**CECS 343:   
Mythinati Game**

**Group A**

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# Document Revision History

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# Introduction

## Purpose

The purpose of this document is to collect and define the needs, purpose and features of the digitized form of the Illuminati board game. It serves as the highest-level document from which all other documents derive their objectives.

## Scope

* + 1. This document applies to the digitized form of Illuminati created by Group A, which will be designed to work on Windows 10 PCs. Windows 10 PCs include those with an Operating System of 32/64 bit, a processor with Intel Core i3 2.5 Ghz or greater, a memory with 4 or 8 GB RAM, and a hard drive of 12 GB or more space. A working mouse, keyboard, and monitor are required for the game to be played.
    2. This project will be an entirely self-contained game application to provide entertainment to users.

## Definition, Acronyms, Abbreviations

* + 1. GB - Gigabytes (referenced in 1.2.1)
    2. RAM - Random Access Memory (referenced in 1.2.1)

## Reference

* + 1. [Rulebook] 1981 Illuminati (boardgame), Jackson.
    2. Select Your Photon Unity Package. (n.d.). Retrieved May 4, 2020, from <https://www.photonengine.com/en/pun/pricing>
    3. Technologies, U. (n.d.). Powerful 2D, 3D, VR, & AR software for cross-platform development of games and mobile apps. Retrieved May 4, 2020, from <https://store.unity.com/#plans-individual>

## Overview

This vision document contains the scope of both problems and solutions with digitizing the Illuminati board game, this document is organized into sections providing an overview of the positioning, stakeholders, features, and other requirements of the project.

# Positioning

## Business Opportunity

* + 1. Board games have been a classic way to spend time with friends or family during a social gathering. As we move into an increasingly digital and busy world, it may be difficult for people to meet up in person, especially with the COVID-19 Safer at Home order in the United States. By creating an online version of a much-loved board game, it may bring additional connection opportunities to friends who meet regularly to play strategy games like *Illuminati.*
    2. This digitization can bring about a wider scope of those who play online games, reaching both younger and older users as we stay home to flatten the curve.

## Problem Statement

* + 1. There is a problem regarding the lack of digital versions of board games which may reduce the reach of younger generations of game players. In addition, those who have been in gaming circles prior to the Safer at Home order in the United States may have a hard time playing their beloved games together if one person had the physical game and brought it to the meetings that people had.
    2. By providing a digital game that people can play together, we hope to bring another game and connecting opportunity to the table for people to have while social distancing.

## Product Position Statement

* + 1. This product intends to connect both physical and digital gamers alike. For the adult who is looking to try something new or the adult who has engaged with games for years, Mythinati is a digital game that seeks to entertain and engage with the minds and motives of any player. Unlike other digitization of board games, Mythinati will have a twist of themes and characters that pertain to mythologies within different cultures.

# Stakeholder and User Descriptions

## Market Demographics

* + 1. The main key market demographic would include those who are looking for a casual multiplayer game, also known as party games.
    2. The first target segment are players who are playing for the nostalgia of the original *Illuminati* game. These players will most likely be middle-aged, given the time that the original game was released.
    3. The second target segment are players who are looking for a new game to play. These players are most likely experienced computer users and most likely younger than the first target segment.
    4. The initial market size of the older players will be smaller than the younger players because they may not be as engaged with the current online gaming community. In addition, this group does not have as many members because the number of people who engaged with *Illuminati* when it was first released may be specific to a generation.
       1. The older players may also potentially have more opportunity to purchase downloadable content, game expansions or other products.
       2. The initial market size of the younger players will be larger than the older players because these are people who we assume to be gamers. Their growth will be faster because they will have multiple connections with other gamers online to be able to share and play this game together. This is since younger people are more tapped into the online community and will be able to continue the game’s growth.
    5. In general, the game will be free for all users. However, if there are released downloadable content or additional features, users may invest a small amount of money to have the add-ons in their version of the game.
    6. Steve Jackson has a big reputation within the gaming community due to their expansive collection of board games. An example would be the game *GURPS*, also known as *Generic Universal Role-Playing System*. Steve Jackson Games is well known for having games with good rules and fun gameplay.
       1. Our reputation as aspiring video game creators will ride on whether players will enjoy their gameplay on our system at the time of release.
    7. We hope that our reputation would be one of integrity and reliable game play. We wish to take the integrity of the fundamentals of the *Illuminati* game while we translate the game to include our special theme of mythologies.
    8. This product will support our goals of building our reputation as game developers if we implement the game with integrity, carefulness, and ethics.

## Stakeholder Summary

* + 1. **Name:** Group A  
       **Represents:** Rachel Pai, Grayson Hill, Glizelle Mapa  
       **Role:** Designers and Developers of the project
    2. **Name**: Professor Giacalone  
       **Represents**: Executive Interests in the project

**Role**: Provides project oversight and guidance along with final say on project design

* + 1. **Name**: Users   
       **Represents**: Who the game is catered for.  
       **Role**: People who will be playing the game once it is released.

## User Summary

* + 1. **Name**: Experienced User  
       **Description**: This person is the end-user in mind as we design and implement this game. This person won’t have very many issues when setting up the computer. They will probably catch onto how the game runs and may be able to enjoy it right from the start.   
       **Stakeholder**: User
    2. **Name**: Inexperienced User  
       **Description**: This person is the end-user in mind as we design and implement this game. This person may have issues when setting up the computer. Although they may understand how classic board games function, they may understand how the digital game runs but may have trouble playing with the new controls. (i.e. using a mouse, keyboard, etc.) They may take a bit of time to consult the user manual thoroughly before playing.  
       **Stakeholder**: User
    3. **Name**: Professor Giacalone  
       **Description**: Professor Giacalone will be testing our program on the basis of our documentation. He makes the executive decisions on what we can or can’t do as developers for this project.   
       **Stakeholder**: Executive Interests Holder

## User Environment

* + 1. Mythinati can handle between four and six players per game session. This will not change and if there are more than the allowed number of players, those players will need to participate in another game session.
    2. One game will take about 45 minutes as the default but can set the length at the beginning of the game when setting up the game session. Each user will be responsible for acting on their group’s responsibilities as well as accomplishing specific special goals.
    3. Users will need to play on a working Windows 10 computer that has a working monitor, keyboard, and mouse. They will also need to be connected to a Wi-Fi network in order to participate.
    4. There are no current system platforms that are in use currently regarding an online *Illuminati* game. A future platform applies to what we will create.
    5. We are using different programs to produce the game:
       1. [Unity Version 2019.3.0.](https://unity3d.com/get-unity/download)
       2. C# programming language
          1. This will be used to write coding scripts for different objects and actions within Unity.
       3. [Photon Pun](https://www.photonengine.com/pun) (Unity add-on)
          1. This will be used for the multiplayer system aspect of the game.

## Stakeholder Profiles

* + 1. **Developers and Designers**

|  |  |
| --- | --- |
| **Representative** | Rachel Pai, Grayson Hill, Glizelle Mapa |
| **Description** | Developers and Designers |
| **Type** | Computer Science Students |
| **Responsibilities** | Create interface of the game, inner workings of the game, re-design characters and themes based on mythology. |
| **Success Criteria** | They will define success as receiving a good review from Professor Giacalone and having a functional game. They will be rewarded with a grade at the end of the semester. |
| **Involvement** | They will be creating the game for Professor Giacalone to review. |
| **Deliverables** | They will need to turn in additional pieces of documentation as the semester continues. |
| **Comments or Issues** | Problems that may interfere with success could be procrastination, not completing a deliverable on time, or lack of communication between members. |

* + 1. **Professor Giacalone**

|  |  |
| --- | --- |
| **Representative** | Professor Giacalone |
| **Description** | Executive decision maker |
| **Type** | Computer Science Professor, Software Developer |
| **Responsibilities** | Guide the developers and designers if they become off track from the original assignment. He will also grade and give feedback on each deliverable given by the developers and designers. |
| **Success Criteria** | He will define success as work delivered by the developers and designers that is on the right path as well as delivered in a timely fashion. |
| **Involvement** | He will step in if needed if the developers and designers are off track from the original assignment. |
| **Deliverables** | He is responsible for giving feedback when the designers and developers turn in work at each given deadline. |
| **Comments or Issues** | Problems that may interfere with success would be not being timely or having a lack of communication with other stakeholders. |

## User Profiles

* + 1. **Experienced User**

|  |  |
| --- | --- |
| **Representative** | Experienced User |
| **Description** | This person is the end-user in mind as we design and implement this game. This person will not have very many issues when setting up the computer to play Mythinati. They will probably catch onto how the game runs and may be able to enjoy it right from the start right after importing the .exe file. |
| **Type** | User |
| **Responsibilities** | They will play the game. |
| **Success Criteria** | The project will be considered a success if the user finds the game to be simple to control and is an enjoyable usage of their time. |
| **Involvement** | The user will be playing the game for their enjoyment. |
| **Deliverables** | The user will provide feedback based on how they think of the game. |
| **Comments or Issues** | Problems that may arise from playing the game may be that the game is not intuitive and may be hard to understand. Another problem could be that the game is not interesting enough. |

* + 1. **Inexperienced User**

|  |  |
| --- | --- |
| **Representative** | Inexperienced User |
| **Description** | This person is the end-user in mind as we design and implement this game. This person may have issues when setting up the computer. Although they may understand how classic board games function, they may understand how the digital game runs but may have trouble playing with the new controls. (i.e. using a mouse, keyboard, etc.) They may take a bit of time to consult the user manual thoroughly before playing. |
| **Type** | User |
| **Responsibilities** | They will play the game. |
| **Success Criteria** | The project will be considered a success if the user finds the game to have learnable game controls and can find the game enjoyable. |
| **Involvement** | The user will be playing the game for their enjoyment. |
| **Deliverables** | The user will provide feedback based on how they think of the game. |
| **Comments or Issues** | Problems that may arise from playing the game may be that the game is not intuitive and may be hard to understand. Another problem would be if the game is not a proper representation of the original board game. |

## Key Stakeholder or User Needs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Need** | **Priority** | **Concerns** | **Current Solution** | **Proposed Solution** |
| Understandable user interface during gameplay | High | Easy usage for both experienced and inexperienced computer users is important to have a game that is fun to play. | Create menus and in-game pop-ups that are easy to understand and are intuitive to click on. | Do not use jargon without explaining what they mean first.  Create buttons that are intuitive and simple. |
| Reliable and consistent mechanics | High | Inconsistent mechanics are more difficult to learn and frustrating to users | Test scenes in Unity to ensure that different aspects of gameplay work before putting it all together into one game. | Rigorous testing of game systems to ensure a minimal number of bugs |
| Consistent multiplayer server availability | Med | If the servers are not available, users cannot play the game | Research how Unity Photon Pun works and implement accessibility for people to play in multiplayer game sessions for Mythinati. | Record the average and peak number of concurrent users and base Photon purchase off these metrics |

# Product Overview

## Product Perspective

Mythinati is a game designed for four to six players. Each player controls a mythical deity at the beginning of the game and attempts to control more lesser deities and mythical creatures as each turn progresses. Players will interact with other players through free and prompt action commands, which can affect their groups’ statistics or their organization’s wealth.

## Summary of Capabilities

* + 1. Game is hosted by Photon Servers.
    2. Each game can be customizable based on the total amount of players and follows all established rules of the game.
    3. The entire game is based on a famous, well-established card game.

## Assumptions and Dependencies

* + 1. Users will have a display.
    2. Users can run the program on a working mouse, keyboard, and computer with a Windows 10 operating system that fit the system requirements in section 1.2.1.
    3. Users have internet access.
    4. Assumes the Unity Game Engine will be available for development.
    5. Assumes Photon Pun will be available as a tool.
    6. Assumes Photon servers will be online to facilitate online play.

## Cost and Pricing

* + 1. The game will be free for players.
    2. The price per user for each concurrent user past 20 would be around $0.02 to break even with the costs of the Photon Pun service that we will need to implement for those playing together. Photon Pun allows for up to 20 connected users with their free service.
       1. [As based on the Photon Engine website](https://www.photonengine.com/en/pun/pricing), the next upgraded plan would be $95 for 60 months for up to 100 connected users at the same time. Therefore, by having $95 / 60 = $1.58 for each day, with $1.58 / 80 users (each concurrent after 20) = $0.02.

## Licensing and Installation

* + 1. The user will need to connect into the game before they are able to play with a login ID.

# Product Features

## System Features

The game will implement the basic rules and regulations from the original board game, *Illuminati* but have a different theme with mythology. Players will have the option to adapt more advanced rules based on the board game in order to further their gameplay experience.

## Assets

The application will generate a hierarchy display that branches out from an asset that represents the player’s main sect. Game assets including other cards that represent different mythical groups will attach and branch out from the main sect as the game progresses. Additional assets will connect other players for a single game, and create a chatroom display that allows players to message each other in real time.

## Players

Four to six players are recommended to fully experience each game session. However, it is possible to initiate the game with seven to eight players maximum with minor restrictions.

# Constraints

* 1. The game recommends four to six players for a satisfying game experience. A game with less than four players, but more than two players, can be supported but not recommended.
  2. Likewise, a game with seven to eight players can be supported with minor restrictions but is also not recommended. Otherwise, a game with more than eight players is not supported.
  3. All players need an active Internet connection to play one full round of the game. Game assets, chat interactions, history, and status cannot be accessed offline.

# Quality Ranges

* 1. This program will need a medium system requirement. There needs to be enough memory storage for the game application to run on most hardware platforms. The most basic requirement of technology required is: a Windows 10 (32 bit) operating system, an Intel Core i3 2.5 Ghz or greater processor, a 4 GB RAM memory, and a 12 GB or more hard drive.
  2. Photon servers will operate at a minimum of 21 hours per day with the goal of fully operating 24 hours per day.
  3. With each individual game hosting four to eight players, Photon servers will be able to adapt with the growing user base for the game application.

# Precedence and Priority

* 1. Priority will focus on a complete, simple game inspired by *Illuminati*. More features will be added if necessary regarding further gameplay mechanics. The initial version only supports the rules and game pieces from *Illuminati* the board game. Our game features culture specific mythological stories and game pieces.
  2. **Priority Feature Table**

|  |  |  |
| --- | --- | --- |
| **Priority** | **Functional Requirements** | **Non-Functional Requirements** |
| **High** | * Program Gameplay Functions * Rules based on Original Board Game * Easy to use Controls * Constant Runtime for Multiplayer * Server Availability | * Establish Statistical Functions * Rules from Original Board Game * Ability and Money System * Building System * User Interface for Player Chat |
| **Medium-High** | * System Maintenance * Increase Runtime for Multiplayer Servers | Graphics for Main Sects and Groups |
| **Medium-Low** | * System Recover * Playable game in general | Visual Effects for Player Actions |
| **Low** |  | Graphics for Additional Downloadable Content |

# Other Product Requirements

## Applicable Standards

* + 1. Platform Compliance Standards with Windows
    2. Copyright standards
    3. Communication standards with network (TCP/IP)
    4. Photon Pun server connection standards

## System Requirements

* + 1. **Operating System**: Windows 10 (32 bit)
    2. **Peripheral Devices**: Keyboard, Mouse
    3. **Processor**: Intel Core i3 2.5 Ghz or higher
    4. **Memory Requirements**: 4 GB
    5. **Hard Drive**: 12 GB or more
  1. Recommended System Requirements
     1. **Operating System**: Windows 10 (64 bit)
     2. **Peripheral Devices**: Keyboard, Mouse
     3. **Processor**: Intel Core i3 2.5 Ghz or higher
     4. **Memory Requirements**: 8 GB
     5. **Hard Drive**: 12 GB or more

## Performance Requirements

* + 1. Program must run reliably.

## Environmental Requirements

* + 1. The user’s use conditions / environment will be wherever they have their computer, keyboard, mouse and an internet connection.
    2. Resource availability will be high once the user meets the first requirement above.
    3. Maintenance issues may include not having a saved game.
    4. Error handling may be needed to resolve issue 9.5.3.
    5. Recovery will be in the form of restarting the game.

# Documentation Requirements

## Release Notes, ReadMe File

* + 1. ReadMe File includes general information including software requirements and names of developers.
    2. Release Notes include details for initial and further version game updates.

## Online Help

* + 1. Reference the Tutorial System from the game application.
    2. Reference the PDF Version of the *Illuminati* Board Game Rulebook online.
    3. Reference the game user manual to learn how to install, start, and play the game.

## Installation Guides

* + 1. Players will be required to download the game’s application in order to participate in the game.
    2. Players will also be required to create an account to participate in a game with other players online.

## Labeling and Packaging

* + 1. Welcome Screen with both login and create account options.
    2. Tutorial System that will inform players about game rules.
    3. GUI dialogue boxes that present chat messages shared between players.
    4. Graphic Elements that reflect the theme and pieces of the game.

# Appendix 1 - Feature Attributes

* 1. Status

|  |  |
| --- | --- |
| **Status** | **Description** |
| **Proposed** | This document is being proposed as a vision overview for the Mythinati project, with specific attributes to be implemented including: Multiplayer, User Interface, User Communication, Advanced Rules, Graphical assets, Audio assets |
| **Approved** | *Illuminati* Ruleset |
| **Incorporated** | Multiplayer sessions. |

* 1. Benefit

|  |  |
| --- | --- |
| **Priority** | **Description** |
| **Critical** | Multiplayer, *Illuminati* Ruleset, User Interface, Server Runtime |
| **Important** | User Communication, System Maintenance |
| **Useful** | Advanced Rules, graphical assets, audio assets |

* 1. Effort
     1. Translating the game from *Illuminati* themed to mythology theme
        1. **Time estimate**: 2 Weeks
     2. Creating the inner workings of the game
        1. **Time estimate:** 6 Weeks
        2. **Required code language:** C#
        3. **Functions:** Not available.
  2. Risk
     1. Schedule delays due to other classes assigning projects, therefore interfering with the time allocated for CECS 343. (Medium risk).
  3. Stability
     1. It is not likely that a feature will change or that the team’s understanding of our listed features will change because there are specific requirements for this project to receive a good grade.
  4. Target Release
     1. Earliest intended product version will probably be early April 2020.
     2. The product will likely not be completed by the end of May 2020 and will continue to be in production with the additional added delay of COVID-19 social distancing orders.
  5. Assigned to
     1. Software requirements: Professor Giacalone
     2. Software Implementation: Grayson Hill
     3. Photon Pun Server Implementation: Glizelle Mapa
     4. Documentation Editor: Rachel Pai
  6. Reason
     1. Photon Pun pricing breakdowns can be found at: <https://www.photonengine.com/en/pun/pricing> as referenced in section 1.4.