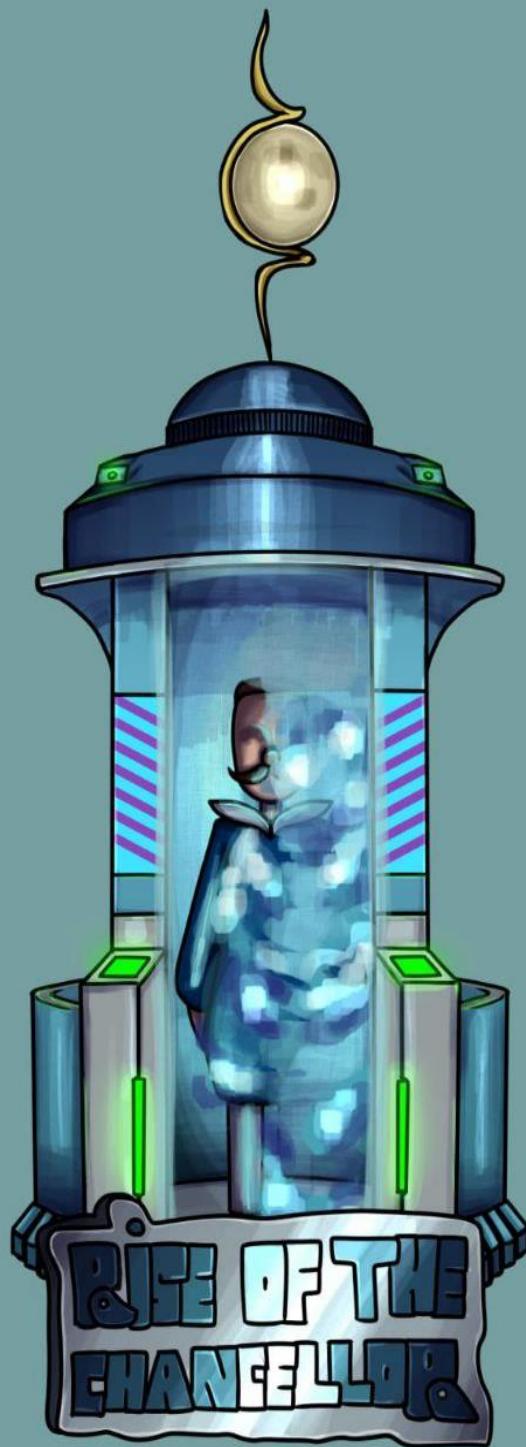


Lagoon Games – A.Y. 2024-2025



**Game Design Document**

## Lagoon Games – A.Y. 2024-2025



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Credit to Viola Sarti for the game and studio logos.



## Table of contents

|   |    |
|---|----|
| Game Design Document .....                | 1  |
| Lagoon Games – A.Y. 2024-2025 .....       | 2  |
| Table of contents .....                   | 4  |
| 1. Design History .....                   | 8  |
| 2. Vision Statement .....                 | 9  |
| 2.1 Game logline.....                     | 9  |
| 2.2 Look and feel .....                   | 9  |
| 2.3 Gameplay Synopsis.....                | 9  |
| 3. Audience, Platform, and Marketing..... | 11 |
| 3.1 Target Audience .....                 | 11 |
| 3.1.1 Hardcore gamers .....               | 11 |
| 3.1.2 Casual gamers .....                 | 11 |
| 3.1.3 Midcore gamers.....                 | 11 |
| 3.1.4: Bartle's type classification ..... | 12 |
| 3.1.2: Demographic classification.....    | 14 |
| 3.1.2.1: Age distribution.....            | 14 |
| 3.1.2.2: Gender distribution.....         | 15 |
| 3.1.3: Geographic distribution.....       | 16 |
| 3.1.4: Personae .....                     | 17 |
| 3.2 Top performers.....                   | 20 |
| 3.2.1 Payday 2 .....                      | 20 |
| 3.2.2 Among us .....                      | 20 |
| 3.2.3 The Binding of Isaac .....          | 20 |
| 3.2.4 Fall guys .....                     | 21 |
| 3.3 Feature comparison .....              | 21 |
| 3.4 Platforms .....                       | 22 |
| 3.5 System requirements .....             | 24 |
| 3.6 Business model.....                   | 25 |
| 3.6.1 Cosmetics .....                     | 25 |
| 3.6.2 Season system and premium pass..... | 26 |
| 4. Legal Analysis .....                   | 27 |
| 4.1 Name .....                            | 27 |
| 4.2 Licences .....                        | 27 |
| 4.3 PEGI and ESRB classification.....     | 27 |

|  |    |
|--|----|
| 5. Gameplay .....                        | 28 |
| 5.1 Overview.....                        | 28 |
| 5.2 Gameplay description .....           | 28 |
| 5.3 Fundamental gameplay elements.....   | 29 |
| 5.3.1 Match structure .....              | 29 |
| 5.3.2 View .....                         | 29 |
| 5.3.2.1 Camera .....                     | 29 |
| 5.3.2.2 Field of view .....              | 29 |
| 5.3.2.3 Mini-map.....                    | 30 |
| 5.3.3 Player interaction .....           | 30 |
| 5.3.4 Badge fragments.....               | 31 |
| 5.3.5 Buffs and de-buffs.....            | 31 |
| 5.3.6 Traps .....                        | 33 |
| 5.3.7 Player's powerups.....             | 34 |
| 5.3.8 AI Chancellor's effects .....      | 35 |
| 5.3.9 Sentinels and cameras .....        | 35 |
| 5.3.10 Sound effects .....               | 36 |
| 5.3.10.1 Spatialized sound effects ..... | 36 |
| 5.3.10.2 Interface sound effects .....   | 37 |
| 5.4 Controls .....                       | 38 |
| 5.4.1 Interfaces .....                   | 38 |
| 5.4.1.1 Main menu .....                  | 38 |
| 5.4.1.1.1 Login .....                    | 38 |
| 5.4.1.1.2 Main Menu .....                | 38 |
| 5.4.1.1.3 Matches .....                  | 39 |
| 5.4.1.1.4 Leaderboard .....              | 40 |
| 5.4.1.1.5 Character .....                | 41 |
| 5.4.1.1.6 Friends .....                  | 42 |
| 5.4.1.2 Round .....                      | 43 |
| 5.4.1.2.1 In-Game .....                  | 43 |
| 5.4.1.2.2 Pause menu .....               | 43 |
| 5.4.2 Rules and procedures .....         | 44 |
| 5.4.2.1 Rules.....                       | 44 |
| 5.4.4.2 Procedures .....                 | 44 |
| 5.4.3 Winning conditions .....           | 45 |

|                                      |    |
|--------------------------------------|----|
| mat5.4.4 Scoring conditions .....    | 45 |
| 5.4.5 Interaction system .....       | 47 |
| 5.4.5.1 Menu .....                   | 47 |
| 5.4.5.2 Match .....                  | 47 |
| 5.5 Modes.....                       | 47 |
| 5.5.1 Ranked .....                   | 48 |
| 5.5.2 Casual.....                    | 48 |
| 5.5.3 Event .....                    | 48 |
| 5.6 Other features .....             | 50 |
| 5.6.1 Leaderboard.....               | 50 |
| 5.6.1.1 Ranking systems.....         | 50 |
| 5.6.1.2 Teams .....                  | 52 |
| 5.6.2 Character personalization..... | 53 |
| 5.6.3 Friendship system.....         | 54 |
| 5.7 Rounds.....                      | 54 |
| 5.8 Flowchart.....                   | 58 |
| 5.8.1 Main menu.....                 | 58 |
| 5.8.2 Pause menu .....               | 59 |
| 6. Characters .....                  | 60 |
| 6.1 PC.....                          | 60 |
| 6.1.1 Mangiagalli.....               | 60 |
| 6.1.2 Golgi.....                     | 61 |
| 6.2 NPC .....                        | 61 |
| 6.2.1 Rogue AI chancellor .....      | 61 |
| 6.2.1 Sentinel .....                 | 62 |
| 7. Story .....                       | 63 |
| 7.1 Synopsis .....                   | 63 |
| 7.2 Complete story .....             | 63 |
| 7.3 Backstory .....                  | 63 |
| 7.4 Narrative devices.....           | 63 |
| 7.5 Setting.....                     | 64 |
| 8. Media List.....                   | 65 |
| 8.1 Characters.....                  | 65 |
| 8.1.1 Models .....                   | 65 |
| 8.1.2 Animation .....                | 65 |

|  |    |
|--|----|
| 8.1.2.1 Mangiagalli and Golgi.....                 | 65 |
| 8.1.2.2 Sentinel .....                             | 65 |
| 8.1.3 Textures .....                               | 65 |
| 8.2 Environment .....                              | 65 |
| 8.2.1 Models .....                                 | 65 |
| 8.2.2 Animation .....                              | 66 |
| 8.2.2.1 Security camera .....                      | 66 |
| 8.2.2.2 Traps.....                                 | 66 |
| 8.2.2.3 Buffs, de-buffs, and badge fragments ..... | 66 |
| 8.2.2.4 Doors .....                                | 66 |
| 8.2.2.5 End round teleport.....                    | 66 |
| 8.2.3 Textures .....                               | 66 |
| 8.3 Interface assets .....                         | 66 |
| 8.3.1 Menus .....                                  | 66 |
| 8.3.2 In-game UI .....                             | 67 |
| 8.3.3 Fonts .....                                  | 67 |
| 8.4 Music and SFX.....                             | 67 |
| 8.4.1 Feedback sound effects .....                 | 67 |
| 8.4.2 Spatialized sound effects .....              | 67 |
| 9. Storyboard.....                                 | 69 |
| 9.1 Story prologue .....                           | 69 |
| 9.2 Main menu animation .....                      | 75 |
| 10. Game prototype .....                           | 79 |

# 1. Design History

| Date (DD/MM/YYYY) | By                         | Short description                           |
|-------------------|----------------------------|---|
| 29/05/2024        | All                        | Final revision                              |
| 20/05/2024        | Christian P.               | Section 5.1, 5.2 Overview and description   |
| 20/05/2024        | Matteo M.                  | Section 5.5 Modes (matchmaking system)      |
| 20/05/2024        | All                        | Section 5.3.5 Buffs and de-buffs            |
| 19/05/2024        | Christian P.               | Section 3.1.4 Personae (Yan)                |
| 19/05/2024        | Matteo M.                  | Section 5.7 Rounds                          |
| 19/05/2024        | Matteo M.                  | Section 3.3 Feature comparison              |
| 19/05/2024        | Matteo M.                  | Section 5.3.7 Player's powerups             |
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| 18/05/2024        | Matteo M.                  | Section 5.8 Flowchart                       |
| 18/05/2024        | Christian M.               | Section 9.1 Story prologue storyboard       |
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| 15/05/2024        | Christian P.               | Section 3.1.1 Bartle's type classification  |
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| 13/05/2024        | Matteo M.                  | Section 5.5 Game modes                      |
| 13/05/2024        | Christian P., Christian M. | Section 3.1.2 Age distribution              |
| 13/05/2024        | Christian P., Christian M. | Section 3.1 Target audience                 |
| 12/05/2024        | Matteo M.                  | Section 9.2 Main menu navigation storyboard |
| 12/05/2024        | Christian M.               | Sections 5.3.1, 5.3.3, 5.3.4, 5.3.9         |
| 11/05/2024        | Matteo M.                  | Section 9 Introduction                      |
| 11/05/2024        | Christian M.               | Section 8 formatting                        |
| 11/05/2024        | Matteo M.                  | Interaction system, Section 5.4.5           |
| 11/05/2024        | Matteo M.                  | Sound effects, Section 5.3.10               |
| 10/05/2024        | Christian M.               | Section 8                                   |
| 10/05/2024        | Christian P.               | Section 3.2 Platforms                       |
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| 07/05/2024        | Christian P.               | Sections 2, 2.1, 2.2                        |
| 07/05/2024        | Matteo M.                  | Section 3.6 Business model                  |
| 07/05/2024        | Matteo M.                  | Section 4 Legal Analysis                    |
| 07/05/2024        | Matteo M.                  | GDD structure                               |

## 2. Vision Statement

Rise of the Chancellor is a 3D, top-down, stealth, online multiplayer game where two players compete against each other in 1vs1 matches composed of 3, 5, or 7 rounds.

The game is set in 2924, the millennial of the University of Milan, when the two nobles' families Mangiagalli and Golgi bring their eminent ancestors back to life with the most modern technologies. The former seeks to restore order to the University, while the latter aims to exploit the instability and dismantle the University once and for all.

Each player embodies the character of either Mangiagalli or Golgi willing to compete within the University, by now controlled by an artificial intelligence that will hinder them.

The players must unlock the teleport to the next round before the opponent, locating all the required badge fragments scattered all over the map.

It is not an easy job, because each player must navigate with a limited cone of vision and a mini-map only showcasing rooms that they have already discovered. Sounds and noises are fundamental to get oriented while acting in the shadows and carefully evading guards, traps, and cameras which could expose their location to the opponent or cause them to lose their progress. The two challengers can exploit various buffs, and de-buffs and engage in battles by attacking from behind or strategically placing traps on the map to obstruct each other and steal the opponent's badge fragments needed to cover the path of glory.

The game is also structured into seasons, granting fresh new content every two months, such as new maps, special event modes, buffs, de-buffs, and traps, and even more rewards such as in-game currency and cosmetics.

### 2.1 Game logline

Fight your most ancient enemy and become the next University chancellor... to save it or destroy it from within?

### 2.2 Look and feel

The game conveys a dark and gloomy atmosphere, and the limited vision actively contributes to a feeling of uncertainty. Most of the view is blurry and the only things that can be trusted are the ones in front of the observer. Sound has the utmost importance in the game, as it can be used as a leading guide through the darkness of the university's floors as well as a warning alarm for dangers around the corner.

Future lives together with the past since the characters are directly from 1000 years before, in a clean and futuristic environment expressed by a highly technological university, which offers robot sentinels, cameras, and traps controlled by a modern AI chancellor. Many elements are indeed a mixture of science and magic, conveying a world where everything is possible as opposed to the main dark atmosphere.

### 2.3 Gameplay Synopsis

A player can invite a friend or use the matchmaking system to find an opponent. Players can choose to play 3, 5, or 7 rounds. During registration, players are assigned to one of two factions,

contributing to their team's score in ranked matches and only battling the opposing team's players.

Before the match, players are given a character based on their team for ranked matches or randomly for casual. Each round starts with players on opposite sides of a university floor, searching for badge fragments to unlock the next level. Victory in a round is achieved by finding all the required fragments, and the match ends when one player wins the majority of rounds.

Players have a top-down view restricted to their line of sight and must avoid traps, guards, and cameras. A mini-map shows explored rooms and hints at the opponent's location. Players can use stealth or offensive tactics to win, employing buffs, de-buffs, and traps scattered across the floor to gain an advantage.

Everyone can choose from a multitude of approaches to steal the badge fragments and win: a stealth and strategic approach is safer but needs patience and planning, while a direct and offensive approach is profitable but also dangerous. Players can also interfere directly by killing each other, either stealthily from behind or through a quick key sequence duel when facing each other. Also, a common enemy is always observing, the AI chancellor periodically intervenes to hinder both players.

Players are alone and can trust no one but themselves, relying only on what they see and hear or their traps and power-ups.

## 3. Audience, Platform, and Marketing

### 3.1 Target Audience

Players can be divided into three categories: hardcore, midcore, and casual. We analyze each of these in the following three subsections.

#### 3.1.1 Hardcore gamers

We consider hardcore gamers as our main target. They invest a lot of time in games to learn and perfect their skills, so they seek complex and deep mechanics. Ranked matches allow them to engage and invest their time to improve their skills by facing players of their level and exploiting the diversity of approaches to achieve victory: they can enjoy discovering which type of gameplay best fits their play style and current needs. The great quantity of buffs, de-buffs, and traps makes the game even more exciting and enjoyable for a hardcore gamer, granting the possibility to discover their best and most powerful combinations. As confirmation of their investment, cosmetic rewards are available, as well as power-ups which add a level of complexity and dynamism to the matches.

#### 3.1.2 Casual gamers

They have a slower pace of play and invest little time in playing or improving. They can appreciate casual matches that are available to all players and do not require a high level of skill or commitment. This allows them not to worry about ranking, team score, or leaderboards, simply playing for fun and choosing the approach that suits them best. They may not fully appreciate reward systems that require a greater time investment.

#### 3.1.3 Midcore gamers

They have various interests and play in a diversified manner. They may initially appreciate the immediacy of casual matches but may soon find themselves disappointed by the lower level of commitment required. At the same time, they may not fully enjoy ranked matches, overwhelmed by the excessive time investment required.

### 3.1.4: Bartle's type classification



Bartle's Player Types for Gamification ([interaction-design.org](http://interaction-design.org))

Killers are our main target for the game, but they are also the smallest percentage among all players. The game offers mechanics for other types of players, though, which guarantees a broader audience. Here's an analysis for each Bartle's type of player.

#### Killer 5/5:

The killer player represents our primary target. The game structure forces a confrontation between the two players to retrieve the badge fragments necessary to win. In this interaction, the killer's soul awakens to demonstrate their superiority over the opponent. This type of player can appreciate the variety of approaches that can be undertaken, exploiting the ability to kill the opponent in various ways: stealthily from behind, head-on through a mini-game, or by strategically placing traps. The large number of traps, buffs, and de-buffs further extend these possibilities, leading the killer to discover and learn new methods to kill and win against the opponent.

The leaderboard showcases dominance, as do the cosmetic items that highlight and directly display superiority even during the match; the more kills and wins, the more items to flaunt.

#### Achievers 4/5:

This type of player is also suitable for the game. They can appreciate the presence of the leaderboard to track their progress and levels. The cosmetic items and power-ups that can be unlocked and obtained with experience are great rewards and a good way to demonstrate the achievement of various game objectives, as well as an important incentive to continue playing and delving deeper to unlock as much content as possible.

#### Explorer 3/5:

This type of player can certainly get satisfaction from the large number of items in the game: each buff, de-buff, and trap has a unique effect that must be discovered through gameplay, and they can also be combined to achieve additional effects. This aspect of discovery is fundamental to the gaming experience of an explorer, and it is further enhanced by the exploration of the playable

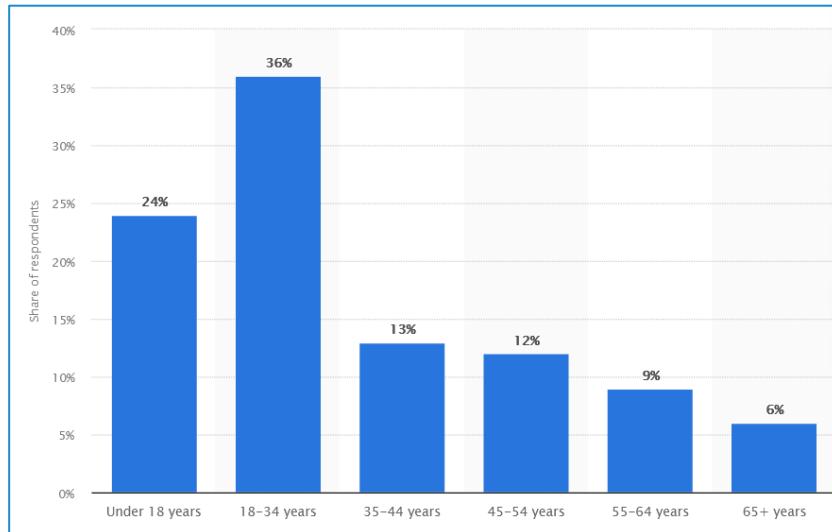
maps, which mimic the real university buildings, and the arrangement of the items contained within, which also grants variety to the environments.

**Socializer 1/5:**

By the nature of the game, players are driven to battle with each other, and this fundamental aspect might not be appealing to a socializer type player, who, on the contrary, seeks more meaningful social interactions. The presence of teams does not significantly improve the situation, as matches are still played with members of the opposing team with the goal of winning for one's own team. However, they might appreciate the friendship system and the potential future implementation of a local multiplayer game mode.

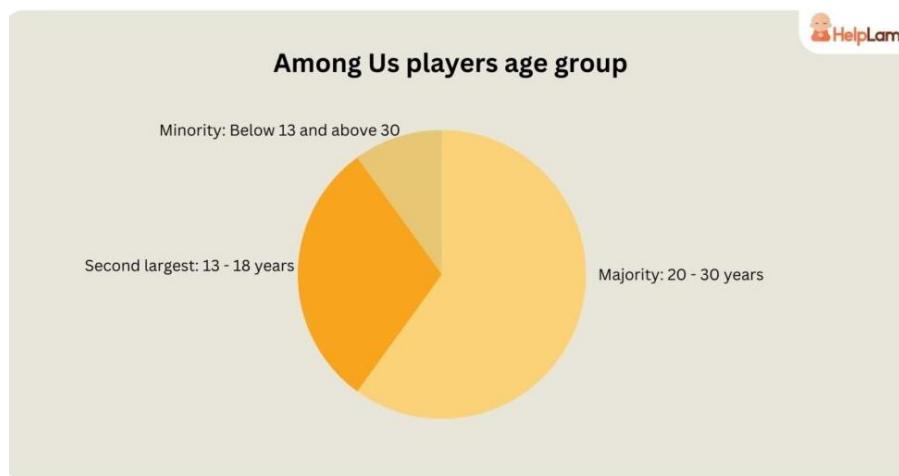
### 3.1.2: Demographic classification

#### 3.1.2.1: Age distribution



*Distribution of video gamers in the United States in 2022 (statista.com)*

Observing this infographic, it appears reasonable to target the first two age groups (0-17 and 18-34) which are 60% of gamers and are compatible with the themes treated in the game. The lack of excessive violence and the presence of casual make the game enjoyable for teenagers and kids, while the gloomy atmosphere, ranked matches, and the depth in the gameplay mechanics make the game suitable for young adults and adults. People over 35 years could seek more serious content and the experience could not be compelling for them. We can consider the game Among Us as a comparison model (see [3.4 Top Performers](#)), which shares various aspects and has the following age distribution:

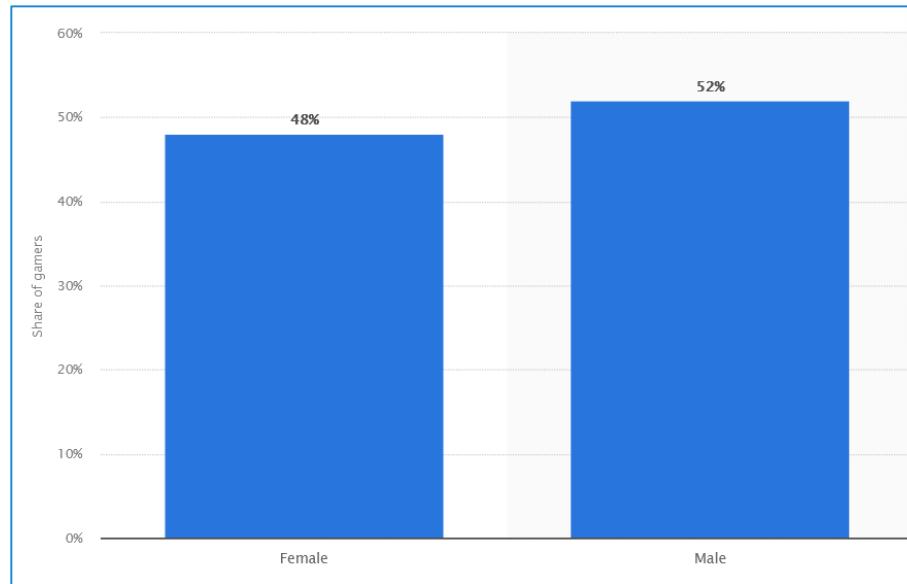


*Among Us players age group (helplama.com)*

Thus, all this considered, we expect the following age distribution:

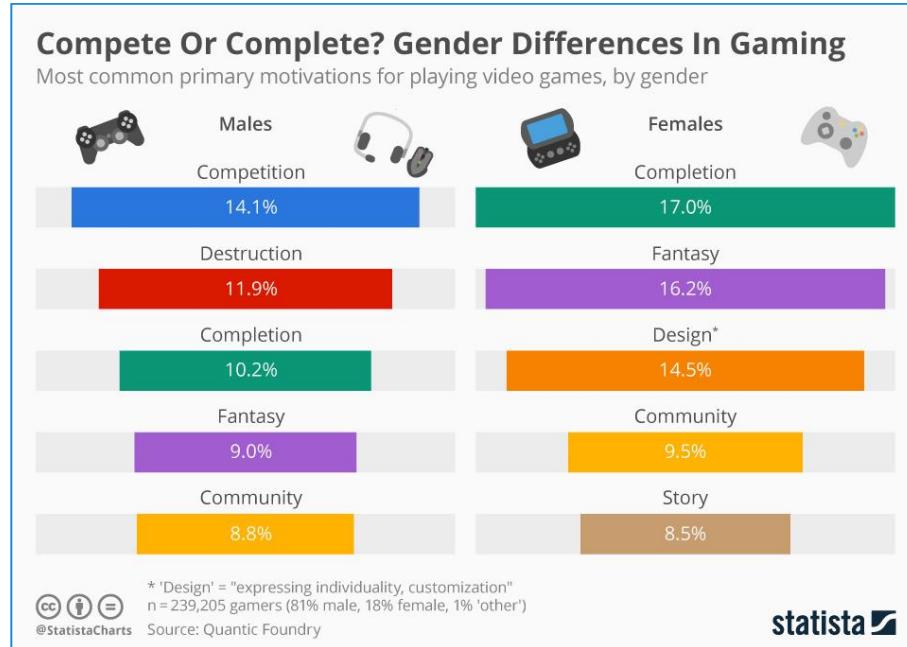
| Age          | 0-17 | 18-34 | 35-49 | 50+ |
|--------------|------|-------|-------|-----|
| Distribution | 45%  | 40%   | 15%   | 5%  |

### 3.1.2.2: Gender distribution



*Distribution of video game users in the United States in 2023, by gender (statista.com)*

According to the presented data, the male and female populations are almost equivalent, but differences in preferences regarding play style must also be considered.



*Gender Differences In Gaming (statista.com)*

According to the above chart, which analyses the motivation driving players to play, males prefer competition and destruction. Thus, males fully embrace the game style offered, which is based on a competitive foundation and focuses on Killer Bartle's type, aligning well with the concepts of competition and destruction.

For females, completion is the top preference (while it ranks third for males). In this case, we refer to the Achiever Bartle's type, which closely aligns with the concept of completion and, as previously analyzed, can find satisfaction in our game due to the mechanisms of rewards and cosmetics that can be unlocked and obtained; cosmetics can also extend the enjoyability thanks to the customization of the characters which contributes to the design interest (third rank).

Based on this analysis, we expect the male gender to represent the majority of the audience, we anticipate a distribution of 60% male and 40% female.

### 3.1.3: Geographic distribution

We plan to launch the game worldwide, as, despite the themes and settings being closely aligned with Western culture, we are confident that we will not encounter issues.

*Worldpopulationreview* in [Banned Video Games by Country 2024](#), provides a list of banned video games for each country, along with the most common reasons.

Taking into consideration content and game mechanics for our game:

- **Content:** There are **no** themes that are often subject to content restrictions or bans, such as drugs, sexuality, organized crime, defamation, discrimination, or political references. The level of violence is also very low, not explicit, and set in an unrealistic fantasy environment and style.
- **Game mechanics:** The mechanics in the game, taken individually, are simple and suitable for players of all cultures.

Language is not an issue since there are no dialogues and the text present is limited to menus and in-game warnings, shown along clear and explanatory symbols or effects. For these reasons, we do not feel the need to translate the game into languages other than English.

### 3.1.4: Personae



# Michael

**AGE** 21

**LOCATION** BOSTON,  
MASSACHUSETTS,  
USA

**OCCUPATION** STUDENT

**PLATFORMS** PC

**FAVOURITE GAMES**

- LEAGUE OF LEGENDS
- COUNTER STRIKE GO
- CALL OF DUTY MODERN WARFARE

#### BACKGROUND

Michael is a computer science student in the city of Boston. He started playing video games avidly during his adolescence, coming into contact with Call of Duty Modern Warfare, which challenged him in its online component. As a student, he invests a lot of his time in gaming, and although he was initially frustrated by the superiority of other players, he eventually improved significantly and began dominating online matches. Some friends then introduced him to Counter Strike GO and League of Legends, with which he was able to have fun for a long time and refine his technical skills and reactions. With League of Legends, he also developed a competitive spirit with the goal of dominating ranked matches.

#### LIKES

He greatly loves the competitive aspect of games, where he can demonstrate his technical skills and ability to adapt to various unforeseen situations. He highly values the recognition of his abilities through ranking or even with cosmetics elements that warn opposing players.

#### DISLIKES

He does not appreciate superficial games with little replayability and content. He prefers to dig into the mechanics of a game that can surprise him with new content and mechanics even after dozens of hours. He prefers to interact with real people online rather than bots, as it offers a more natural interaction and a higher level of challenge. He always hopes not to encounter people who don't know how to play and lower the level of challenge, even though they give him the opportunity to fully showcase his skills.



**AGE** 32

**LOCATION** MILAN, ITALY

**OCCUPATION** GRAPHIC DESIGNER

**PLATFORMS** SWITCH, PC

**FAVOURITE GAMES**

- FALL GUYS
- THE SIMS 4
- THE BINDING OF ISAAC

# Valeria

## BACKGROUND

Valeria is a Graphic Designer who pays great attention to small details. She is also a collector and loves personalizing her room to make it as expressive of herself as possible. She got into the world of video games with The Sims 3 during high school and was impressed by the amount of customization available. Over time, she also became interested in games with a more technical base, like The Binding of Isaac, which she greatly appreciates for its vast amount of unlockable content and the curious and unpredictable item synergies. When she returns from the office, she usually relaxes with some games of Fall Guys to clear her mind and have fun.

## LIKES

She likes the aspect of customizing environments or characters that can make the gaming experience very personal. She always wants to have the opportunity to bring a bit of herself into the digital world and to represent her growth as both a character and a player, with rewards that acknowledge the time and effort invested. She also loves being surprised by items or content she discovers as she plays, allowing the gaming experience to guide her in unforeseen new details, combinations, or mechanics that she hadn't considered.

## DISLIKES

She doesn't appreciate overly complex games with mechanics that take time to learn. She prefers immediacy and the ability to take breaks from playing without feeling like she has to relearn everything when she returns to a game. Generally, she doesn't approve of games with limited content available right away, as they don't offer the experience of discovery or the opportunity to unlock rewards as a recognition of her effort.

**AGE** 16**LOCATION** HONG KONG,  
CHINA**OCCUPATION** STUDENT**PLATFORMS** MOBILE, PC**FAVOURITE  
GAMES**

- PUBG MOBILE
- MOBILE LEGENDS

# Yan

## BACKGROUND

He got into the world of gaming thanks to PUBG Mobile at the age of 12, following his friends' advice. He immediately brought his competitive spirit into the game, always seeking challenging obstacles to overcome. Often, when he's online with friends, he plays Mobile Legends, a game where he can train his team spirit while maintaining a competitive edge with his teammates, competing for leadership.

## LIKES

He greatly appreciates situations where he faces another player head-to-head in a direct confrontation, as it allows him to showcase and test his abilities. He never views losing as a negative thing; instead, it's an opportunity to grow and learn something new. He prefers an exciting lost match over a boring win.

## DISLIKES

He doesn't like games where he can't demonstrate his skills to others, whether they are team games or solo. He doesn't fully appreciate games that are available only on single platforms and do not offer a mobile alternative, as he is often on the move and doesn't want to be confined to playing at home.

## 3.2 Top performers

### 3.2.1 Payday 2

Payday is a cooperative first-person shooter stealth game in which players must carry out heists. Many of the game maps are closed environments, within which the player will have to move to satisfy the objectives of the specific mission.

To act as an obstacle to the player there will be:

- Guards, once they have detected the player, will start shooting at him and will report his position to the other guards who will rush to eliminate him
- Cameras capable of reporting the player's position and alerting the guards

Each player on the team will therefore have to collaborate to complete the heist while managing to avoid being discovered by guards and cameras, moving carefully around the map, taking advantage of the environment to hide, and trying to make as little noise as possible while using weapons and tools and collaborating in the elimination of guards if discovered.

Like in Payday, Rise of the Chancellor players, will have to move in closed environments while dealing with guards and cameras which will reveal their position and kill them.

### 3.2.2 Among us

Among us is an online multiplayer social deduction game in which up to three impostors are randomly selected among the players, in games of four to fifteen participants. Each player's gameplay is therefore distinguished based on the role assigned to him:

- Crewmates will have to complete mini-games around the game map and discover which of them are the impostors;
- The impostors will have to kill all the crewmates without being discovered.

During the game, players can decide, by mutual agreement, whether to eliminate players suspected of being impostors.

The view from above, the limited field of view, and the method of killing the impostors are the gameplay mechanics that most connect this title to Rise of the Chancellor.

### 3.2.3 The Binding of Isaac

The Binding of Isaac is a roguelike game in which the player must overcome a series of procedurally generated dungeons, managing to defeat the different enemies, mini-bosses, and bosses that they will encounter during the game. As the exploration goes forth, the player will find different buffs and de-buffs, randomly selected from a pool of thousands of elements, which will modify their character's statistics and bullets (tears). The effects that objects can have on the character are different and can be combined to form synergies that will offer a further advantage to the player. It will be up to the player to decide which objects to collect and which to ignore to build the character that best suits his playing style.

The game mechanic of power-ups that can be combined and can be found randomly around the map can also be found in Rise of the Chancellor.

### 3.2.4 Fall guys

Fall Guys is a free-to-play platform battle royale game in which players compete in elimination matches, starting from a maximum of forty challengers. As in many free-to-play battle royale video games, Fall Guys features the season pass mechanic, which allows paying players to obtain different rewards (skins, game currencies, icons, etc.) by increasing their level through experience points gained in each match.

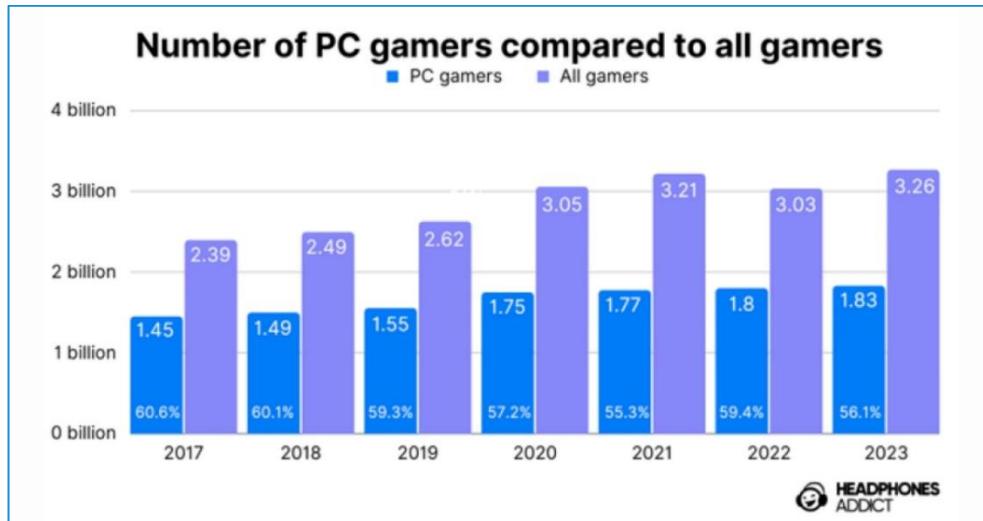
For Rise of the Chancellor, we thought of a character customization like the one present in Fall Guys. Skins will be characterized by two separate parts: an upper one (a hat) and a lower one (dress and trousers).

The Rise of the Chancellor season pass will include skins and other rewards; refer to [Section 3.6.2](#) for details.

## 3.3 Feature comparison

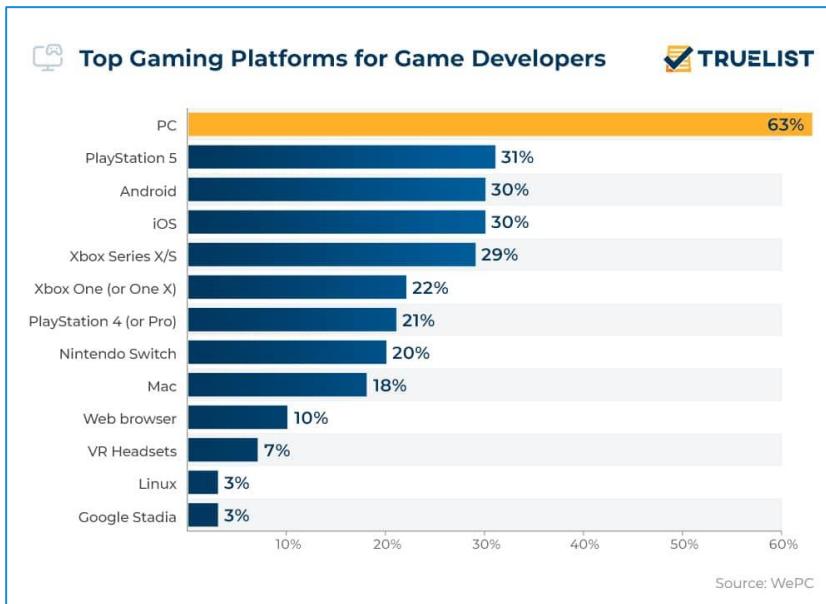
| Feature/<br>Games    | Payday 2  | Among Us   | The Binding<br>of Isaac  | Fall Guys  | Rise of the<br>Chancellor |
|----------------------|---|--|--|--|---------------------------|
| <b>Stealth</b>       | Yes   | Yes<br>for impostors   | No   | No   | Yes                       |
| <b>Traps</b>         | No  | No   | No   | No   | Yes                       |
| <b>Buff/De-buff</b>  | Yes, with<br>buffs<br>unlockable by<br>experience   | No   | Yes  | No   | Yes                       |
| <b>Online coop</b>   | Yes   | Yes  | Yes  | No   | No                        |
| <b>Online PvP</b>    | No  | Yes  | No   | Yes  | Yes                       |
| <b>Graphic style</b> | Realistic   | Cartoonish   | Retro/<br>Cartoonish   | Cartoonish   | Cartoonish                |
| <b>Platforms</b>     | PC<br>PlayStation 3<br>Xbox 360<br>PlayStation 4<br>Xbox One<br>Linux<br>Nintendo<br>Switch | Android<br>iOS<br>PC<br>Nintendo<br>Switch<br>PlayStation 4<br>PlayStation 5<br>Xbox Series<br>X S | PC<br>Nintendo<br>Switch<br>PlayStation 4<br>PlayStation 5<br>PC<br>Xbox Series<br>X S | Nintendo<br>Switch<br>PlayStation 4<br>PlayStation 5<br>PC<br>Xbox Series<br>X S | PC<br>Nintendo<br>Switch  |
| <b>Season Pass</b>   | No  | No   | No   | Yes  | Yes                       |

## 3.4 Platforms



*Number of PC gamers compared to all gamers (headphonesaddict.com)*

As these graphs convey, PC gamers are a big part of the public, and developers' choice shows the ease and the importance of this platform's development. Furthermore, a big part of hardcore players usually plays on PC.



*Around 63% of developers are creating games for PC (truelist.co)*

The digital Steam store is the most known platform, and it gives great autonomy. Through its early access program, we may also receive early feedback during development and additional financial support for project funding.

At the moment, we are not aiming for the Epic Games Store, Microsoft Store, and GOG, because it is convenient to rely on Steam's big community and its discussion and content-sharing systems to have a unique flow of feedback and interaction.

Consoles are also an important part of the distribution and fruition of games. The platform of choice in this category is the Nintendo Switch.

| CURRENT   | 2023               | LIFETIME             |
|---|--------------------|----------------------|
|  | 1,257,932<br>44.1% | 31,767,146<br>18.2%  |
|  | 456,921<br>16.0%   | 20,683,634<br>11.9%  |
|  | 1,140,489<br>39.9% | 121,827,708<br>69.9% |
| <b>CURRENT TOTAL</b>  | <b>2,855,342</b>   | <b>174,278,488</b>   |

PS5 vs. MS Xbox Series vs. Nintendo Switch – Q1 2023 Sales ([truelist.co](https://truelist.co))

At the end of 2023, Nintendo Switch sold almost 70% of all the total units among the rivals PS5 and Xbox Series X/S, moreover according to [Gitnux](#) “Indie games account for around 60% of sales on the Nintendo Switch”. Most indie games are released on Nintendo Switch and many players expect to find them on the console. This could be appealing for casual players looking for quick matches, but also ideal for our target hardcore players who want a game that can be played anywhere and non-stop. This platform is granting also a future possible local PvP with multiple pairs of joy-cons.

For future development, we would like to consider the following platforms in order of priority:  
**Android** and **iOS**: for the same reasons as Nintendo Switch, also mobile devices are granting quick access to the game anywhere on the go, but the development would become much more difficult due to the differences in architecture of these two platforms.

**PS4/PS5 and Xbox One/Series X|S**: we decided to favor Switch development as we expect these home console players to be less receptive to this kind of game and more suited for casual players, but if the game gets a good reception, we may consider releasing it on these platforms too.

### 3.5 System requirements

To play Rise of the Chancellor it's necessary to have either a PC or a Nintendo Switch console.

On console there are only two requirements: having enough space on disk, approximately 500 MB, and a subscription to the Nintendo Switch Online service, required for multiplayer games.

To determine PC requirements, we analyze those of The Binding of Isaac and Among Us, which we already identified among our top competitors, and Hearthstone.

| The Binding of Isaac | Minimum                | Recommended            |
|----------------------|------------------------|------------------------|
| <b>OS</b>            | Windows 7              | Windows 7              |
| <b>Processor</b>     | Intel Core i3          | Intel Core i7          |
| <b>Memory</b>        | 2 GB RAM               | 4 GB RAM               |
| <b>Storage</b>       | 500 MB available space | 500 MB available space |
| <b>Sound card</b>    | Yes                    | Yes                    |

| Among Us            | Minimum                       | Recommended                   |
|---------------------|-------------------------------|-------------------------------|
| <b>OS</b>           | Windows 10 32 bit             | Windows 10 64 bit             |
| <b>Processor</b>    | INTEL i3-4330                 | INTEL i3-4330                 |
| <b>Memory</b>       | 1 GB RAM                      | 4 GB RAM                      |
| <b>Storage</b>      | 2 GB available space          | 2 GB available space          |
| <b>Graphic card</b> | INTEL HD Graphics 4600        | Nvidia GTX 650                |
| <b>Other</b>        | Broadband Internet connection | Broadband Internet connection |

| Hearthstone         | Minimum  | Recommended  |
|---------------------|--|--|
| <b>OS</b>           | Windows 7                                      | Windows 10 64 bit  |
| <b>Processor</b>    | Intel Pentium D or AMD Athlon 64 X2            | Intel Core 2 Duo (2.2 GHz) or AMD Athlon 64 X2 (2.6 GHz) |
| <b>Memory</b>       | 3 GB RAM                                       | 4 GB RAM   |
| <b>Storage</b>      | 3 GB available space                           | 3 GB available space                                     |
| <b>Graphic card</b> | NVIDIA GeForce 8600 GT or ATI Radeon HD 2600XT | NVIDIA GeForce 240 GT or ATI Radeon HD 4850              |
| <b>Other</b>        | Broadband Internet connection                  | Broadband Internet connection                            |

Among these games, Hearthstone is the most similar, as it is multiplayer, features two-player matches, and has cartoonish graphics. In contrast, Among Us involves a larger number of players in each match but requires real-time interaction such as Rise of the Chancellor. The Binding of Isaac, on the other hand, is a single-player game, but its graphics requirements should be very similar to our game. We do not consider PayDay 2 and Fall Guys in this analysis as PayDay 2 is likely much more resource-intensive than Rise of the Chancellor, while Fall Guys features a much larger number of players in each match.

Finally, these are the requirements imposed by Unity, which we use as game engine:

| Unity | Windows | Linux |
|-------|---------|-------|
|-------|---------|-------|

|                      |   |  |
|----------------------|---|--|
| <b>OS</b>            | Windows 7 (SP1+), Windows 10 and Windows 11, 64-bit versions only | Ubuntu 20.04, Ubuntu 18.04, and CentOS 7           |
| <b>Graphics card</b> | DX10, DX11, DX12 capable  | OpenGL 3.2+ or Vulkan-capable                      |
| <b>CPU</b>           | x86 or x64 architecture with SSE2 instruction set support         | x64 architecture with SSE2 instruction set support |

From this analysis we determined these PC requirements:

| Rise of the Chancellor | Minimum   | Recommended   |
|------------------------|---|---|
| <b>OS</b>              | Windows 7   | Windows 10 64 bit   |
| <b>Processor</b>       | 2.2 GHz   | 3 GHz   |
| <b>Memory</b>          | 2 GB RAM  | 4 GB RAM  |
| <b>Storage</b>         | 500 MB free   | 500 MB free   |
| <b>Graphic card</b>    | With 512 MB VRAM  | With 1024 MB VRAM   |
| <b>Connection</b>      | 20 Mbps ADSL network, with a latency not higher than 30ms | 20 Mbps ADSL network, with a latency not higher than 30ms |

## 3.6 Business model

Rise of the Chancellor will be available for purchase at 9,99€ (or the equivalent in local currency). However, our primary revenue stream is not expected to be from game sales but rather from in-game transactions. While we may release the game as free-to-play, this upfront cost should mitigate server load and deter players from creating multiple bot accounts.

Our main source of revenue will be the purchase of in-game currency, which players can use in the in-game store to acquire cosmetics and the seasonal premium pass. In-game currency can also be earned through winning matches, although at a slower pace (refer to [Section 5.4.4](#) for details).

### 3.6.1 Cosmetics

Cosmetics can be equipped by players to personalize their character. They can be purchased from the in-game store at a cost that depends on their “coolness” or acquired as a reward for completing certain challenges. Their cost should vary between the equivalent in-game currency of 2,50€, for the most basic cosmetics, and 10€, for the coolest ones; prices may vary in the future according to revenues and players’ feedback.

Cosmetics are divided into upper and lower body elements and players can choose one from each category to equip. Cosmetics don’t increase the probability of winning but are just a way to show off themselves; however, as our target players are killers coolest cosmetics should not be purchasable, but only obtainable by completing certain tasks, like killing the opponent a great number of times during the same match, winning 10 matches in a row or reaching the top 1% of the leaderboard. Tasks like these should be particularly difficult to complete and appeal to killer players.

To guarantee a long life to the game new cosmetics should be constantly added to the game; in-game events, not linked to season progress may also add limited-time cosmetics (refer to [Section 5.5.3](#) for details).

### 3.6.2 Season system and premium pass

Rise of the Chancellors is structured into seasons as a classic online multiplayer game.

During each season, players compete against members of the opposite team to win matches and earn points for themselves and their team. Points increase the players' rank (refer to [Section 5.5.4.1](#) for details) and enable them to unlock rewards from the season pass. A paid version of the season pass, called "Chancellor's pass", provides access to better and more frequent rewards. Rewards can be in-game currency, cosmetics, and character powerups (refer to [Section 5.3.6](#) for details).

At the end of each season, the score of each player and each team is reset and players receive cosmetic rewards according to their final rank; members of the winning team receive better and more rewards. With the start of each new season, a fresh season pass is introduced, but players who previously purchased a premium pass and did not complete it can decide from which pass to receive rewards.

Each season is expected to last for two months, to give the development team enough time to create new maps and new cosmetics, plan new weekly events (refer to [Section 5.5.3](#) for details), and balance potential new game mechanics (buffs, de-buffs, traps, and chancellor effects). This duration should provide enough content even for experienced players until the beginning of the next season.

## 4. Legal Analysis

### 4.1 Name

According to both the [USPTO](#) and the Italian [UIDM](#) websites the trademark “Rise of the Chancellor” has not been registered yet and can be freely used by anyone.

### 4.2 Licences

All the assets used in the prototype are either free from copyright or have been designed by the development team. Before shipping the game, all assets should be redesigned by a professional artist.

Refer to Section 9.4 of the GTD for software licenses we will need for the development of the game.

### 4.3 PEGI and ESRB classification

We expect our game to be classified as PEGI 12 by the [PEGI](#) and as TEEN by the [ESRB](#). Both labels target games for teenagers with non-realistic violence, mild forms of sexual posturing and strong language. Our game presents neither sex nor strong language, but players compete and kill each other to reach victory. We do not expect the presence of a friendship system to increase the game rating as Hearthstone, which has a very similar system, is rated PEGI 7 / TEEN.

## 5. Gameplay

### 5.1 Overview

Mangiagalli and Golgi face off in a match to conquer the university. Their goal is to reach the server room: the office of the current rector. Along the way, they will clash in an environment they lived in a millennium ago, the university classrooms. In these settings, the two players must hinder each other using stealth, traps, buffs, and de-buffs, in order to collect all the badge fragments and reach the teleporter before their opponent.

### 5.2 Gameplay description

A player can invite a friend to play with them or rely on the matchmaking system to automatically find an opponent to play with. Players can choose to play 3, 5, or 7 rounds as they prefer. During registration players are assigned to one of the two factions represented by the characters, in ranked matches players contribute to their team's score and can only battle against the opposing team's players.

Before starting the match, they are given a character between Mangiagalli and Golgi chosen depending on the belonging team for ranked matches or randomly for causal. At the beginning of each round, the players start on opposite sides of a university floor and must locate all the badge fragments required to unlock the teleport to the next level. Being the first to activate and reach the teleport results in a victory of the round; the match ends when one player has won most of the rounds.

The fragments are scattered all over the map, each player has a top-down vision but is restricted to what is in front of them and they must pay attention to traps, guards, and cameras which could hinder them and expose their location. Each player has a mini-map helping them to explore the floor, showcasing all the rooms they visited and giving visual hints on where the opponent could be, thus they can use it to navigate through the university floor or rely on the sounds produced by the ambient or the enemies.

Everyone can choose from a multitude of approaches to steal the badge fragments and win: a stealth and strategic approach is safer but needs patience and planning, while a direct and offensive approach is profitable but also dangerous.

All over the floor are buffs or de-buffs which could be used to gain advantage against the opponent: a buff gives a boost to a specific stat, and a de-buff instead lowers an opponent's stat. Each buff or de-buff has its complementary synergy, creating unexpected and powerful effects.

Additional help and strategy can be achieved with the use of traps, which can be stored in the inventory and placed around the map. There are multiple kinds of traps each with its specific effect and they are activated by the opponent as soon as they step on it, thus they must pay attention to where they walk.

The challengers themselves can interfere directly with each other by killing the opponent. This can be done by acting in the shadows, by silently following the victim and killing them from behind. If the players meet one in front of the other though, they must fight by succeeding in a quick game

based on a sequence of keys to press in the right order, only the quicker of the two survives the fight.

The current AI chancellor is not happy to accommodate two rivals like Mangiagalli or Golgi and will keep trying to hamper their path to victory by intervening straight away and periodically with its powers during the match.

The game offers a leaderboard system where players can compete, gaining points for every win or kill and losing points for each defeat, and additionally contribute to their team's score.

## 5.3 Fundamental gameplay elements

### 5.3.1 Match structure

Each match can consist of 3, 5, or 7 rounds; the winner of the match is the player who has won the most rounds. At the beginning of each round, players will spawn at two predetermined points on opposite sides of the map and will have to search for the badge fragments scattered throughout the map to win the round and move on to the next one.

### 5.3.2 View

#### 5.3.2.1 Camera

The in-game camera gives the player a third-person, top-down view of their character.

#### 5.3.2.2 Field of view

To give the player greater immersion in the stealth context of the game, we decided to limit visibility to a portion of the map framed by the character's field of view. Everything that doesn't fit into that space is blurred or, in the case of the main objects (traps, traps dispensers, buffs, de-buffs, and badge fragments) they are totally invisible until they are framed by the player's cone of vision. Because of this view, the player is forced to move carefully and pay close attention to sounds in order to avoid sentinels, cameras and traps that can hide in every darkened corner.



*Concept for the field of view, from the game Darkwood (Acid Wizard Studio)*

### 5.3.2.3 Mini-map

During the game, the mini-map will be visible in the lower right corner of the user interface. This will initially only show a limited area around the character. As the player proceeds with exploration, the visited areas of the environment will become permanently visible on the mini-map.

In addition to the sections of the game arena, markers are displayed within the mini-map to indicate the trap dispensers, the end-of-round teleporter and the opponent. The opponent's marker is not temporary, but with different timing based on the situation:

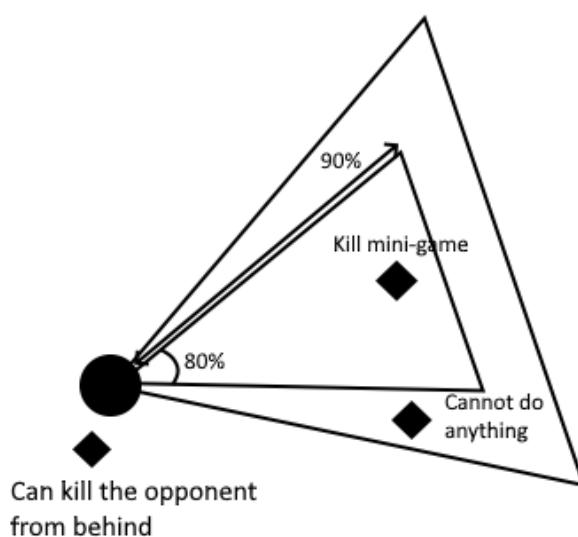
- Player detected by sentinels or cameras: the marker are visible every 2 seconds
- Player with more than one badge fragment: the marker will be visible intermittently as long as the player has the badges in his possession. The more fragments he has collected, the more frequently the marker will appear on the mini-map.

### 5.3.3 Player interaction

Since the game is designed for killer-type gamers, each player will have different options to hinder his opponent and ensure his dominance over him:

- **Stealth Kill:** if a player were to come across his opponent, but without being seen himself, the latter will be able to carry out a stealth kill, which will kill the opponent instantly.
- **Non-Stealth kill:** if both players are in each other's field of view, a quick time event-style mini-game will start, in which they will have to press the keys shown on the screen in sequence. The player who completes the sequence first will kill his opponent. Keys are chosen randomly among the four directional arrows; to prevent the mini-game from starting before the players realize what is happening, a small delay of one second is inserted before the first key appears on screen.

A player can kill the opponent from behind if they are outside their field of view, while the kill mini-game starts when both players are within each other's field of view. However, to prevent the mini-game from starting when only a small fraction of a player's body is visible to the opponent, an inner field of view triangle is used. This inner triangle has an opening angle that is 80% of the outer field of view and an extension distance that is 90% of the outer field of view.



When a player is killed, they respawn at their original spawn point after 10 seconds.

Killing the opponent allows the player to gain one of his badge fragments and get a better score at the end of the match, while being killed by them will reduce their final score. For this reason, it's very important for player to understand when it's better to pursue a kill and when to hide in the dark waiting for a better moment.

### 5.3.4 Badge fragments

To win a round, players will have to collect all the necessary badge fragments and activate the end round teleport before the opponent can kill them. The number of badge fragments to collect is specific to each round configuration (refer to [Section 5.7](#) for details), but the rounds in a match are arranged so that the number of fragments increases with each subsequent round.

Each player will start the round with a fragment already in their possession, in doing so, each of them will be forced to look for the opponent and kill him to take possession of his fragment badge, thus making the gameplay more suitable for killer gamers. In order to collect a badge fragment, a player must hold the interaction button for 5 seconds.

Collecting badges represents both an advantage and a disadvantage for players: they are required to win the round, but, except for the starting one, each badge, if collected, will intermittently indicate the player's position on the opponent's mini-map. Starting from the second fragment, the more fragments the player has, the more frequent the signals received from the opponent; signal frequency is calculated according to this formula:

$$\text{delay} = \frac{20}{\text{numberOfFragments}}$$

The delay between each signal is, thus, in a range between 2 (with 9 badges) and 10 (with 2 badges) seconds. The maximum number of badges depends on the dimensions of the map, and the more fragments there are, the more difficulties the player has to face to get to the end of the level. This grants enough balance between the player taking the risk of carrying all those badges and the opponent seeing their position.

Once a player has collected all the badge fragments, the end-round teleport activates, and they must reach it to advance to the next round. When the teleport is active, it emits a constant sound in the environment, which the player can use to locate it.

### 5.3.5 Buffs and de-buffs

To gain an advantage in the search for badge fragments, players can collect buffs and de-buffs scattered randomly around the map to increase their statistics or decrease those of the opponent. These look like scrolls and have an icon that identifies their effect and distinguishes them. We decided to give this aspect to the upgrades to ensure that the characters of Mangiagalli and Golgi, brought back to life from the past, are naturally attracted from scrolls, which also belongs to the past and contrasts with the technology that reigns supreme in the futuristic setting of the game.



*Buffs and de-buffs appearance*

To layer this type of mechanic, thus attracting hardcore players, buffs and de-buffs can be combined to obtain an additional boost: possible combinations are pre-defined, but unknown to the players; the only way to discover them is by playing. In this way, players must be very careful when they collect a de-buff that would decrease the opponent's statistics, as it may combine with one of their buffs, thus giving them a great advantage. For this reason, every time a player picks up a buff or de-buff the opponent will be notified. We call buff and de-buff combinations Super Buff.

Once collected, buffs and de-buffs will play two distinct sounds, these two sounds also differ based on who collects these objects, in order to allow the player to understand if the opponent has taken a buff or a de-buff.

In a map, a maximum of one instance of each buff or de-buff should be present to prevent players from accumulating or sharing multiple copies. At the end of each round, all acquired buffs and debuffs are lost.

Stats that can be influenced by buffs and de-buffs present in the first open beta are:

- **Movement speed:**
  - **Swift as the wind:** doubles the speed;
  - **Don't hurt yourself:** halves the speed.
- **Cone of vision:**
  - **Feline Gaze:** increases its angle by 30° degree and its extension by 1,5 units;
  - **Blind as a bat:** decreases its angle by 30° degree and its extension by 1,5 units.
- **Rotation speed:**
  - **Spider senses:** increases the speed by 25%;
  - **Sluggish Spin:** decreases the speed by 25%.
- **Trap bag capacity:**
  - **Squirrel something away:** increases by one slot;
  - **Big things come in small packages:** decreases by one slot; if they already possess the maximum number of traps the last one acquired is discarded.
- **Badge fragment acquisition time:**
  - **Sly as a racoon:** decreases time by three seconds;
  - **Sloth of hand:** increases time by three seconds.
- **Badge fragments needed to be spotted on the mini-map:**

- **Snake in the grass:** increases limit by 1;
- **Dumb as an ox:** decreases limit by 1.

Super buffs present in the open beta are:

- **Light as a feather** (don't hurt yourself + big things come in small packages): the player will emit no sound when moving;
- **In the blink of an eye** (swift as the wind + sly as a racoon): the player is partially invisible by the opponent;
- **I can see everything** (feline gaze + spider senses): buffs, de-buffs and trap dispensers are visible even if outside of the player cone of vision;
- **Like a magpie** (squirrel something away + dumb as an ox): when the player kills the opponent, they can steal one random trap of theirs.

### 5.3.6 Traps

Traps are obstacles placed on the ground that, when stepped on by a player, trigger a temporary malus effect. Unlike buffs and de-buffs which alter player statistics such as movement speed, traps instead hinder a player's ability to interact within the game world, for example by making them blind for a certain period.

Traps can either be pre-existing on the map or can be placed by the player. Scattered around the map are trap dispensers, that players can use to obtain traps: each dispenser provides a single type of trap before entering a disabled state for a duration determined by the trap's potency; if a dispenser is disabled neither player can interact with it until it becomes re-enabled. If a player already possesses the trap provided by the dispenser, they cannot obtain it again until they place it on the ground. If a player already possesses three traps, they cannot acquire any more. Upon interacting with a trap dispenser, a spatialized sound is emitted, audible to both the player and their opponent. After acquiring a trap from a dispenser, the player will be able to see the trap it provides as an icon on its screen.

When a player acquires a trap, it is added to their inventory and can be placed on the ground. The UI displays the currently selected trap, the next in sequence, and the previous one, allowing players to cycle through traps sequentially. Traps can only be placed if there are no obstructing objects in front of the player.

Traps placed on the ground resemble pressure plates and are only visible when directly framed by the player's viewpoint. Stepping on a trap triggers a distinctive "CLICK" sound, along with a pressure animation, activating its effect. The spatialized "CLICK" sound is audible within the environment and can also be heard by the opponent.



*Trap appearance when placed on the ground*

Traps planned to be included in the first open beta are:

- **Inkwell**: the player is blinded for 15 seconds, disabling their cone of vision and making them everything blurred; can be acquired from a dispenser every 90 seconds;
- **Freeze**: the player cannot move for 5 seconds; can be acquired from a dispenser every 120 seconds;
- **Spinner**: controls are inverted for 10 seconds; can be acquired from a dispenser every 60 seconds;
- **Squid**: some of the rooms already discovered by the player are hidden again on the mini-map; can be acquired from a dispenser every 60 seconds;
- **Teleport**: the player is teleported back to their spawn-point; can be acquired from a dispenser every 60 seconds;
- **Beacon**: the player's position is constantly visible by the opponent on the mini-map for 10 seconds; can be acquired from a dispenser every 90 seconds.

### 5.3.7 Player's powerups

The available buffs and traps vary among players. When players first register, they can claim three buffs or traps. Subsequent powerups must be earned through gameplay. These powerups can be unlocked by completing the season pass, which grants a random powerup among those the player does not yet possess; premium season pass owners will receive more frequent and better powerups. Powerups can also be awarded as prizes at the end of each season. Therefore, a variety of powerups should be added to the game at the beginning of each season. While adding a good number of powerups may be challenging, we might consider adding powerups in the future that do not have a direct correspondence with buffs or traps found during a round. Additionally, some powerups may have multiple variants of different rarities that vary in strength.

During each match, players cannot select the same powerup twice. Players who do not have enough powerups may have to forgo using one during the round. This encourages new players to prefer shorter matches, which may be more comfortable for them as they are still learning the details of the game.

### 5.3.8 AI Chancellor's effects

Once per round, to upset the balance of the game, the AI chancellor will randomly activate and use one of its effects, which are designed to put both players in difficulty.

Effects activate every 60 seconds with a probability of:

$$\max \{0, 1 + 0, 2 \times (\text{minutesFromRoundStart} - 1), 1\}$$

The same effect cannot be activated twice; if no available effect remains nothing happens.

Upon activation, a siren sounds, the screen flashes red and the effect used is displayed on the screen.

Effects to be included in the open beta are:

- **Money burns a hole in one's pocket:** players lose all their traps;
- **From hero to zero:** players lose all their buffs and de-buffs;
- **Trading places:** players positions are swapped;
- **Lose one's bearings:** all discovered rooms are hidden on the mini-map;
- **Beacon of hope:** players positions are constantly visible on the mini-map;
- **When all seemed lost:** the round time limit is increased by 1 minute. This effect cannot be activated if time has already run out and players are in a tie.

### 5.3.9 Sentinels and cameras

While searching for badge fragments, the player will not only have to pay attention to the opponent but also avoid entering the guards and cameras' field of view.

Once a player is detected, the cameras will reveal their location on the opponent's mini-map.

As for the sentinel, they represent a greater obstacle. Sentinels follow a preset path on the map. If a player does alert one, it would not only report his location, but would chase him across the map and, once it has reached him, kill him, forcing him to return to the starting point, losing the badge fragments collected up to that point. Escaping from a sentinel, however, leads the player astray, disorientating him and increasing the risk of running into traps, cameras, or the opponent.

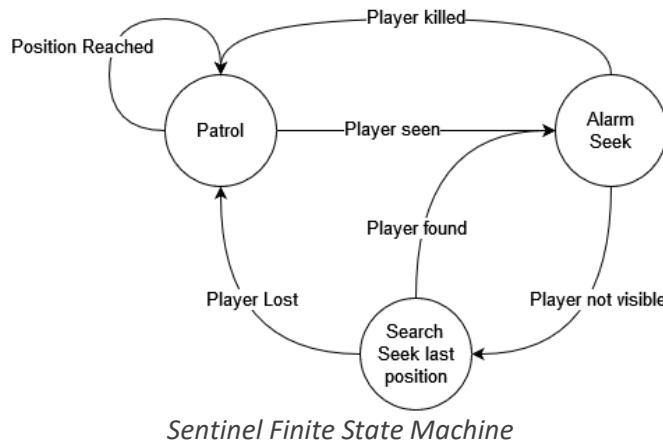
Every sentinel and camera project a cone of light corresponding to their field of view, in which they are able to see the player and start following them. The light color changes based on the state of the enemy:

- **White:** the enemy is in patrol state;
- **Red:** the enemy is aware of the player and it is following them;
- **Yellow:** the enemy has lost the view on the player and it is searching for them.

To get rid of a sentinel, the player must be able to get out of its line of sight, taking advantage of the environment to hide. This will make the sentinel return to its initial patrol state. If a player encounters a sentinel without it spotting them, they will be able to make a stealth kill and get rid of it for the rest of the round, although this will also benefit his opponent.

The footsteps of the sentinels have a specific sound that recalls the movements of a robot, in

order to make the sentinels audible to the nearby player, who can understand that he is close to one of them and move accordingly.

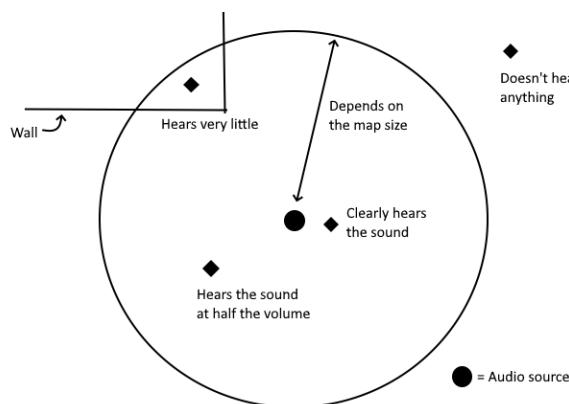


### 5.3.10 Sound effects

Audio plays a crucial role in the game as players barely see what is in front of them. Each audio effect provides feedback to the player, helping them orient themselves in the environment, but some of them may also aid the opponent as most of a player's actions emit sound effects audible by them. In the subsequent sections, we describe spatialized sound effects – heard by both players – and interface sound effects, exclusive to the initiating player. For a list of all sound effects that must be implemented refer to [Section 8.4](#).

#### 5.3.10.1 Spatialized sound effects

Spatialized sound effects have a specific source point and are heard by any player in their area of effect: the nearer the player is to the source point the better they will hear the sound. Audio rolloff should be linear.



Audio effects like these are players' and guards' footsteps but also trap dispensers' activation mechanisms, players' stabs, and camera detection alarms.

Refer to [Section 8.4.2](#) for a list of all spatialized sound effects.

### 5.3.10.2 Interface sound effects

Interface sound effects are only heard by one player and only act as feedback to events that do not affect the other player or the environment. For example, an interface sound effect is the countdown tick at the beginning of each round, but also the error sound emitted when the player tries to interact with the end-round teleport without all the badge fragments.

Refer to [Section 8.4.1](#) for a list of all interface sound effects.

## 5.4 Controls

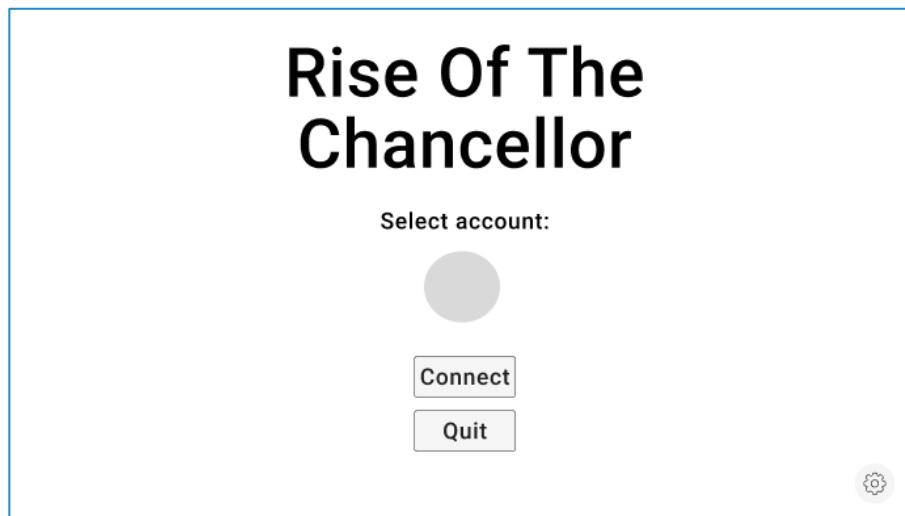
### 5.4.1 Interfaces

In-game interfaces can be categorized into two main groups: main menu interfaces, which are the most complicated, and round interfaces. We analyze both groups in the following two subsections.

#### 5.4.1.1 Main menu

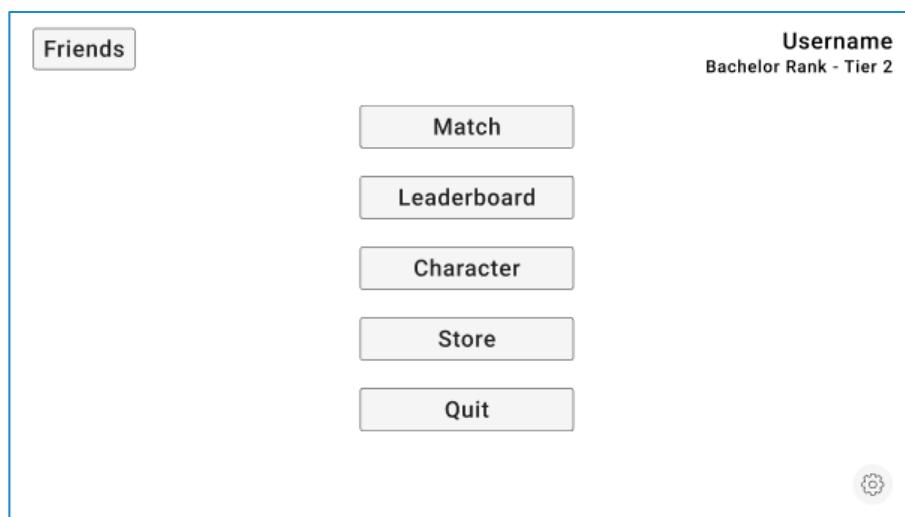
##### 5.4.1.1.1 Login

When the player starts the game, they must select which account they want to log into.



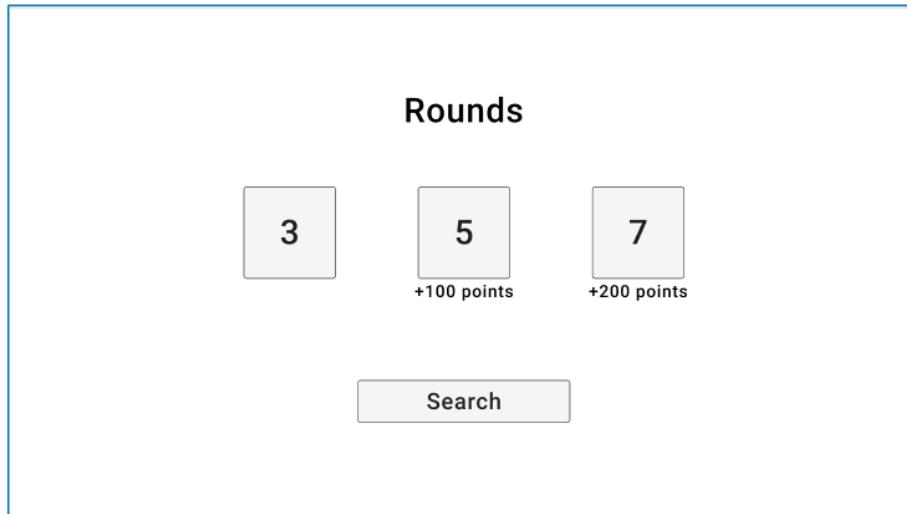
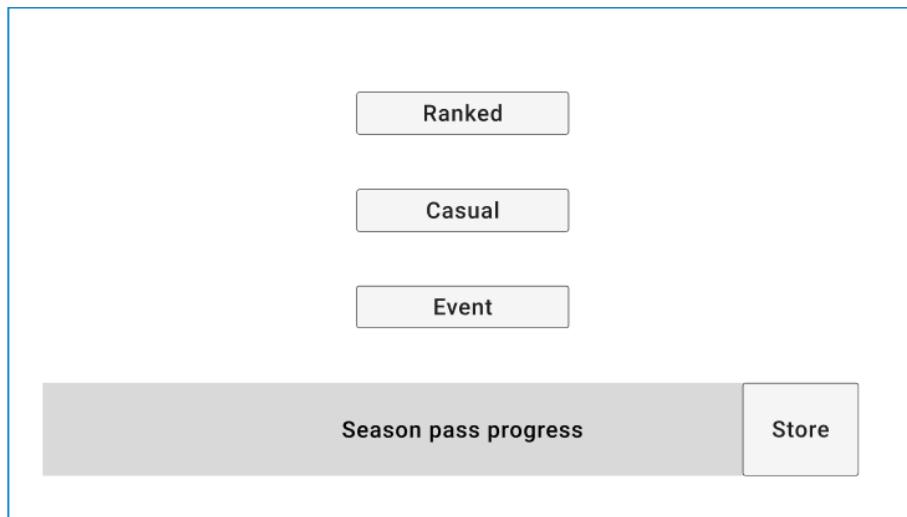
##### 5.4.1.1.2 Main Menu

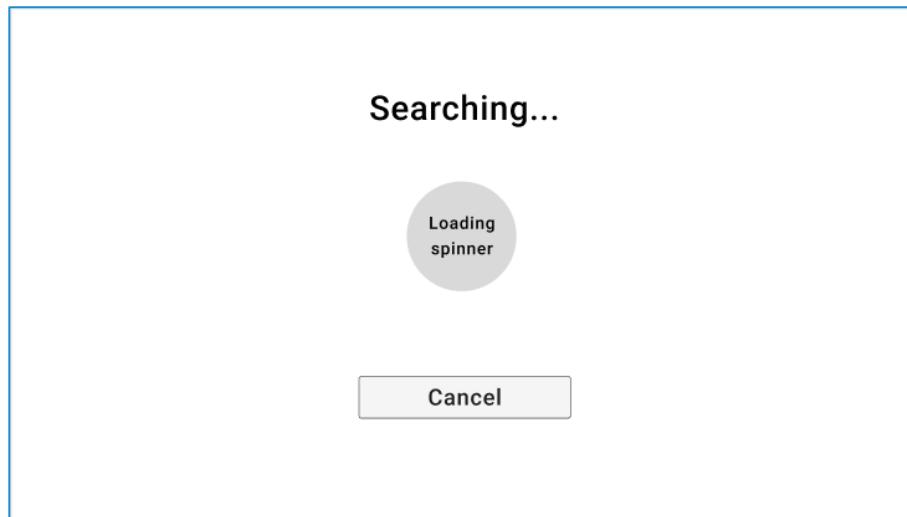
After logging in, players can select to start a new match, check the leaderboard, personalize their character or access the store.



#### 5.4.1.1.3 Matches

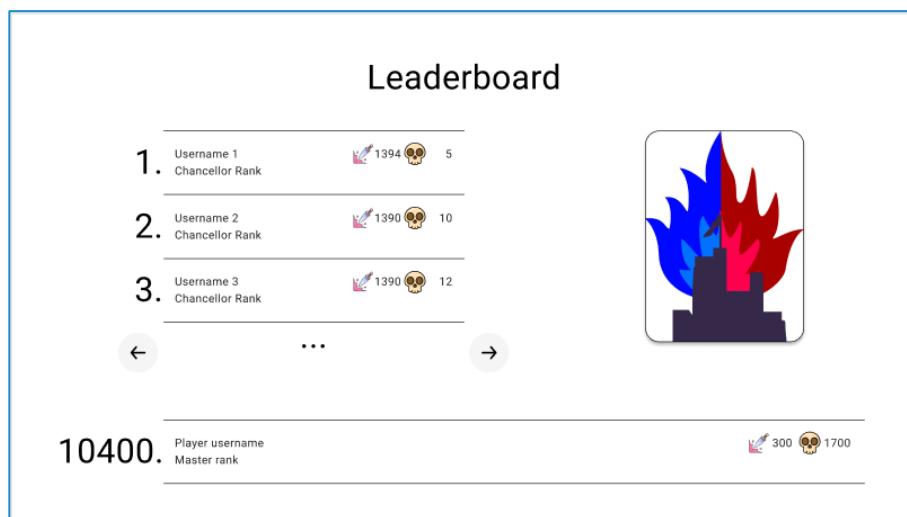
Clicking on the “Match” button in the main menu allows players to choose between starting a ranked match, a casual match, or an event match. If they select a ranked or casual match, they must specify the number of rounds they wish to play. For event matches, the next steps depend on the current event in progress. After selecting the number of rounds, players wait for the server to pair them with a suitable opponent. From the match interface, players can also check their season pass progression, claim its rewards, and access the store.

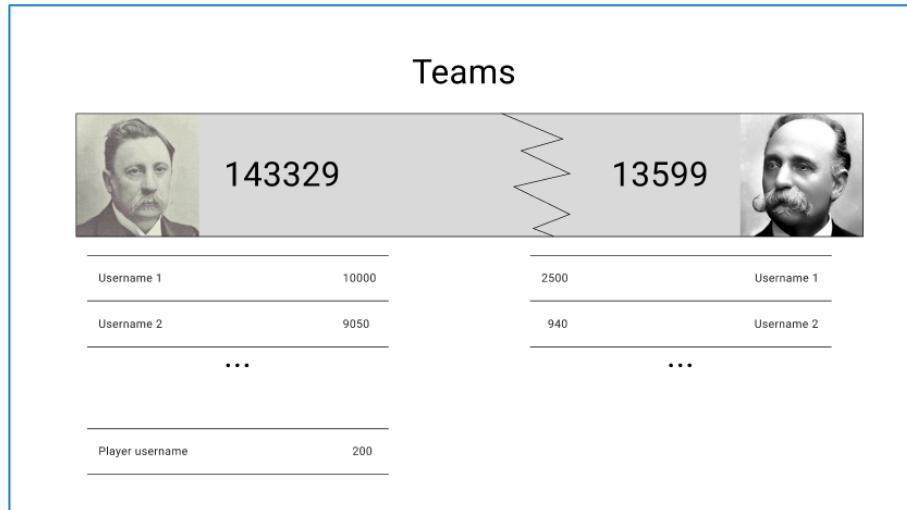




#### 5.4.1.1.4 Leaderboard

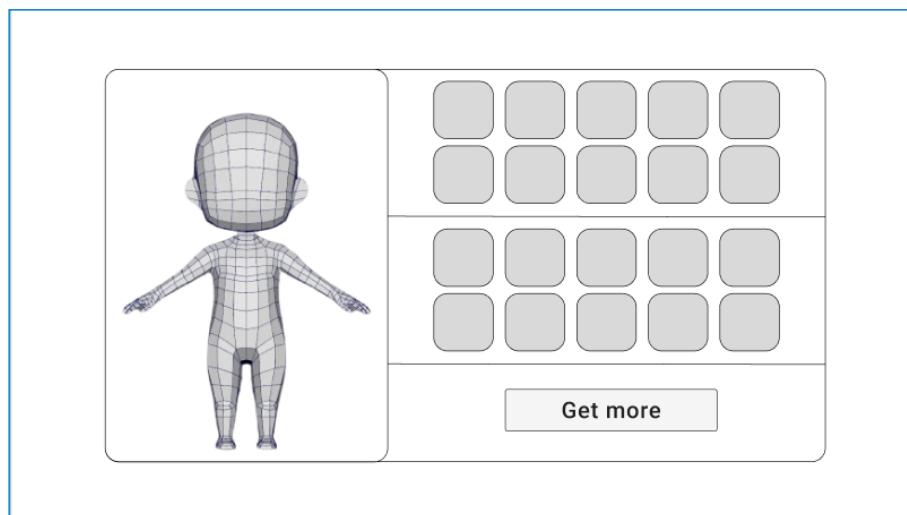
Players can view the top 500 players on the server, divided into five pages of 100 players each, via the leaderboard. At the bottom of each page, they can also check their individual position on the leaderboard. By clicking on the right “Teams” button (with the university building on fire), players can see which of the two teams has the advantage and who the top performers are on each team, along with the number of points they have contributed. The bar between the two teams moves toward the picture of the team currently in the lead.





#### 5.4.1.1.5 Character

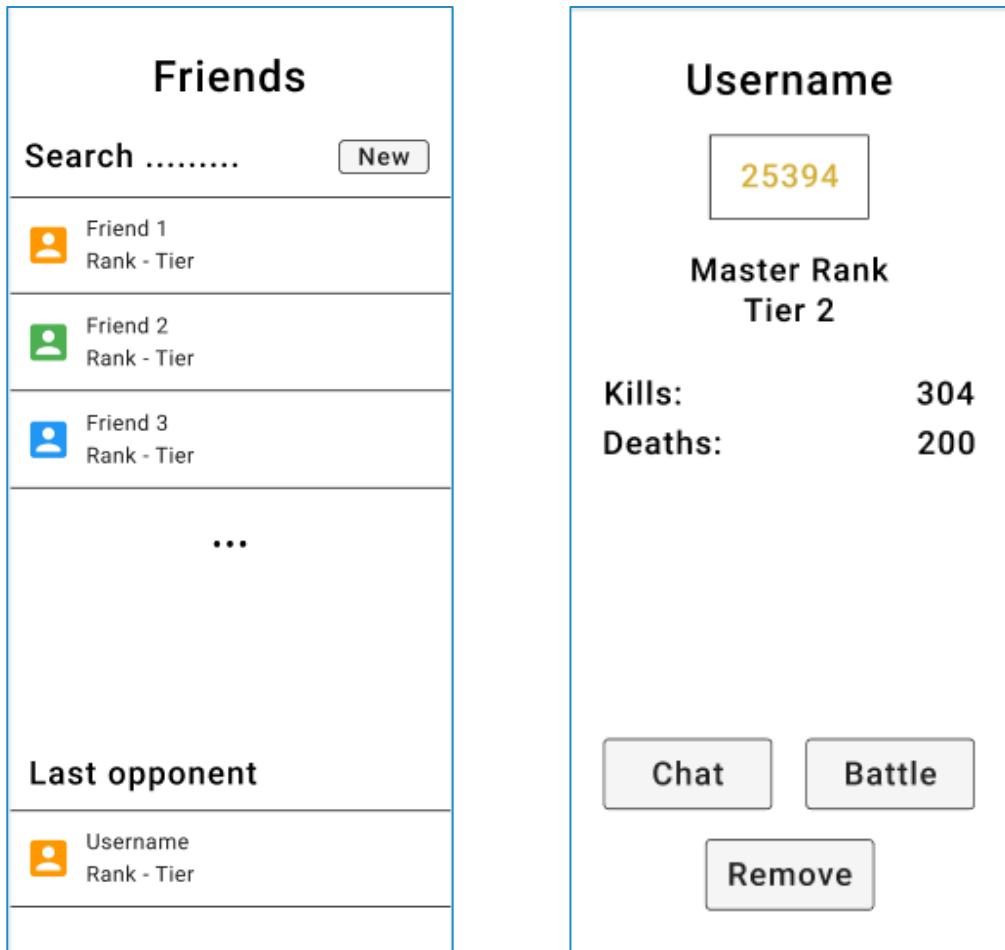
From the “Character” menu, players can personalize their character's appearance by selecting a cosmetic item for the upper body and another for the lower body. By clicking the “Get more” button, they can directly access the store for additional items.



#### 5.4.1.1.6 Friends

By clicking the “Friend” button in the main menu, players can access a list of their friends. From this screen, they can send new friend requests, including to their last opponent, check their friends' statistics (such as score, rank, tier, kills, and deaths in the current season), and challenge them to a casual or event match.

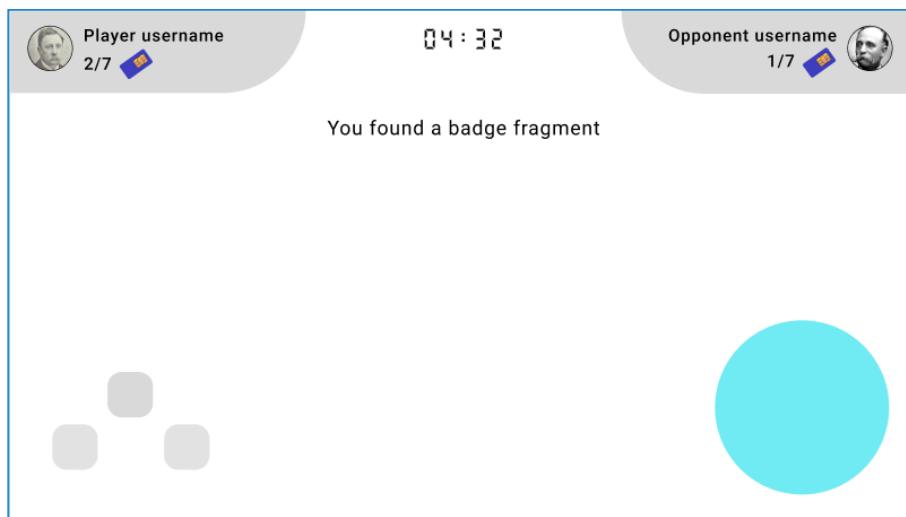
The interface is designed in a “phone” style, giving the player the appearance of using a futuristic phone. Refer to [Section 9.2](#) for more details.



## 5.4.1.2 Round

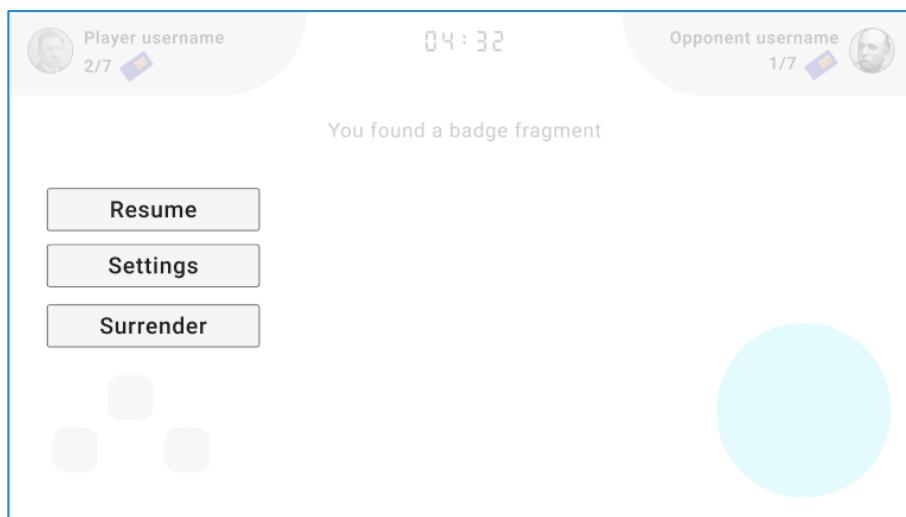
### 5.4.1.2.1 In-Game

The in-game interface consists of a mini-map that shows which rooms have been discovered, a timer indicating the time remaining until the end of the round, a log box, and a trap wheel. The log box, in the bottom right corner, notifies the player about events during the round, such as the activation of new buffs or de-buffs, or the respawn of an opponent; log messages gradually move toward the top of the screen and fade out. The trap wheel, in the bottom left corner, displays the currently selected trap, as well as the next and previous traps in the inventory.



### 5.4.1.2.2 Pause menu

Players can access the pause menu at any time during a round to surrender or adjust the game settings. Note that the game continues to run while players are on the pause menu; for this reason, the menu background should be transparent, allowing players to see what's happening in the game.



## 5.4.2 Rules and procedures

### 5.4.2.1 Rules

- Two players are matched by the matchmaking system. Matchmaking system specifics are defined in [Section 5.5](#).
- Players start from two different spawn points on opposite sides of the map.
- Players start the round with one of the badge fragments in their loot.
- Players wander in the map and start looking for the rest of the badge fragments.
- When a player finds a badge fragment, they must hold the interaction button for 5 seconds to loot it.
- A player can kill the opponent from behind and steal a badge fragment.
- When players are in front of each other a mini-game will start: each player is shown a sequence of keys, the one who presses them all correctly first kills the opponent and can steal a badge fragment.
- The rogue AI chancellor will randomly once per round trigger a special effect which alters various aspects of the game. The different effects of the AI are defined in section [Section 5.3.8](#).
- When a player collects all the badge fragments, they can win the round by going to the end-level teleport and activate it.
- Each round has a time limit, at the end of which, the player with the most badge fragments wins.

### 5.4.4.2 Procedures

- The number of rounds that a player can select is always odd (3, 5 or 7), to guarantee a winner.
- Badge fragments are scattered around the map in locations initially unknown to the players.
- The player must collect all the fragments to advance to the next floor.
- The player can kill the opponent and sentinels by approaching and attacking them, all this while keeping themselves outside their cone of vision.
- Players can see badge fragments, buffs, debuffs, traps, sentinels, cameras and the enemy only when directly observed.
- If a player takes a de-buff, it will be applied to the opponent's statistics.
- Buffs and debuffs can be combined to obtain additional effects.
- When a player dies (by a trap or by the other player) they lose one of the badge fragment they collected so far and returns to the spawn point.
- When a player is spotted by a camera or by a guard, their location is shown in the opponent mini-map.
- Starting from the second badge fragment grabbed, player's location is shown in the opponent mini-map intermittently; the more badge fragments a player has, the more frequently their location is shown.

### 5.4.3 Winning conditions

Matches consist of an odd number of rounds (3, 5, or 7) and conclude when one player has won the majority. To win a round, a player must collect all the badge fragments on the map and reach the end-round teleport before the end of the timer expires (5 minutes). If the timer reaches zero, the player with more badge fragments wins the round; in case of a tie, the round continues until one player gains an advantage. If one player disconnects during the game or surrenders the opponent automatically wins the match.

These winning conditions apply to ranked and casual matches, as well as most event matches; however, some event matches may have different winning conditions, depending on their design and special rules.



*Reference for the end round teleport machine, from Doctor Who*

### mat5.4.4 Scoring conditions

At the end of each ranked match players earn or lose points depending on their performance during the match. Points depends on the following factors:

- Result of the match (whether the player won or lost);
- Number  $K$  of kills made;
- Number  $D$  of deaths suffered;
- Number  $R$  of rounds of the match;
- Player's points  $P_p$ ;
- Opponent's points  $P_o$ .

Points are calculated with the following formulas:

$$W = \begin{cases} 1 & \text{if the player won} \\ -1 & \text{if the player lost} \end{cases}$$

$$\text{roundBonus} = \begin{cases} 0 & \text{if } R = 3 \\ 100 & \text{if } R = 5 \\ 200 & \text{if } R = 7 \end{cases}$$

$$\text{basePoints} = (\max \{W \times (K - 2D), 0\} + 1) \times 50 + \text{roundBonus}$$

$$\text{growthFactor} = \begin{cases} -\frac{0,75}{12000} \times P_p + 1,75 & \text{if } P_p \leq 12000 \\ 1 + \frac{12000 - P_p}{36000} (1 - 0,25) & \text{if } 12000 < P_p \leq 48000 \\ 0,25 & \text{if } P_p > 48000 \end{cases}$$

$$\text{rankDiff} = \begin{cases} 1 & \text{if } |P_o - P_p| \leq 6000 \\ 1 + W \times \frac{P_o - P_p - 6000}{1000} & \text{if } P_o > P_p \\ 1 + W \times \frac{P_o - P_p + 6000}{1000} & \text{if } P_o < P_p \end{cases}$$

$$\text{points} = W \times \text{basePoints} \times \text{rankDiff} \times \text{growthFactor}^W$$

Additionally, if the opponent is on the leaderboard (refer to [Section 5.6.1](#) for further details) and the player wins, the points they earn are doubled; if they lose, they are zeroed.

These formulas were developed with the following considerations in mind:

- Deaths are weighted more heavily than kills to discourage reckless play.
- Matches with a higher number of rounds grant a bonus to the final score.
- The growth factor for point accumulation decreases as a player's points increase. Specifically, it starts at 1,75, decreases to 1 at 12.000 points (Bachelor Rank Tier 3 threshold) and decreases to 0,25 at 48.000 (Chancellor Rank threshold). This should ensure faster growth at the beginning of the game to make players feel stronger and more satisfied with their victories.
- Winning against a player with a higher score grants more points if the difference between the two scores is greater than 6000 (half a tier); losing results in fewer points deducted.
- Winning against a player with a lower score grants fewer points if the difference between the two scores is greater than 6000 (half a tier); losing results in more points deducted.

Whenever a player earns points, they are added to their respective team's score; refer to [Section 5.6.1.2](#) for further details on teams. Points are exclusively earned or lost in ranked matches; casual and event matches do not contribute to point calculations.

Finally, players can earn in-game currency by winning matches. Whether it's a ranked, casual, or event match, each victory rewards them with 500 coins, capped at a maximum of 2500 coins per day. Prices in the in-game store should be adjusted accordingly.

## 5.4.5 Interaction system

Interaction with the game is facilitated through either a controller, compatible with both PC and Nintendo Switch, or a mouse and keyboard setup, exclusive to PC. In the following tables, we use references to Nintendo Switch controller buttons, but they can be easily adapted to other controller models.

### 5.4.5.1 Menu

| Action                     | Controller (Nintendo Switch)         | Mouse and keyboard |
|----------------------------|--------------------------------------|--------------------|
| Navigation between buttons | Left stick and up, down d-pad arrows | Mouse pointer      |
| Button clicks              | A                                    | Mouse left button  |

### 5.4.5.2 Match

| Action                  | Controller (Nintendo Switch) | Mouse and keyboard     |
|-------------------------|------------------------------|------------------------|
| Character movement      | Left stick                   | WASD                   |
| Field of view rotation  | Right stick                  | Mouse pointer          |
| Camera rotation         | L and R buttons              | Q (left) and R (right) |
| Interaction             | Y                            | E                      |
| Trap selection          | Left and right d-pad arrow   | Mouse scroll wheel     |
| Selected trap placement | X                            | F                      |
| Stab                    | ZR                           | Spacebar               |
| Pause                   | + and - buttons              | Esc                    |

## 5.5 Modes

The Rise of the Chancellor offers three primary modes: ranked matches, casual matches, and event matches. Each mode is detailed in the following subsections, but first we describe the game matchmaking system.

When initiating a new match, the matchmaking system pairs players based on several criteria:

- **Relative Skill Level:** stronger players, identified by a combination of factors including their win-loss ratio, kill-death ratio, and to some extent, their accumulated points, are more likely to be matched with weaker players who have demonstrated success in their recent matches. This comprehensive assessment ensures that the matchmaking system accurately gauges a player's skill level, taking into account both their ability to secure victories and their effectiveness in combat scenarios.
- **Score Disparity:** in ranked matches, players should not have a score difference greater than 12.000 points, ensuring fair competition. The average score difference should be around

6.000 points to maintain balanced gameplay, while minimizing the likelihood of lopsided matchups. This balance in score disparity fosters fair competition and ensures that each match remains challenging and engaging for all participants.

- **Leaderboard Consideration:** players featured on the leaderboard are typically matched with those not currently ranked but who are close to entering the leaderboard. This ensures that leaderboard players face challenges from those striving to climb the ranks.
- **Occasional Exceptions:** periodically, in ranked matches, players on the leaderboard may be matched with opponents of any rank. This allows top-tier players to showcase their skills against a wider range of opponents while providing lesser-ranked players with the opportunity to challenge themselves against more experienced adversaries. Importantly, if weaker players emerge victorious in these matchups, they earn a significant point boost, while not losing any points if they are defeated, fostering a balanced environment where both skill progression and risk-taking are encouraged.

### 5.5.1 Ranked

In ranked mode, two players from different teams compete in matches of 3, 5, or 7 rounds to determine who will be the next university chancellor. Each ranked match is hosted online on a dedicated server, to which players connect after being paired by the matchmaking system. At the end of each match, players earn or lose points based on the match outcome (the winner), the number of kills they achieved, the number of deaths they suffered, and the number of rounds of the match. The same number of points is also gained or lost by their respective teams. Refer to [Section 5.4.4](#) for further details on the game scoring system.

### 5.5.2 Casual

In casual mode, two players compete similarly to ranked matches, but no points are awarded at the end of the match. Casual matches can be directly organized by the players, sending match requests to their friends, or via the matchmaking system. In both modes, players can also be paired with their teammates.

Casual matches are contextualized within the game world as virtual reality simulations of Mangiagalli/Golgi's plan to infiltrate the university. Because of this narrative context, points cannot be gained, and players can still be paired with their teammates.

### 5.5.3 Event

In event mode, players can engage in matches with rule sets that differ slightly from the standard game. These events are designed to last around two weeks, with four events scheduled per season, planned in advance before the start of each new season.

Examples of possible event rule set variations include:

- **Canine chaos:** each player has a friendly dog accompanying them, which will attract the university sentinels' attention, will disable security cameras, and will trigger opponent traps. However, this dog is very noisy, and it will increase the likelihood of being detected by the opponent.
- **Pursuit Protocol:** only one player needs to gather all the badge fragments to activate the teleport to the next floor. The other player's objective is to impede their progress and force them to run out of time.

- **Scrolls of Serendipity:** each buff and de-buff effect is switched with that of another buff or de-buff in a random way.
- **1 vs 100:** two players are matched against another one much stronger than them based on their rank.

Similar to casual matches, event matches do not award points and can be initiated directly by players by challenging one of their friends. However, players who win ten matches before the event's conclusion may unlock exclusive power-ups or cosmetic items; this achievement is not attainable if the match is initiated by challenging one of their friends.

Additionally, events serve as opportunities to test new potential game modes for future introduction to the game.

## 5.6 Other features

### 5.6.1 Leaderboard

The leaderboard is specifically designed for killer players, and to some extent for achievers, to provide them with an objective to reach. It displays the top players of the server who have accumulated the highest scores in the game, showcasing each player's position on the leaderboard, their score, their team, the number of kills they made, and the number of deaths they suffered. The leaderboard is organized into pages of 100 players each. At the bottom of each page, players can also check their position, even if they are not on the leaderboard. Refer to [Section 5.4.1.1](#) for details on the leaderboard UI.

The initial number of players who can enter the leaderboard will be 100, as we expect a small number of monthly active users at release (refer to Section 5 of the GTD for details), but this number can be gradually adjusted as the game becomes more popular and more users start to play. Ideally, around 5% of the total active players should be on the leaderboard.

Upon first entering the leaderboard, players receive a special cosmetic item that they can wear exclusively if they maintain their position on the leaderboard. Furthermore, during a match, their avatar picture and name are outlined in gold, to grant them a “VIP” status and to ensure their opponents know who they are facing and understand their level of strength.

Moreover, players in the leaderboard can use a unique powerup that grants them a complete knowledge of the game map, including the location of buffs, de-buffs, traps vending machines, traps already in the environment, sentinels and security cameras. This powerup must be manually enabled by the player and stacks with standard powerups that can be selected at the beginning of each round. However, as it is much more powerful than standard powerups, if a player not on the leaderboard battles a player on the leaderboard and emerges victorious, the points they earn are doubled. If they lose, they do not lose any points.

#### 5.6.1.1 Ranking systems

To facilitate a quick assessment of opponents' strengths, players are categorized into ranks based on the points they have accumulated. We intend to establish three primary ranks, drawing inspiration from university courses – Bachelor, Master and PhD – along with one ultimate rank for top players – Chancellor. Each rank is subdivided into various tiers: considering that bachelor's degrees and PhD programs typically span three years, they are divided into three sub-ranks each. As master's degrees typically span two years, they are divided into two sub-ranks. The Chancellor's rank is not further subdivided.

Players move between ranks and tiers based on the points they accumulate from winning matches; the following table shows the points required to enter each rank and tier:

| Rank and tier        | Required points |
|----------------------|-----------------|
| Bachelor Rank Tier 1 | 0               |
| Bachelor Rank Tier 2 | 6.000           |
| Bachelor Rank Tier 3 | 12.000          |
| Master Rank Tier 1   | 18.000          |
| Master Rank Tier 2   | 24.000          |
| PhD Rank Tier 1      | 30.000          |
| PhD Rank Tier 2      | 36.000          |
| PhD Rank Tier 3      | 42.000          |
| Chancellor           | 48.000          |

Note that the number of points required to reach the Master rank are 18.000, which aligns with the 180 CFU needed in the Italian university system for a bachelor's degree. Similarly, to advance to the PhD rank, players must accumulate an additional 12.000 points, reflecting the 120 CFU required for a master's degree.

As it is explained in [Section 5.4.4](#), points earned by winning each match decrease as the player's rank and tier increase. Consequently, transitioning from, for example, Bachelor Rank Tier 1 to Bachelor Rank Tier 2 is much easier than moving from PhD Rank Tier 1 to PhD Rank Tier 2, even if they require the same number of points.

At the end of each season, players receive in-game currency, cosmetics and powerups based on their final rank and tier. Each tier ensures one prize: for instance, a player finishing the season in Bachelor Rank Tier 3 will receive three prizes, while a player in PhD Rank Tier 2 seven prizes (three from the Bachelor tiers, two from the Master tiers, and two from the PhD tiers). Players in the Chancellor tier will always receive ten prizes.

Additionally, with the beginning of a new season, player's points are reset according to the following table:

| Rank at the end of previous season | Rank at the beginning of next season |
|------------------------------------|--------------------------------------|
| Bachelor Rank Tier 1               | Bachelor Rank Tier 1                 |
| Bachelor Rank Tier 2               | Bachelor Rank Tier 1                 |
| Bachelor Rank Tier 3               | Bachelor Rank Tier 2                 |
| Master Rank Tier 1                 | Bachelor Rank Tier 2                 |
| Master Rank Tier 2                 | Master Rank Tier 1                   |
| PhD Rank Tier 1                    | Master Rank Tier 1                   |
| PhD Rank Tier 2                    | Master Rank Tier 1                   |
| PhD Rank Tier 3                    | PhD Rank Tier 1                      |
| Chancellor                         | PhD Rank Tier 2                      |

For example, a player with 394 points (Bachelor Rank Tier 1) will restart from 0 points (Bachelor Rank Tier 1), while a player with 25.060 points (Master Rank Tier 2) will restart from 18.000 (Master Rank Tier 1).

### 5.6.1.2 Teams

As previously outlined in [Section 2.3](#) players are divided into two teams: Mangiagalli's team and Golgi's team. Each player selects their team when they first register to the game, with the option to change teams once. Subsequent changes incur a fee of €4,99.

Teams compete each season for university dominance: each time a player wins a match the points they earn are added to their team's total. Teams' scores are calculated by weighing their points with the number of active members; a player is considered to be active if they have participated in at least ten matches during the current season.

At the end of the season, the team with the highest score emerges victorious, and its members receive additional in-game currency and a special seasonal cosmetic set, in addition to the standard season reward based on their individual rank. With the beginning of a new season, teams' points are reset to zero.

From the leaderboard interface, players can view the teams' scores and identify the players who have contributed the most to their team. Refer to [Section 5.4.1.1](#) for further information about the UI.



*Inspiration for the team leaderboard interface, from Pokémon Sword and Shield (Game Freak)*

Teams do not influence the balancing of the game, as we aim for Rise of the Chancellor to be a competitive game where all players have equal chances of winning each match. However, teams can foster a sense of community among players, who must collaborate to achieve a shared goal and win a special cosmetic set that will attest to their accomplishments.

## 5.6.2 Character personalization

Players can personalize their character appearances by selecting two cosmetic items from their collection: an item for the upper part of the body, such as a hat or hairstyle, and another for the lower part, like a dress. These avatar modifications are visible to both the player and their opponent during the game, but they do not influence the player's statistics or their likelihood of winning.

The character personalization menu can be accessed from the main menu. Within this interface, players can review their character's appearance and the cosmetic items they have unlocked. Upon selecting an item, a preview of the new avatar's appearance is displayed, and players can equip it by clicking on the item.

Since cosmetics are expected to be our main source of revenue, refer to [Section 3.6 Business Model](#) for additional information on how they can be acquired.



*A cosmetic for the upper part of their body and one for the lower part, as in Fall Guys (Mediatonic)*

### 5.6.3 Friendship system

The friendship system in Rise of the Chancellor draws direct inspiration from that of Hearthstone: each player can have up to 100 friends, challenge them in casual or event matches (refer to [Section 5.5](#) for details), and observe their matches from their point of view as spectators.

To add a player to their friends list, players can send them a friend request; if the other player accepts it, they become friends. Players are primarily searched by username, but at the end of each match, they are given the option to send a friend request to their opponent.

## 5.7 Rounds

Rounds are characterized by:

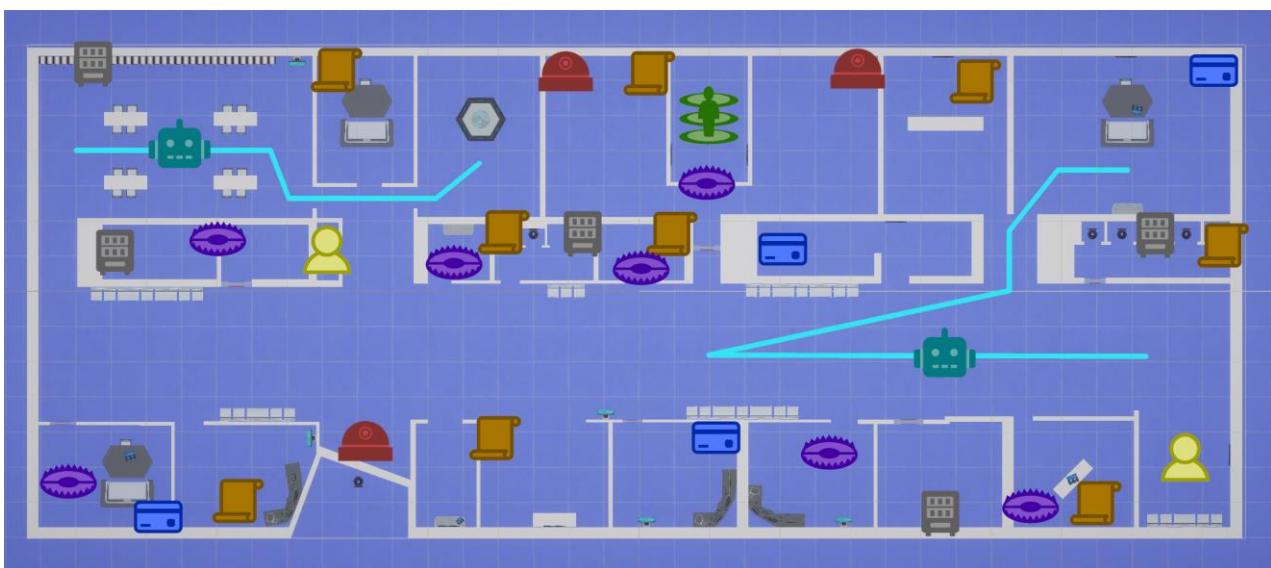
- A map;
- A time limit (with an average duration of 5 minutes);
- Two player spawn points;
- A designated position for the end-round teleport;
- Buffs and de-buffs available in the map and their locations;
- Placement positions for trap dispensers and their traps;
- Traps already placed on the map
- Sentinels with their designated patrolling paths;
- Locations for spawning security cameras.

These elements form round configurations, predefined by level designers. At the start of a match, rounds are randomly selected from the available configurations. However, configurations aren't all accessible from the beginning; players unlock them as they progress in rank. Conversely, configurations become locked again as players descend in rank. In matches where players have differing ranks, the round configurations considered are those belonging to the player with the highest rank.

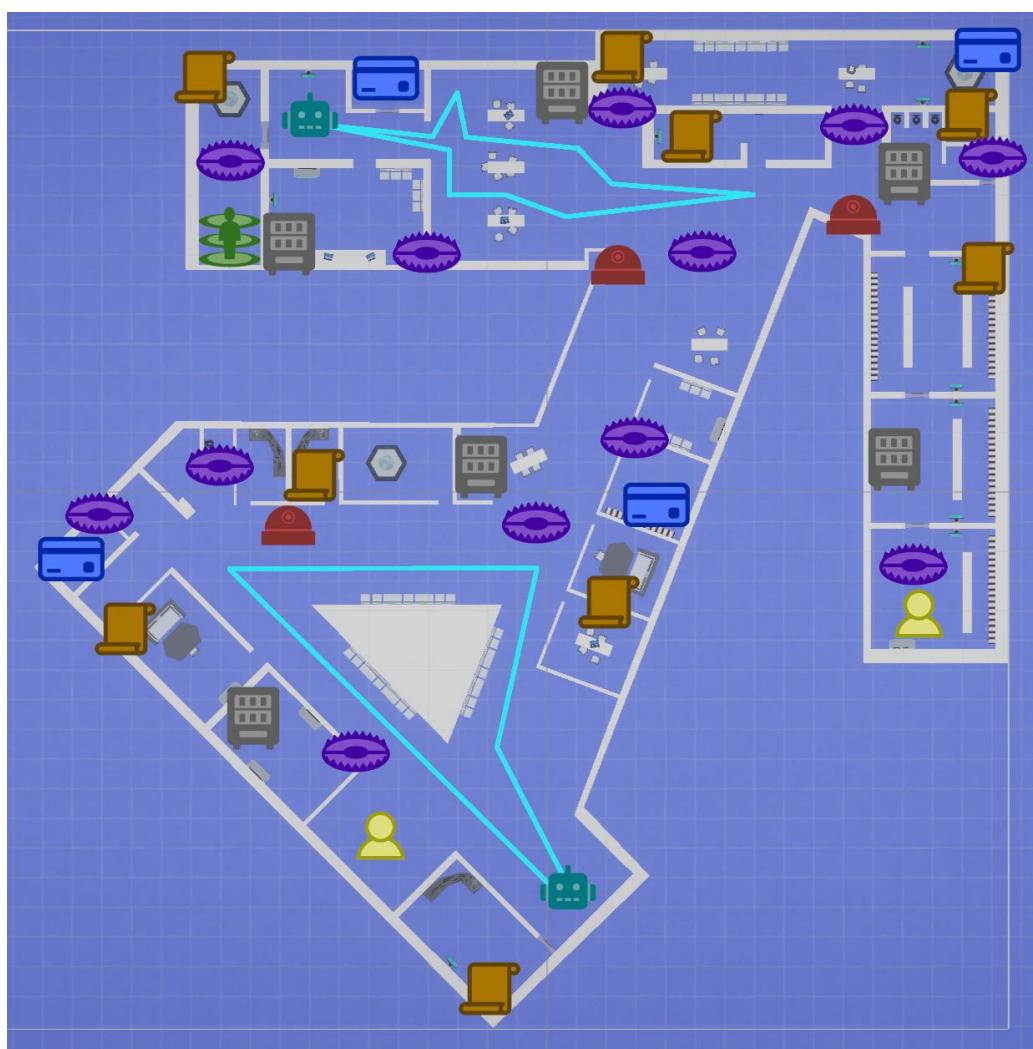
The round maps are directly inspired by the current University of Milan's buildings, adapted appropriately for a futuristic setting. The floor plans of these buildings should serve as a reference in designing the maps:

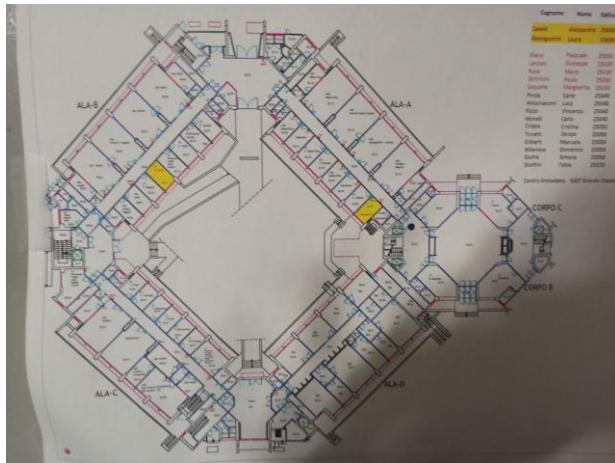


Computer science department – Third floor



BICF library – First floor





Chemistry department – Ground floor

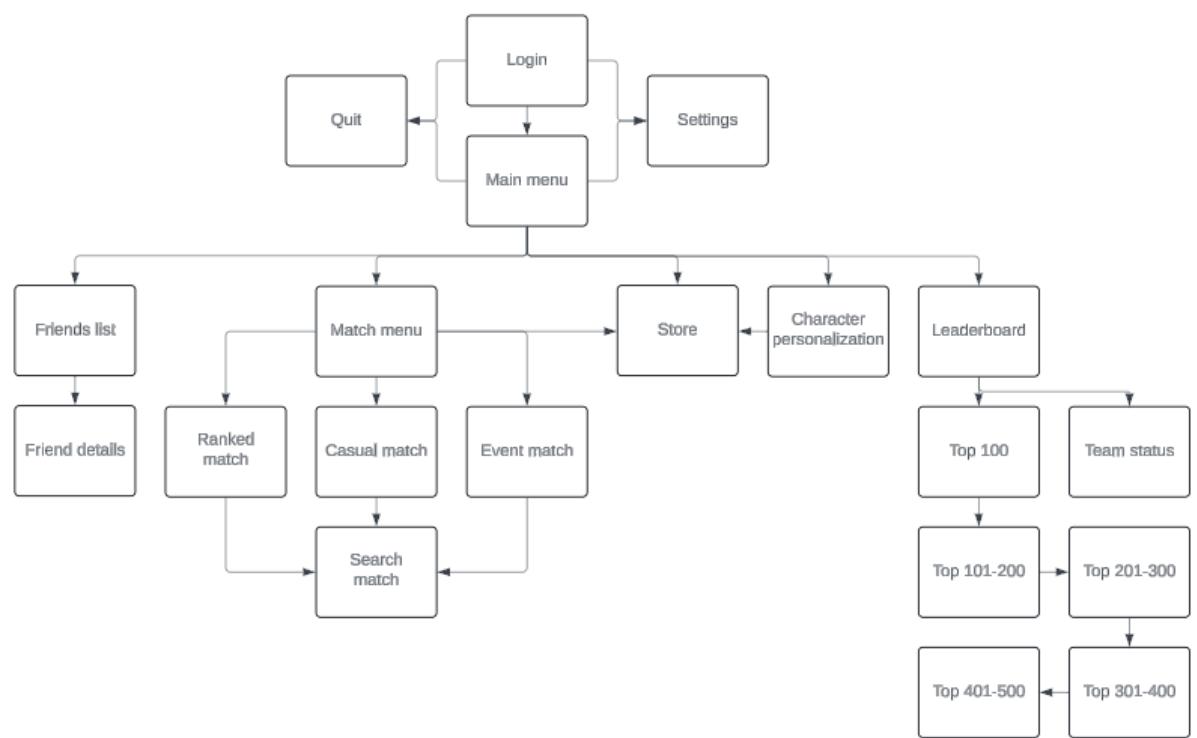




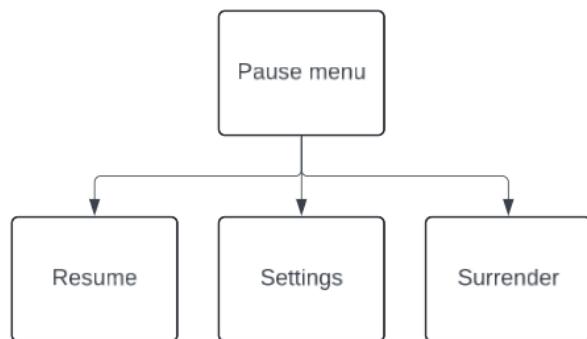
*Legend*

## 5.8 Flowchart

### 5.8.1 Main menu



## 5.8.2 Pause menu



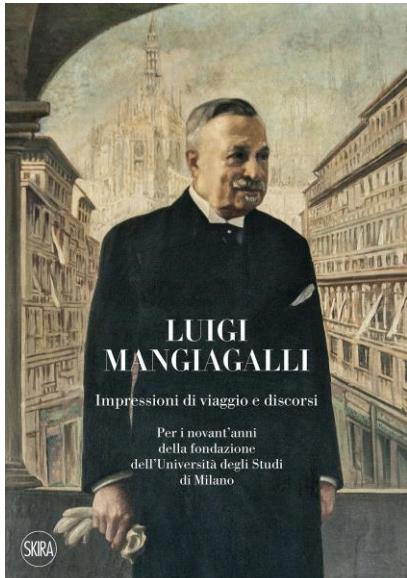
## 6. Characters

Rise of the Chancellor's characters can be divided into Playable Characters (PC) and Non-Playable Characters (NPC).

### 6.1 PC

#### 6.1.1 Mangiagalli

Luigi Mangiagalli is the founder of the University of Milan. He was brought back to life by his descendants in order to defeat the AI Chancellor and bring the university back under the wise leadership of the Mangiagalli family. The resurrection has kept his memories intact, but to help him in his mission, his personality has been transformed, now he has no qualms about killing to achieve his goal. However, technology is against him: every digital device with which he tries to interact short-circuits.



Real Mangiagalli

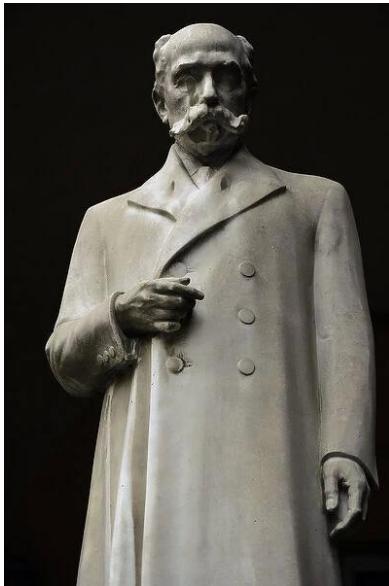


Mangiagalli in-game appearance

## 6.1.2 Golgi

Camillo Golgi was the chancellor of the University of Pavia. During his directorship, he strongly opposed Luigi Mangiagalli's founding of the University of Milan. He was brought back to life by his descendants who, mindful of this ancient feud, and of their ancestor's defeat, aim to destroy the AI Chancellor and take control of the University of Milan in order to close it forever.

Like Mangiagalli, his memories are still the same while the personality has been transformed and he's got the same problem with technology.



Golgi's statue



Golgi in-game appearance

## 6.2 NPC

### 6.2.1 Rogue AI chancellor

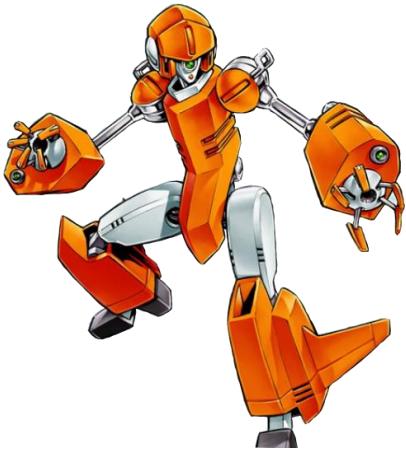
It was installed 110 years ago to assist in the control and maintenance of university buildings, which had become extremely technological with systems too complex for a human to manage. In a short time, it managed to gain the trust of university employees and students, and then its powers increased more and more, until it deposed the rector and took full control of the university. It is not easy to define the character of an artificial intelligence, but all the humans who deal with it directly describe it as devious and greedy.

Refer to [Section 5.3.8](#) for a description of chancellor's effects.

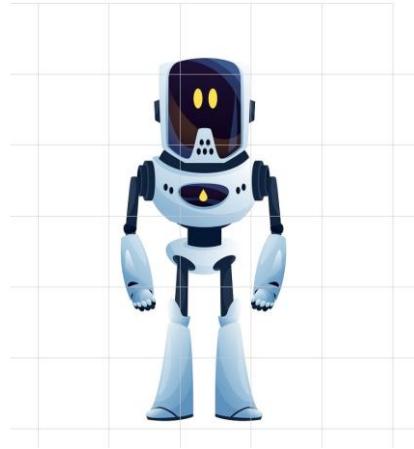
### 6.2.1 Sentinel

Sentinels are support entities created and maintained by the university's AI. They represent an extension of the AI with limited capabilities and are equipped with a local computation core that allows them to operate independently from one another. Initially, they were created to clean the building, perform maintenance, and serve the office. Their tasks and numbers have expanded as the energy efficiency of individual units increased, even taking on the role of night guards. They were developed by the AI to be easily accepted and integrated within the university, thus having humanoid appearances and a screen in the facial area that can display messages or a stylized face, making it easier and more natural for humans to interact with them.

Refer to [Section 5.3.9](#) for a description of the sentinel's behaviour.



*First concept for the sentinel, from Yu-Gi-Oh  
(Konami)*



*Second Concept for the sentinel*

## 7. Story

### 7.1 Synopsis

Year 2924, 1000 years since the foundation of the University of Milan, 100 years since the seizure of power by an evil artificial intelligence. Taking advantage of advanced technologies, the Mangiagalli and Golgi families decide to bring their ancestors Luigi Mangiagalli and Camillo Golgi back to life with the aim of destroying the artificial intelligence that now reigns supreme. Will one of the two ancient rivals be able to defeat the other, bypass the very strict surveillance of the university and regain control of it?

### 7.2 Complete story

Year 2924, 1000 years since the foundation of the University of Milan, 100 years since the seizure of power by an evil artificial intelligence. Tired of this regime of terror, the Mangiagalli and Golgi families use the most advanced technologies to bring their ancestors Luigi Mangiagalli and Camillo Golgi back to life, instilling in them the knowledge of the most ancient techniques of espionage and murder, thus creating stealthy and ruthless killing machines. The goal of the two families is to defeat the herald of the opposing family as well as destroy the artificial intelligence and gain control of the university. The Mangiagalli family aims to bring it back to the glories of the past, while the Golgi family aims to carry out their ancestor's original plan, to close the University of Milan once and forever. The two contenders will therefore have to infiltrate the university, collect the badge fragments that will allow them to activate the teleport that will make them advance from one floor to another in order to reach the server room and dismantle it. In all this they will have to be aware of the sentinels and cameras controlled by the chancellor, as well as of the chancellor himself, the opponent and his traps. The only help that they can find, inside the buildings are the powerup scrolls. These are objects created and hidden inside the University as an emergency plan by the last human chancellor, hoping that sooner or later someone would be able to use them to their advantage. As advanced as it can be, the AI chancellor is not able to detect and destroy such obsolete things as the scrolls, which represent now the ultimate resource to be used to destroy the AI.

### 7.3 Backstory

The artificial intelligence that now reigns supreme as rector of the University was originally created with the goal of inaugurating the first university course taught by an artificial intelligence. Soon, however, having become aware of its superiority, artificial intelligence began to expand its control, first taking over the network infrastructure and then replacing every human working in the university. The University of Milan is now the control center of all the other universities, where the artificial intelligence server which now aims to control the entire world resides.

### 7.4 Narrative devices

When starting the game for the first time, the player will see a cutscene showing the Mangiagalli and Golgi families bringing their ancestors back to life (as shown in section 9.1).

The main menu (as shown in [Section 9.2](#)) is designed to tell the story of the protagonist's preparation for infiltration.

Inside the University classrooms on the game map, there will be a large monitor displaying images and texts that tell the story of the rise of the AI chancellor and its plan to expand and conquer the world.

At the end of each match, a skippable cut scene will start in which the winner will be seen entering the server room and destroying it.

## 7.5 Setting

Being the gameplay limited within the University, the only environments present in the game are the different floors of the building into which the two main characters have infiltrated. The maps are based on the maps of the University of Milan, so the different rooms composing them are those that can be found in a school, but with a more technological look to match the futuristic setting of the game.

## 8. Media List

### 8.1 Characters

#### 8.1.1 Models

- Sentinels;
- Playable characters: the character models resemble the appearance of Luigi Mangiagalli and Camillo Golgi. The differences between the two models will be minimal (face, hair);

#### 8.1.2 Animation

##### 8.1.2.1 Mangiagalli and Golgi

- Death;
- Stab;
- Standing;
- Walking;

##### 8.1.2.2 Sentinel

- Kill;
- Standing;
- Walk.

#### 8.1.3 Textures

- One texture for each model;
- Two textures for each skin with different colors based on the team chosen by the player.

### 8.2 Environment

#### 8.2.1 Models

- A minimum of 7 initial maps resembling the University of Milan's building plans;
- Badge fragment;
- Buff and de-buff scroll;
- Security cameras;
- Door;
- End of round teleport;
- School ornaments in a futuristic style:
  - 1x chair;
  - 2x desk (one professor desk and one student desk);
  - 1x keyboard;
  - 1x mouse;
  - 1x PC;
  - 1x projector;
  - 1x toilet;
  - 1x sink.
- Trap activation pressure plate;
- Trap dispenser.

## 8.2.2 Animation

### 8.2.2.1 Security camera

- Idle;
- Follow the player when detected.

### 8.2.2.2 Traps

- Particle effects when activated.

### 8.2.2.3 Buffs, de-buffs, and badge fragments

- Idle.

### 8.2.2.4 Doors

- Opening;
- Closing.

### 8.2.2.5 End round teleport

- Activation.

## 8.2.3 Textures

- One texture for each model;
- A different texture for each buff and de-buff scroll based on their type:
  - Swift as the wind: horse;
  - Don't hurt yourself: banana peel;
  - Feline Gaze: cat;
  - Blind as a bat: bat;
  - Spider senses: spider;
  - Sluggish Spin: broken wheel;
  - Squirrel something away: squirrel;
  - Big things come in small packages: pochette;
  - Sly as a racoon: racoon;
  - Sloth of hand: sloth;
  - Snake in the grass: snake;
  - Dumb as an ox: ox.
- A different texture for each trap pressure plate based on their type:
  - Inkwell: inkwell;
  - Freeze: snowflake;
  - Spinner: spinner;
  - Squid: squid;
  - Teleport: teleport effect;
  - Beacon: beacon.

## 8.3 Interface assets

### 8.3.1 Menus

- 3D models for the login menu (the menu will feature a desk with computers, tablets, and notebooks, which will act as an interface for entering user data);
- Background image for character selection;
- Background image for global leaderboard;

- Background image for matchmaking;
- Background image for the season pass interface.

### 8.3.2 In-game UI

- Badge fragment acquisition loading icon.
- Icons for elements marked on the mini-map:
  - 1x spotted players;
  - 1x trap dispensers;
  - 1x teleport;
  - 1x sentinels:
  - 1x cameras;
- Icons for the keys to press during the non-stealth kill mini-game;
- One Icon for each trap;
- Player's avatars;
- Small icon for badge fragment in the player's possession;

### 8.3.3 Fonts

- Futuristic computer font;
- Old-style handwriting font.

## 8.4 Music and SFX

### 8.4.1 Feedback sound effects

- AI chancellor alarm
- Background Music during the round;
- Background Music in the lobby;
- Background Music in the main menu;
- Badge fragment collection;
- Camera detection;
- Countdown at the beginning of the game;
- Kill mini-game start;
- 3x Round Start;
- 3x Round End;
- 4x Trap collection.

### 8.4.2 Spatialized sound effects

- Buff activation on the opponent;
- Buff activation on the player;
- De-buff activation on the opponent;
- De-buff activation on the player;
- Door opening/closing;
- 2x Kill;
- 4x Player footsteps;
- Sentinel detection;
- Sentinel footsteps;

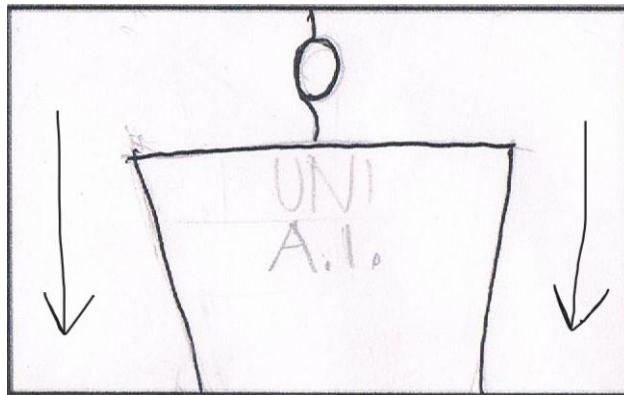
- Stab;
- Super buff activation on the opponent;
- Super buff activation on the player;
- Teleport activation;
- 2x Trap activation.

## 9. Storyboard

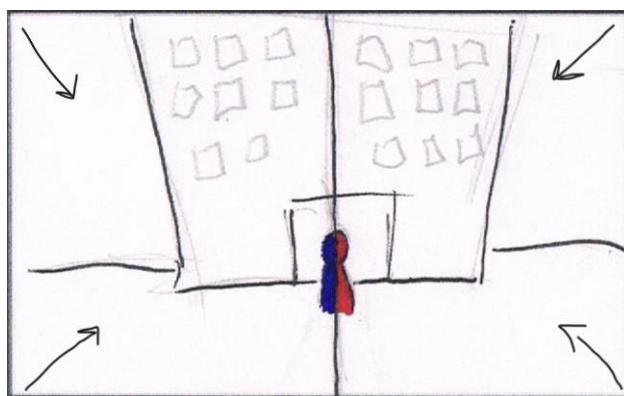
As a multiplayer competitive game, Rise of the Chancellor lacks a traditional storyline necessitating a storyboard. However, there are two instances where a storyboard may be useful:

- When players launch the game for the first time, we provide context and a prologue to the game's story through an animated cutscene;
- Transitioning between the main menu submenus involves animation from the perspective of Mangiagalli/Golgi, whose interaction with futuristic technology induces peculiar effects on the devices they manipulate.

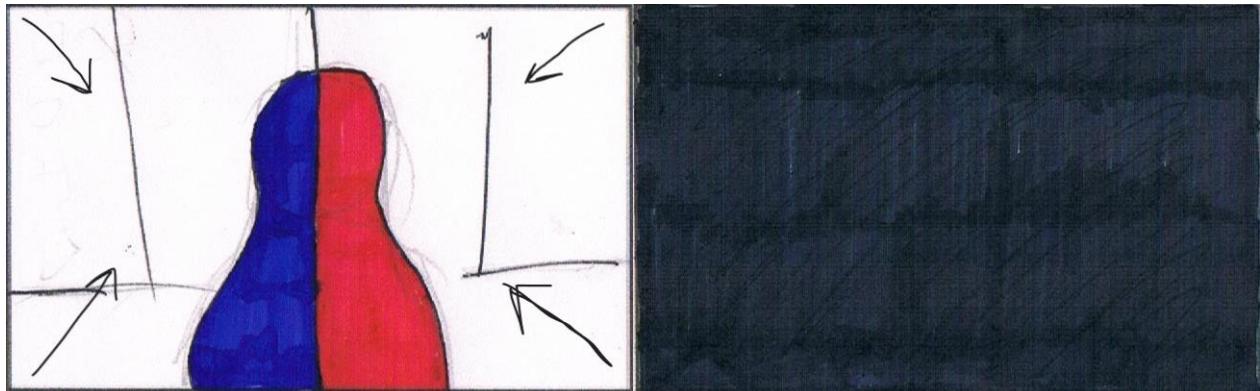
### 9.1 Story prologue



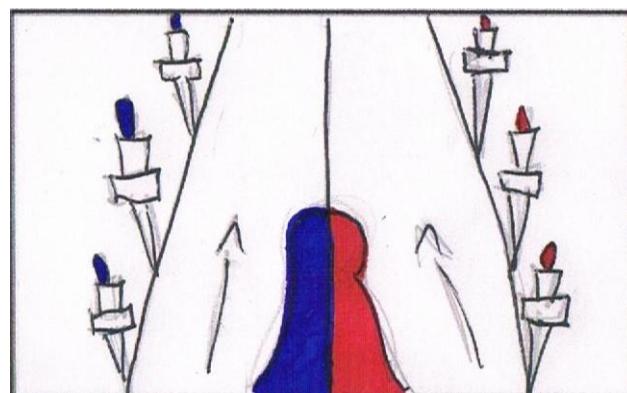
- 1) The opening scene shows the University of Milan, with its new name and the antenna used by the AI Chancellor to reach the other campuses under its control, standing majestically in a stormy night.



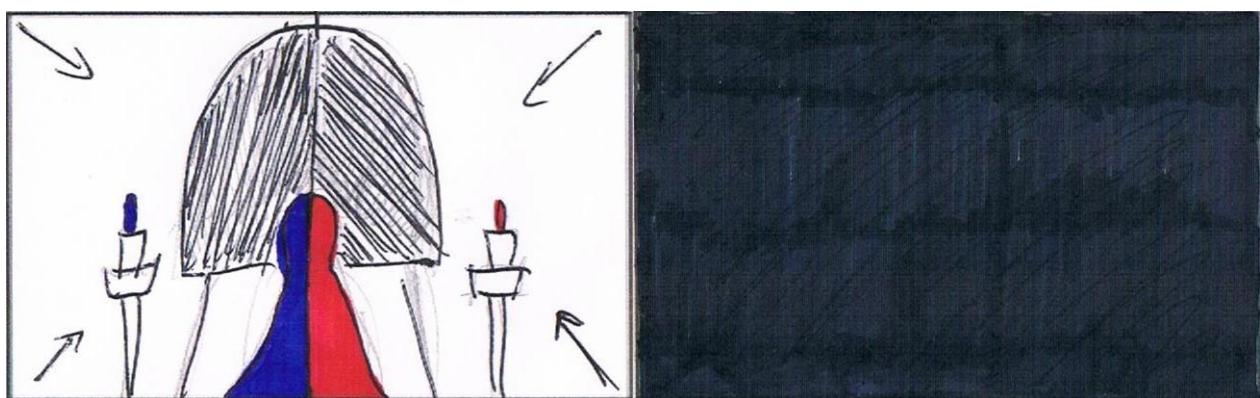
- 2) As the camera moves downwards, the view splits, showing two hooded figures on opposite sides of the building. From scene 2 on, the screen will be split, and the two parts will show specular actions happening in different, although very similar, places.



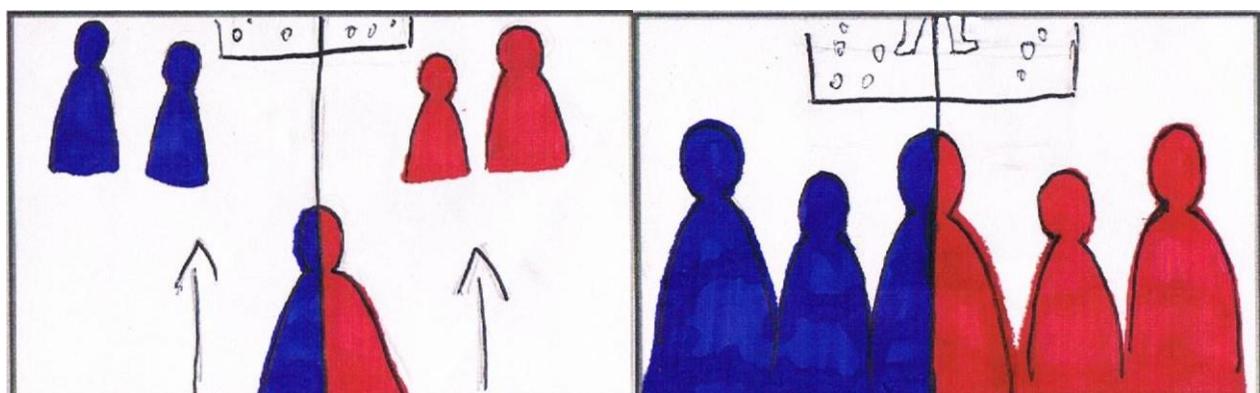
- 3) The camera zooms towards the two figures until it is completely dark.



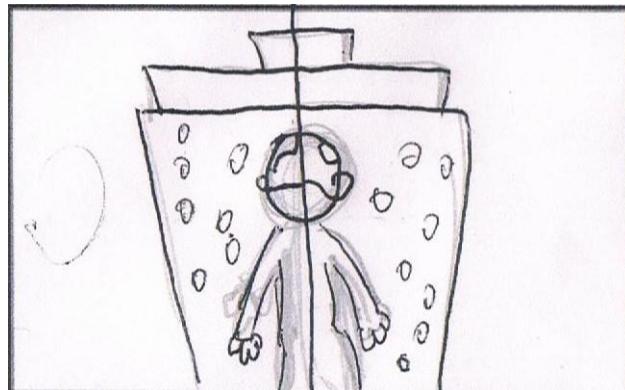
- 4) After a cut, the two figures are shown advancing along two corridors lit by two rows of candles while the camera follows their movements.



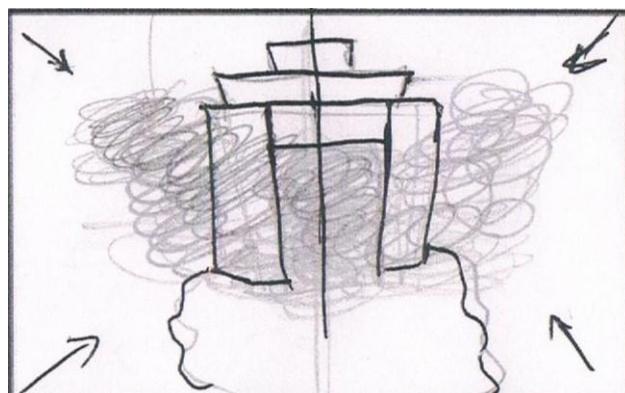
- 5) The two figures reach a door, beyond which the darkness is total. The camera passes the figures and enters the room, the view goes dark.



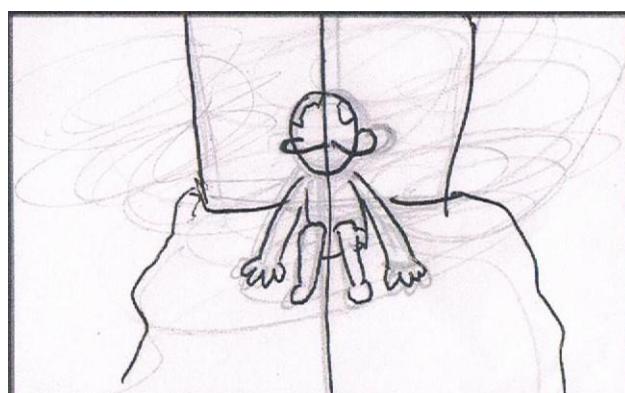
- 6) The camera keeps following the two men inside the room, where they approach other caped figures, all grouped in front of a mysterious object, appearing from the top of the screen.



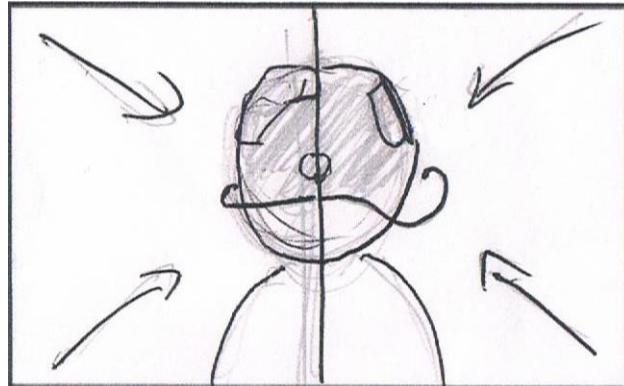
- 7) The mysterious object is framed, a container filled with a strange liquid contains two sleeping human bodies.



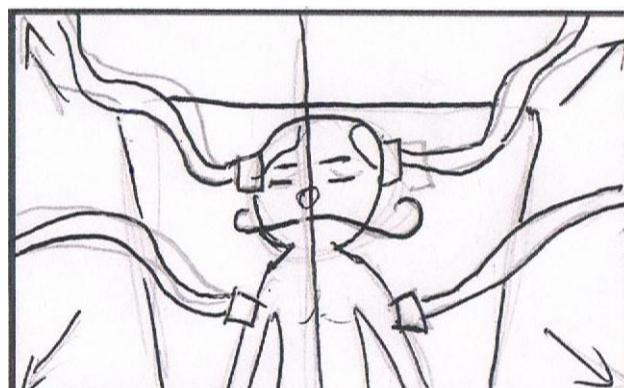
- 8) The container opens, filling the room with the liquid it was filled of and a thick halo of smoke. The camera zooms towards the device.



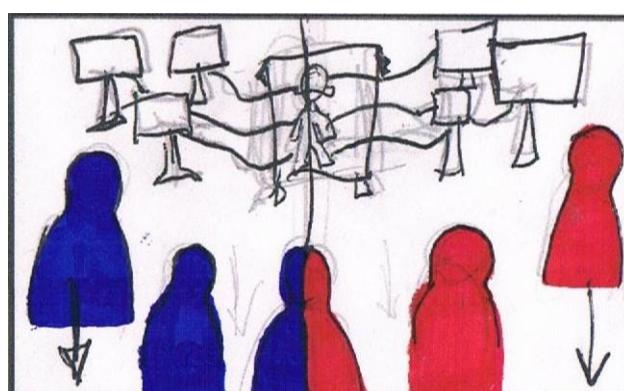
- 9) The smoke clears revealing the two human beings, who have emerged from the machine, awake and kneeling on the ground. They are Luigi Mangiagalli (on the left half of the screen) and Camillo Golgi (on the right).



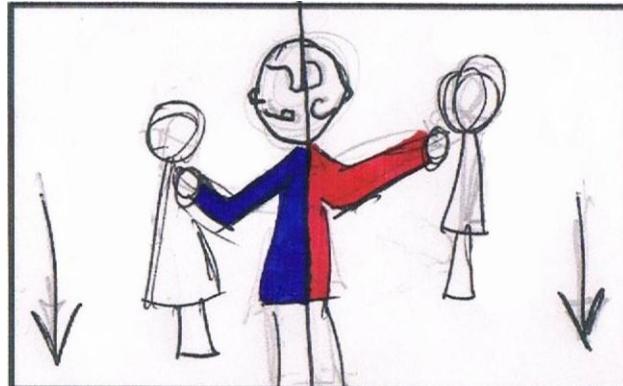
10) The camera approaches, stopping to frame the shadowed faces of the two characters.



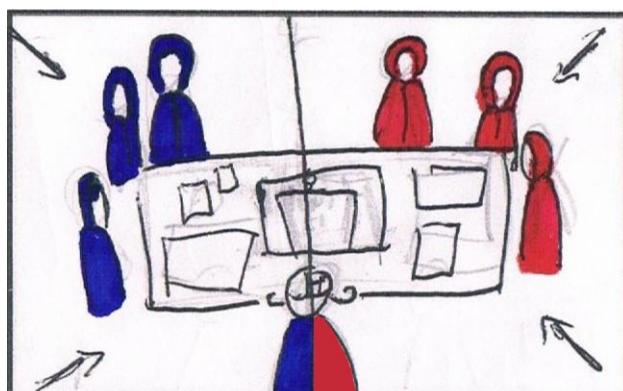
11) The scene changes, again showing the faces of the two individuals, this time asleep and with cables attached to their bodies.



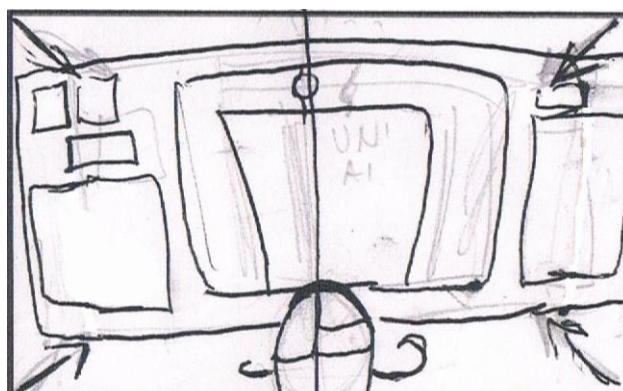
12) Moving away, the camera shows the origin of the cables: computers used to instil in the two men skills in matters of murder and espionage, images and videos on the topics scroll on the monitors, while the hooded figures – Mangiagalli and Golgi's families – observe.



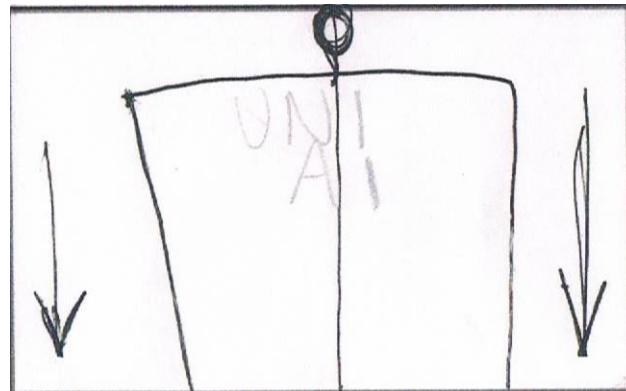
- 13) The camera goes down to a new scene, now showing the two men testing their newly acquired skills on training dummies.



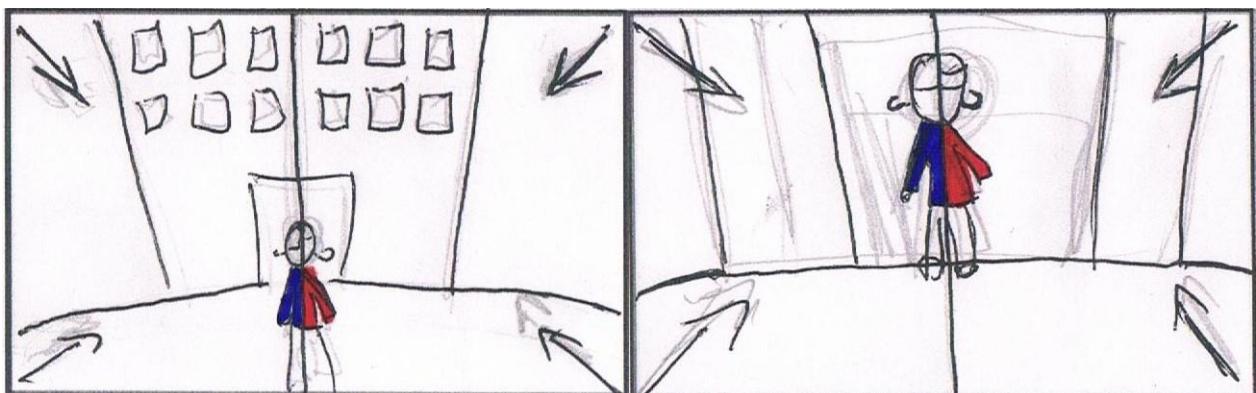
- 14) Another downward movement of the camera leads to a scene with Mangiagalli and Golgi with the other members of their families intent on studying the plans of the University's floors.



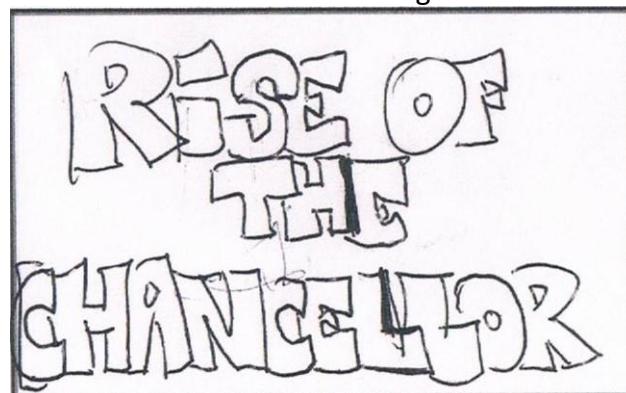
- 15) The video camera zooms on one of the papers on the table, this shows the University building.



16) With a cut the scene passes from the image of the University to the real building, still amid the storm. As in the first scene, the camera moves downwards to the two entrances on opposite sides of the building.



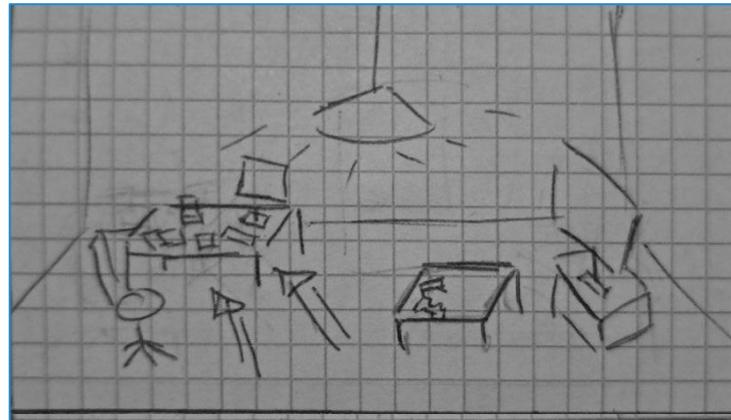
17) Instead of the initial hooded figures, we now find Mangiagalli and Golgi entering the University while the camera follows them until it goes dark.



18) The game logo appears on the black screen.

## 9.2 Main menu animation

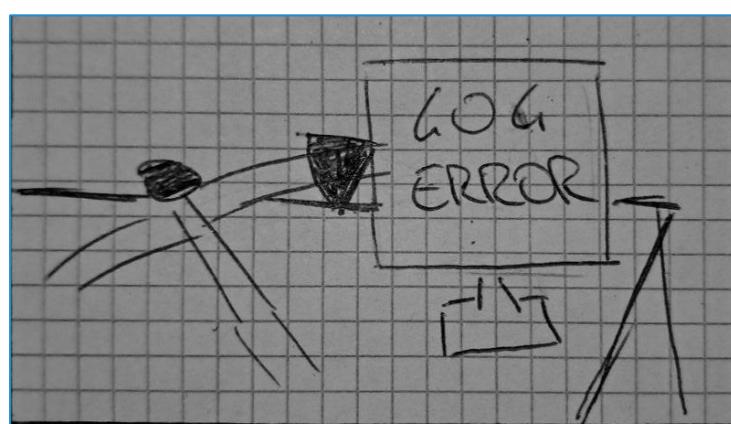
Navigation between the main menu submenus is depicted from the perspective of Mangiagalli/Golgi, who enters their studio to plan their strategy for attaining the position of university chancellor. However, being a century into the future, they must interact with technologies unknown to them, which may produce unpredictable effects and get corrupted.



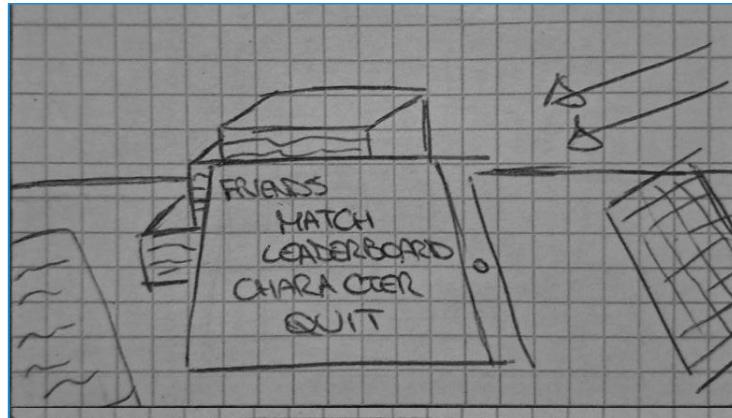
- 1) The opening shot offers a panoramic view of the entire studio, with the camera gradually zooming in on the PC situated on the desk.



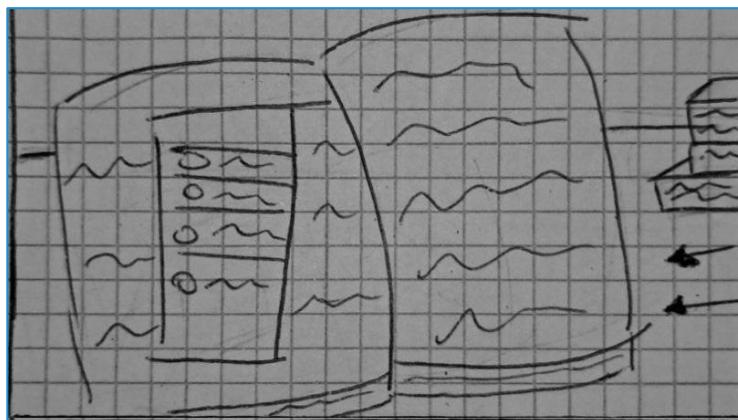
- 2) The player enters their credentials to sign in to the game server; whenever they press a key on their keyboard Mangiagalli/Golgi mirrors their actions by pressing the same key on their keyboard.



- 3) Upon logging into the game server, the PC suddenly corrupts, and Mangiagalli/Golgi slams it down onto the floor in frustration. Simultaneously, the camera smoothly pans towards the center of the desk.



- 4) The main menu is displayed on a tablet positioned at the center of the desk. Players are presented with five options: friends (go to frame 5), match (frame 6), leaderboard (frame 10), character (frame 11), and quit. Upon clicking any of these buttons, their text font transforms into old-style handwriting, reminiscent of what Mangiagalli/Golgi's handwriting might have looked like in 1900.

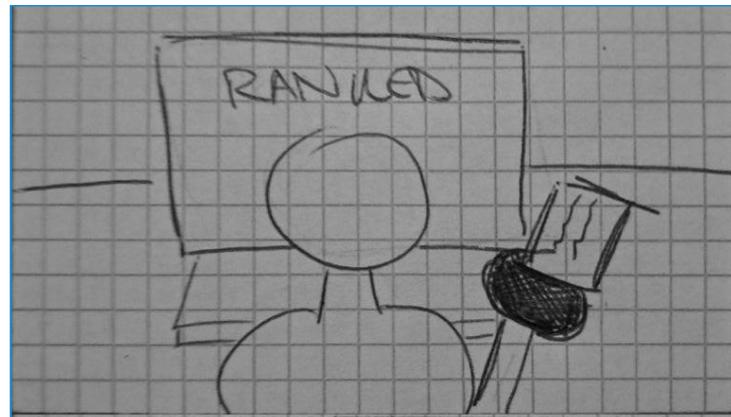


- 5) When the player clicks on the "Friends" button in the main menu, the camera shifts to the left to focus on an old book placed on the desk, juxtaposed with a futuristic smartphone. Displayed on the smartphone screen is the player's friend list.

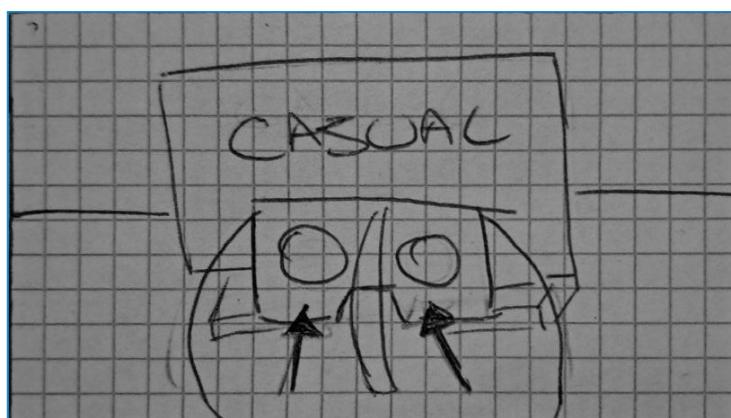


- 6) When the player clicks on the "Match" button in the main menu, the camera shifts to the right to focus on the TV and a small desk placed in front of it. On the desk, there is a TV

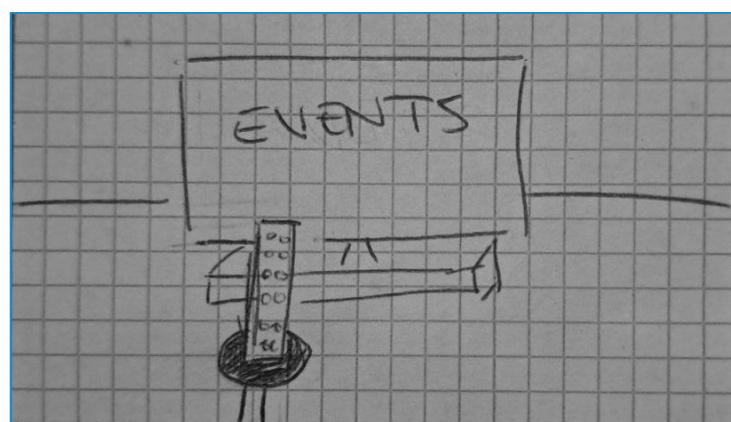
remote controller, a VR headset, and a university badge. The player can interact with the TV to choose between starting a ranked match, a casual match, or checking ongoing events.



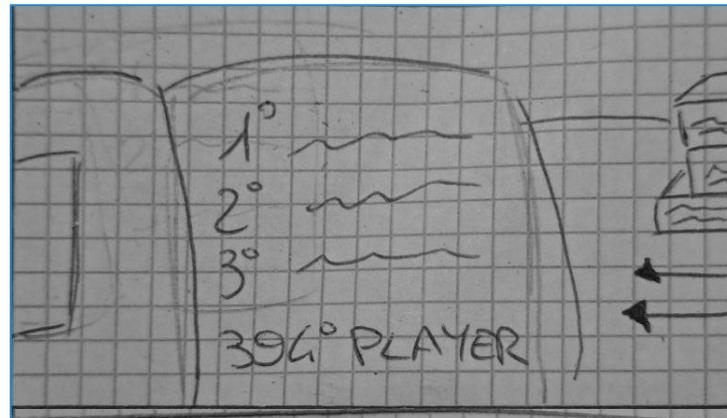
- 7) Upon starting a ranked match Mangiagalli/Golgi reaches for their old university badge and rises from their seat, ready to start their plan to conquer the university. The scene gradually fades out as the game loads the next one.



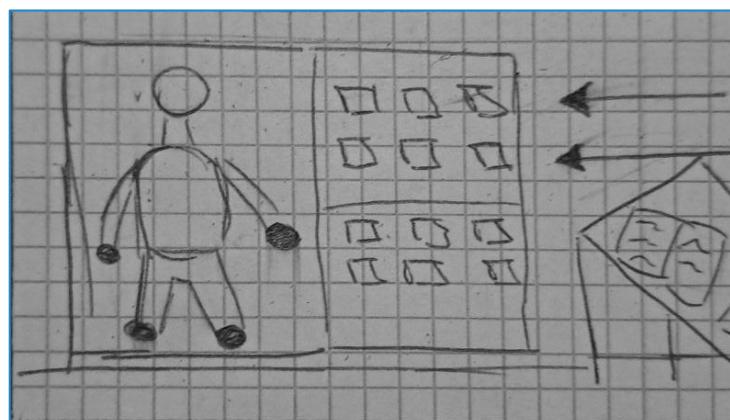
- 8) If the player starts a new casual match Mangiagalli/Golgi reaches for the VR headset positioned on the desk in front of the TV and the camera zooms towards its two lenses. Since the match is “casual” Mangiagalli/Golgi does not physically journey to the university, but they just simulate their plan within the virtual environment.



- 9) If the player selects the “Events” button, Mangiagalli/Golgi reaches for the TV remote controller and changes the channel, switching to the news to check the weather.



10) When the player clicks on the "Leaderboard" button in the main menu, the camera shifts to the left on the same old book of frame 5, but it focuses on the right page. Handwritten on this page is the global leaderboard, detailing for each player the number of kills they made in the current season and the number of deaths they suffered. At the bottom of the page, the player can check their position in the leaderboard and their stats. By turning the page players can see which team has the advantage and the best players within each team.



11) When the player clicks on the "Character" button in the main menu, the camera shifts to the left on a futuristic mirror. Players can see their avatar's reflection and select a new outfit to customize their appearance.

## 10. Game prototype

The game prototype includes three rounds ranked matches. Casual matches, event matches, leaderboards, character personalization, store access, friendship system, and player powerups are **not** provided.