**PROPOSED LEVEL OF ACHIEVEMENT: APOLLO 11**

**TARGET AUDIENCE: AGES 15-25**

**MOTIVATION:**

A lot of times I find myself doing a group project with non-compatible teammates. In such scenarios, giving up or changing teams is usually not a solution. Thus, we must learn how to adapt ourselves and use a certain strategy to obtain the best result with any kind of teams. We need to learn what strategy to use such that we can certainly complete the requirements and provide the best result for any task/assignment/project for any team ranging from a group of incompetent, lazy procrastinators to a team of diligent and smart individuals. As the above case is too general, we decided to create a more specific and fun task to analyse strategies and come up with the optimum one – a game!

**GAME:**

We decided to create a co-op game in which the computer learns how to play by playing with the user multiple times and chooses the best strategy to optimise its score. Our game is a turn-based game where both the players need to escape the grid using an exit within a certain time-limit. And the players have portals ! Therefore, they must collaborate with each other to create portals to teleport each other to different areas of the grid and escape before time runs out!

**FUNCTIONALITY:**

* User adds positions of players, one exit and bricks to formulate the game.
* User plays the game which involves moving and “shooting portals”
* User can see how the computer plays to analyse its strategy
* Visual and analytic depiction of game at every move.

**PROJECT LOG:**

**Plan:**

1. By 3rd June: Basic Front End and Game Logic
2. By 10th June: Completed Game Logic and deciding learning algorithm
3. By 17th June: Complete research on learning algorithm and initial setup begins
4. By 24th June: Optimisation of learning algorithm based on our game
5. By 1st July: Completed Front End
6. By 8th July: Completion of learning algorithm
7. By 15th July: Testing and debugging
8. By 22nd July: If time permits, add extra functionality and add-ons
9. By 29th July: Finishing touches

**Log:**

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| **S. No.** | **Task** | **Number of hours by Orbitee 1** | **Number of hours by Orbitee 2** |
| **1.** | **Installing and experimenting with frameworks** | **9** | **9** |
| **2.** | **Team meeting and initial planning** | **10** | **10** |
| **3.** | **Programming at Home** | **8** | **8** |
| **4.** | **Reading about Q-Learning** | **5** | **5** |
| **5.** | **Team meeting AGAIN** | **5** | **5** |
| **6.** | **Coding – developing basic front end and back end of game** | **8** | **8** |
| **7.** | **Code Review** | **2** | **2** |
|  | **Total Hours** | **47** | **47** |

[**https://youtu.be/sR3P5nOLxzs**](https://youtu.be/sR3P5nOLxzs)

**https://drive.google.com/open?id=15W82urjV8-KDK5dibDnt3gDHTza-2o9q**