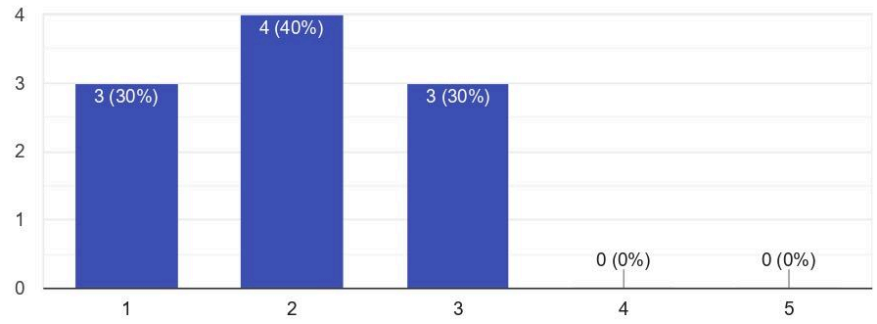
Have you ever played a naval warfare or ship simulation game before? Copy

10 responses



How familiar are you with ship customization interfaces? Copy

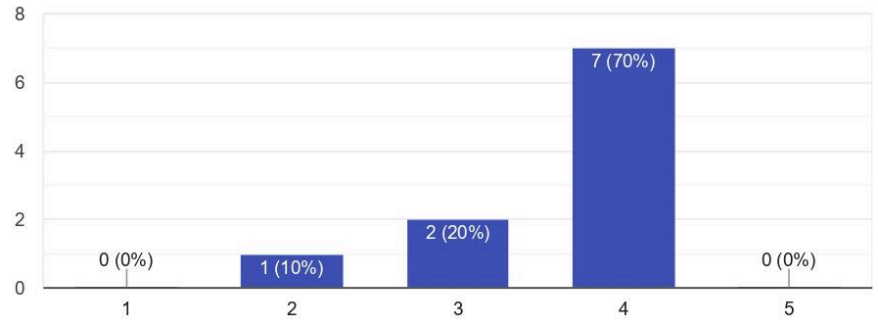
10 responses



Version B

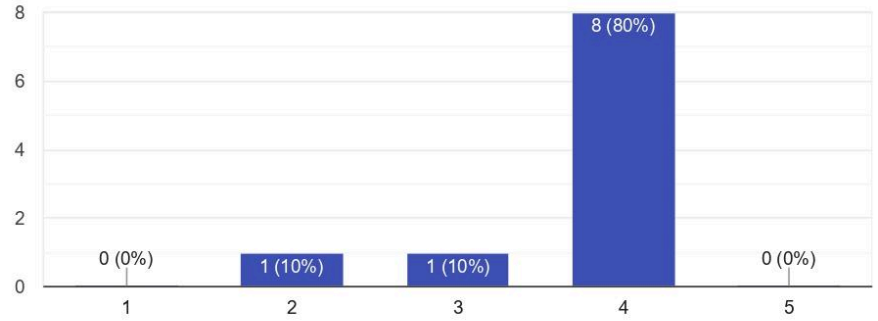
How easy was it to understand what each part of the menu does? Copy

10 responses



How easy was it to complete the task using this menu? Copy

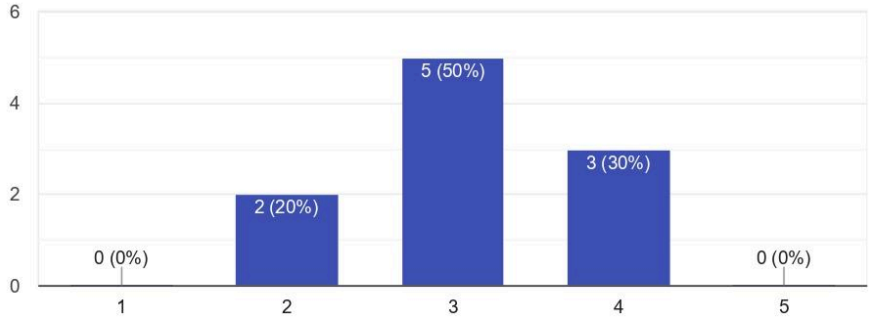
10 responses



How intuitive did this menu feel?

Copy

10 responses



Were there any moments you felt confused or unsure?

9 responses

Just at the beginning since I have no idea about war ships

no

Don't know when i completed

The last step

After clicking ready, there was a list where it looked like I could select a ship, but then I had to click customize where I could once again select from ships.

Yes, I thought that I can re-select another component after I click the one that available

I was unsure why there was a list of ships in the starting menu and so I tried to look for the correct ship there. It also wasnt so clear which ship I had selected

When the list of ships appeared and you have to click on customize ship in order to select the ship

Don't know what to click

Did you notice any unnecessary or missing information/features?

8 responses

No

no

Na

No

When selecting a ship class, I can see a profile of the ship from the side and the top but there was no image of how the ship looks in general.

A re-select feature or cancel selection. For the information part, I believe it's already sufficient.

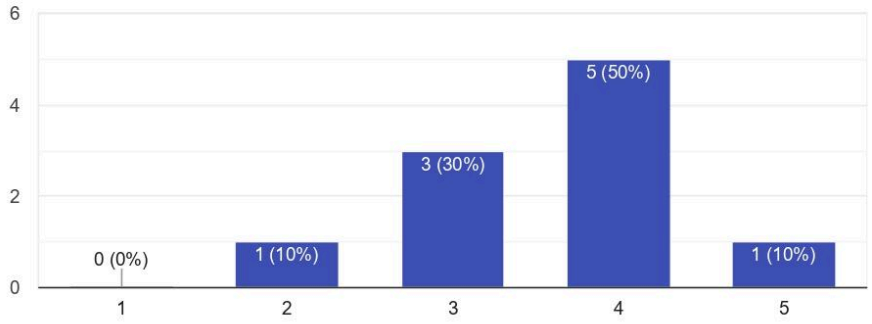
Make it clearer which ship has been selected. I think just a darker shade of blue is not enough

Like the square is a bit hard to understand and unreadable

How fast do you feel you completed the task?

Copy

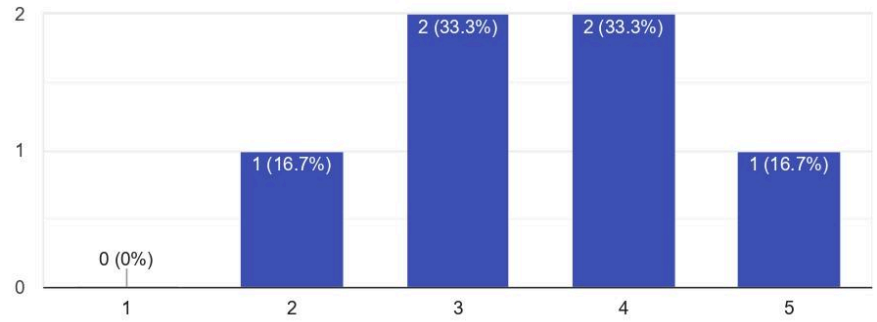
10 responses



(Optional if you're recording actual time separately) Did you feel rushed or did it flow naturally?

Copy

6 responses

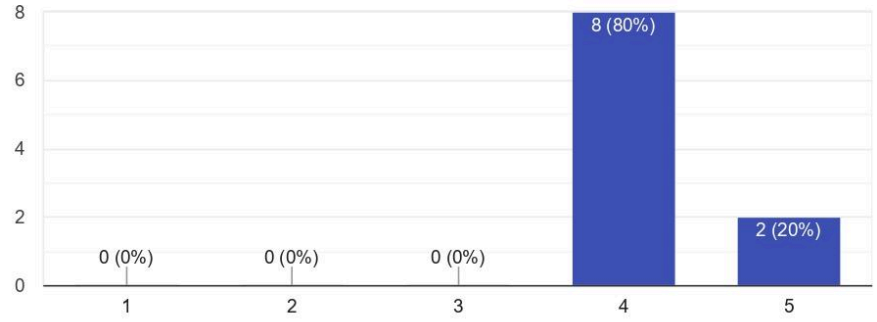


Version A

How easy was it to understand what each part of the menu does?

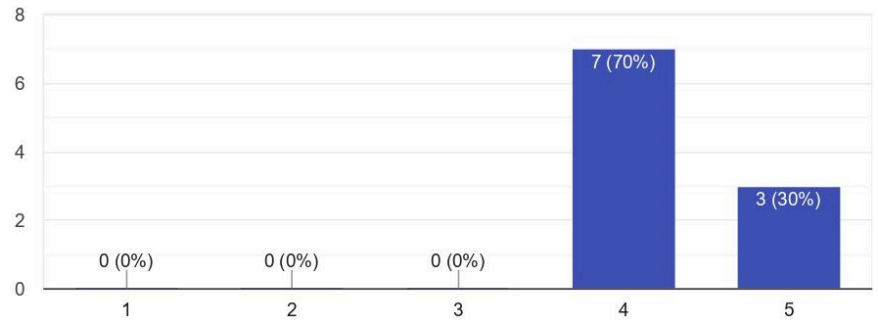
Copy

10 responses



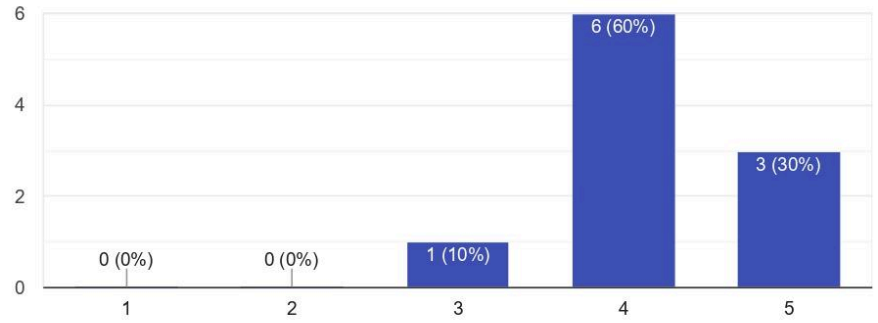
How easy was it to complete the task using this menu? Copy

10 responses



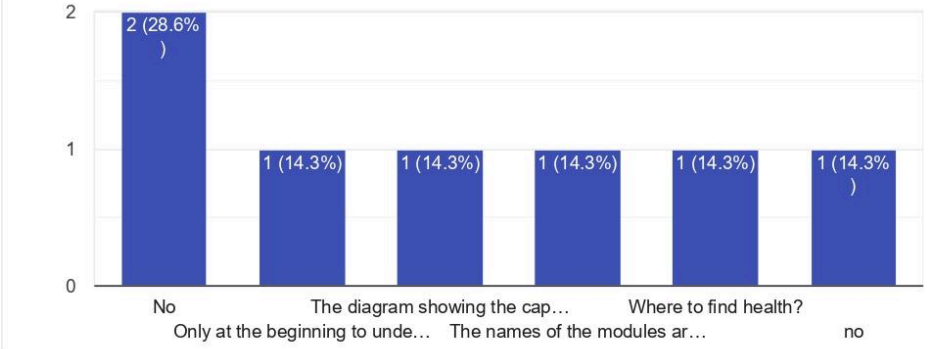
How intuitive did this menu feel? Copy

10 responses



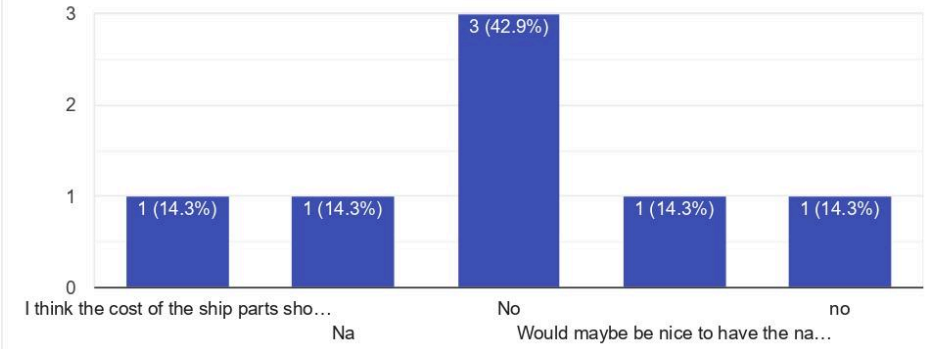
Were there any moments you felt confused or unsure? Copy

7 responses



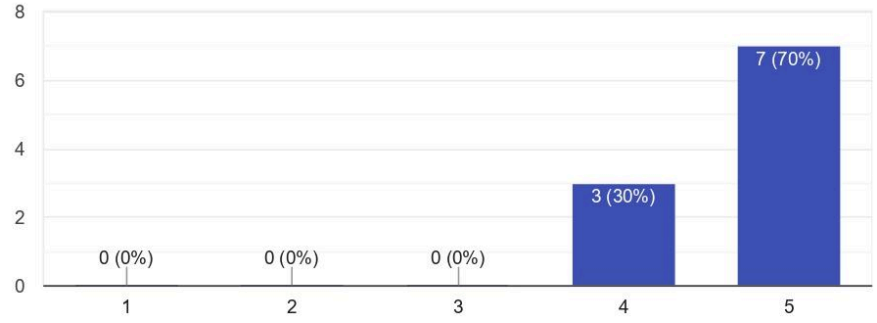
Did you notice any unnecessary or missing information/features? Copy

7 responses



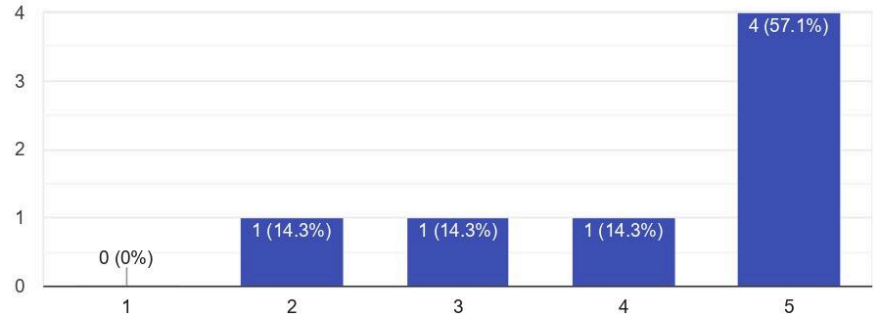
How fast do you feel you completed the task? Copy

10 responses



(Optional if you're recording actual time separately) Did you feel rushed or did it flow naturally? Copy

7 responses

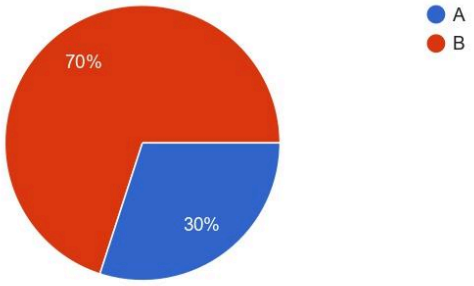


Final Questions

Which version was easier to understand?

Copy

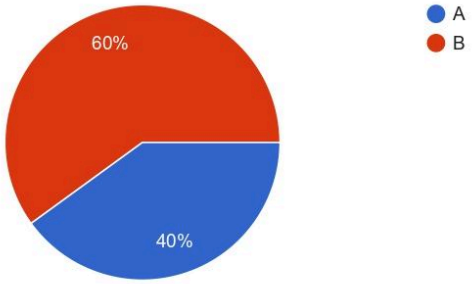
10 responses



Which version was faster to use?

Copy

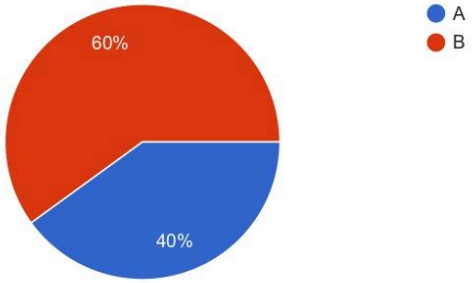
10 responses



Which version felt more intuitive?

Copy

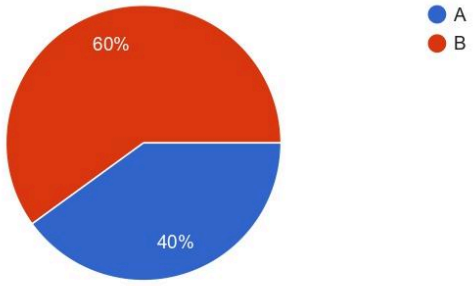
10 responses



Which version did you prefer overall?

Copy

10 responses



Please explain why you preferred that version.

7 responses

It makes more sense that the modules are in the middle and the info on the right

the ship modules being at the bottom makes much more sense to me and the stats info graph being so big makes it very easy to complete the task so i prefer it

If you get used to it, it should be faster and easier in the clear with the dynamic graph.

Since I have tried the prototype for the first version, I got more familiar and completed the second version with more ease

was more easy to use for me and the information is more compact

The strengths chart is too small in A, I didnt even notice it in the first task

The graph was much bigger in B and also there is wasted space in A