**Team 3 Product Backlog**

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**Project Title:** The Purdue Party Game

**Problem Statement:** Lots of people in the world need a proper outlet for fun with their friends, and video games like the one we’re making are an immersive and interactive solution. Users can explore worlds, beat fun challenges, experience narratives, and, most importantly, foster connection with each other. Moreover, party games serve as a great crossroads between all of the aforementioned characteristics. Our game will be a multiplayer, offline, 2D game able to be played on PC or Mac. The main difference between other party games currently on the market is that ours will be Purdue-inspired: the ‘game board’ will be the campus.

**Background Information:**

**Problem/Domain/Audience:** Party games are a genre of video games that consists of a collection of minigames that are easy to control and can be played by multiple players. There are several formats for these minigames, with one common format being the virtual board game with minigames between each round of player moves. This is the format of party game that our project will focus on. The audience would include current Purdue students, alumni, fans of the university, and casual gamers.

**Similar Products:** There are several similar party games on the market with similar gameplay mechanics. These include the Mario Party Series, Wii Party, and Crash Bash. The Mario Party Series was created by Nintendo and includes four players in a virtual board-game setting interspersed with minigames. Wii Party was also created by Nintendo and was largely based on Mario Party. Crash Bash was developed by Eurocom Entertainment Software and also contains various mini-games and a board-game format.

**Limitations:** Most of the similar products operate mainly on motion controls, which can be limited for some players, especially those with mobility impairment issues. Our game will be playable with only an analog stick and two buttons. This allows it to be more easily controlled than motion control games. It also allows for new users to understand the game’s mechanics quicker, resulting in a lower barrier for those who may be new to gaming. Our product will also be Purdue themed in order to attract a more local player base. This enhances the player experience for our target audience when compared to similar party games to which they may not feel a personal connection.

**Requirements:**

**Functional:**

1. **As a player, I would like the game to start with a title screen, with buttons for creating a new game, resuming an unfinished game (if applicable - if not, button grayed out), viewing game options and settings, exiting the game**
2. **As a player, I would like to be able to hear music and sound effects throughout the game and I would like to be able to adjust music volume and sound effect volume in the settings menu**
3. **As a player, I would like to view a ‘start game menu’ after selecting the ‘new game’ option from the title screen, with options to select the number of rounds in the game, select the number of human players, and to assign a character from a roster of 8 options to all players (human and CPU)**
4. **As a player, I would like for me and CPUs to be able to roll die/dice in order to progress on the board**
5. **As a player, I would like for me and CPUs to be able to move around the board, choosing where I/the CPU would want to go**
6. **As a player, I would like to have the option to view a zoomed-out version of the map (as opposed to the default local view) to see the entire board before my turn.**
7. **As a player, I would like to be able to view how many Boiler Bucks and Degrees each player has at any time**
8. **As a player, I would like to be able to save and exit my game between turns so that I am able to return at a later time or exit my game without saving between turns if I do not wish to return at a later time**
9. **As a player, I would like a minigame to be randomly chosen after each round of player turns and for an instructions menu for said minigame to appear so that I know how to play before the game begins.**
10. **As a player, I would like to be able to choose to play a demo version of a minigame, which does not count for real points, from the minigame instruction menu where after completion, it will take me back to the instruction page and I would like to be able to enter the actual minigame from the minigame instruction menu**

**Minigame 1: Boilermaker Special Race**

1. **As a player, I would like to have a train that moves across the screen based on the frequency that I alternate between pushing 2 buttons**
2. **As a player, I would like “gear-shifts” to occur at random intervals throughout the race that change which 2 buttons need to be alternated between in order to move**
3. **As a player, I would like for the CPU to move across the screen based on a simulated button frequency that is created using random time intervals, scaled to the level of difficulty of the CPU**
4. **As a player, I would like the first, second, third, and fourth places of the minigame to be decided based on the order in which players cross the finish line where coins are awarded based on placement**

**Minigame 2: 11:59**

1. **As a player, I would like to see a clock on-screen that starts at 11:59:45 and counts up to 11:59:50 before going blank**
2. **As a player, I would like to be able to push a button to “submit assignment” when I feel I am as close to 11:59:59 as possible without submitting past 12:00:00**
3. **As a player, I would like the CPU to choose to “submit assignment” at a time randomly generated, but scaled based on difficulty level of the CPU**
4. **As a player, I would like the first, second, third, and fourth places of the minigame to be decided based on who got closest to the time 11:59:59 but does not go over, with those going over being placed in the latter places ranked on who went the least over where coins are awarded based on placement**

**Minigame 3: State Street Scramble**

1. **As a player, I would like my character to begin at one side of University Street, with 10 lanes of traffic (bikes, skateboards, cars) in which vehicles move across the lane at constant speed at different set intervals**
2. **As a player, I would like to be able to move forward, backward, left, or right in order to move from one side of the road to the other while avoiding vehicles**
3. **As a player, I would like for the CPU to be able to choose to move forward, backward, left, or right based on the position of vehicles on the road, with non-optimal moves made at a frequency corresponding with the difficulty of the CPU**
4. **As a player, I would like collision with any vehicle to result in my character or the CPU re-spawning at the beginning point**
5. **As a player, I would like for the first, second, third, and fourth places of the minigame to be decided based on the order in which characters reach the opposite side of the street where coins are awarded based on placement**

**Minigame 4: Tipsy Tunnel Trek**

1. **As a player, I would like to be able to play a maze minigame based on navigating Purdue’s underground tunnels where the maze is randomly selected from a pool of completable mazes and all players start at the same spot within the maze**
2. **As a player, I would like to be able to move freely throughout the maze, viewing only a local chunk of the entire maze at any given time**
3. **As a player, I would like for my controls to be altered/inverted at random time intervals throughout the duration of the minigame.**
4. **As a player, I would like for the CPU to be able to choose a path through the maze using a graph-based traversal algorithm with “incorrect” path choices taken at a frequency corresponding to the difficulty of the CPU**
5. **As a player, I would like the first, second, third, and fourth places of the minigame to be decided based on who navigates to the exit of the maze the fastest where coins are awarded based on placement**

**Minigame 5: Time’s Up**

1. **As a player, I would like to see my character climbing the bell tower at a set pace, starting on the left side, as well as be able to use the joystick to switch my character from one side of the tower to the other in order to avoid obstacles**
2. **As a player, I would like clocks to randomly generate at increasingly-frequent intervals on either the right or left side of the bell tower that fall towards me at a set speed. If a clock collides with my character, I would like to fall slightly down the tower before my character begins climbing again**
3. **As a player, I would like the CPU to be able to switch from one side of the tower to the other to avoid obstacles with a certain probability of avoiding each obstacle, with this probability increasing with higher levels of CPU difficulty**
4. **As a player, I would like the first, second, third, and fourth places of the minigame to be decided based on who gets to the top of the bell tower first where coins are awarded based on placement**
5. **As a player, I would like to see a screen after each minigame that displays the winner/placements and reward(s) and allows a return back to the game board**
6. **As a player, I would like for me and CPUs to be able to exchange Boiler Bucks for Degrees when passing “graduation” squares**
7. **As a player, I would like to be able to land on special “trivia” squares and have the chance to answer a Purdue-themed or map-location-based trivia question randomly selected from a pool of questions for Boiler Bucks**
8. **As a player, I would like for the CPU to be able to land on special “trivia” squares and have the chance to answer a Purdue-themed or map-location-based trivia question for Boiler Bucks, with the CPU choosing an answer randomly with frequency of a correct answer corresponding to CPU difficulty**
9. **As a player, I would like for I or the CPU to be able to land on “scholarship” squares and gain Boiler Bucks**
10. **As a player, I would like I or the CPU to be able to land on a “student loan payment” square and lose Boiler Bucks**
11. **As a player, I would like to be able to view a store with items that I am able to purchase with Boiler Bucks during my turn**
12. **As a player, I would like to be able to purchase and use an item that slows down the roll of the dice so that I am more easily able to choose when to stop the dice in order to get whatever number I desire**
13. **As a player, I would like to be able to purchase and use an item that allows me to swap places on the board with another player of my choosing**
14. **As a player, I would like to be able to purchase and use an item that allows me to roll a second die in order to increase the number of spaces that I can move.**
15. **As a player, I would like the game to end once the specified number of turns for each player is done**
16. **As a player, I would like bonus Degrees to be awarded at the end of the game based on most minigames won, most Boiler Bucks, most trivia questions gotten correct, and/or most “student loan payment” squares landed on**
17. **As a player, I would like an end screen to display the ranking of the players based first on the number of degrees then secondarily, in the case of a tie, on the number of Boiler Bucks**
18. **As a player, I would like for there to be transitions between screens to improve the visual flow of the game**

**Non-Functional:**

**Usability**

**As a player, I would like for the game to be intuitive and easy to navigate. New users should be able to learn basic controls within 5 minutes of first use.**

**Video games should be a fun, easy, and relaxing experience. If the user interface of the game is not intuitive or requires the player to spend time trying to figure out how to play the game instead of actually playing, it is unlikely that the player will want to continue the game. Because of this, it is important that our game be easy to navigate, even for casual gamers and new players.**

**Performance**

**As a player, I would like my loading times between screens to be under 8 seconds, and for the game to run optimally at 30 frames per second.**

**Performance is an important aspect of video gaming. In order to keep the player immersed in the gameplay, it is important that loading times between screens (e.g., between game options and main board, between main board and minigame menu) be minimal. This can be controlled by ensuring that only necessary assets are loaded for each screen and that there are no time-intensive algorithms or loops in the creation of each screen.**

**Scalability**

**As a player/players, I would like the game to be scalable from 1 to 4 human players, with no negative effect on frame rate and response time.**

**Party games like ours work best when there are four players. It is important to note, however, that not all players will be in groups of exactly four people wanting to play our game. In order to expand the base of players, our game will be able to support from 1 to 4 human players, with the remaining players being controlled by the computer. This makes our game more scalable to different groups of players.**

**Relatability**

**As a player/players, I would like for the game to be reminiscent of my experiences with Purdue culture**

**While not exclusive to Purdue students and alumni, these groups are ones that are in our intended audience. Because of this, we want the games, trivia, map, and references in our game to be relatable to current or previous students or fans of the university.**