User Evaluation

Cohort 2 - Group 7 - ‘Mikey and the Freemans’
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The first order of business with our user evaluation was the ethical aspect - consisting of the approval form, information sheet and the fast track ethics approval. This was important to complete before any data was collected - to ensure our research was ethical and collected in line with university standards. With this out of the way, next we focused on the design of our research to perform the data collection. Ultimately, we decided this would be carried out via a google form, as this means we can easily use inbuilt graphing capabilities and data representation within the google suite to help better understand and represent our data.

Within google forms we created a series of questions split into two components - the first half measured user evaluation of core aspects like ‘how easy was the maze to navigate?’. There were 7 questions in this section measured by a likert scale((1-4) where 1 = strongly disagree 4 = strongly agree). These would give us crucial insights into the overall opinions without focusing on semantics in too much detail. The second half of the form consisted of 7 text based answers, where users can evaluate specific components and aspects of the game they found frustrating/ enjoyable, any suggested improvements in usability and functionality and parts of the game they found difficult, confusing - or even broken. With this information we can see as developers the issues real users bump into using the game - not just issues we face as we are very familiar with the game design and this would not be representative. As the final component of research design, we allocated a series of tasks for the user to complete to effectively evaluate all core usability and functionality aspects of our game. (see below)

Tasks for participant:

Basic Navigation: Start the game and move around the maze, Find and interact with at least one visible obstacle. **Beneficial Events**: Locate and use at least one beneficial event. **Hidden Event discovery**: Locate and use at least one hidden event. **Time / Pause**: Use the pause function at least once, then resume gameplay. **Attempt to escape**: Try to reach the exit of the maze within the time limit. **Leaderboard:** After the run ends, locate the leaderboard and interpret your final score. **Achievements:** After the first run of the game ends, evaluate the achievements menu (which are marked as green/red - depending on completion status), Run the game again and try to achieve a new achievement.

After completing the ethical aspect, and research design we recruited members from our module cohort to partake in our research. We used opportunity and simple random sampling to select people from groups within our cohort to try and eliminate bias as much as possible. We did this in the computer science labs to recruit members to evaluate our game. We went to three different groups total and had people who were willing to partake in our evaluation - for a total of **8** participants. We did this to avoid any friendship biases, as if we only chose people for our research we know they may skew the results due to demand characteristics.

The user was first given the prototype version of the system to test and use for a fixed length of time in this case 5 minutes so that we give each user the same conditions to review the game and therefore a better data set and understanding of the user experience. The user was also given a set of tasks (**see above**) to try to complete as outlined below this means that the evaluation is a more comprehensive review of the system. Following this the user would then fill in the google form providing all feedback positive and negative they found about the game.

Usability problem	Brief description	Participant	Severity (5 being most severe)
Maze navigability	25% of users found the maze hard to navigate. The design could be more clear and highlighted in the tutorial.	P1,P3	2/5
Pause and exit function	If the game is started without viewing the tutorial, users miss the explanation of where to find the pause menu; and therefore cannot escape to it when required.	P5	3/5
Score calculation	There was a range of results here. With half of users finding it confusing how the end score was calculated. Potentially an explanation needed in the tutorial.	P2	2/5
Hidden event fairness	Most users scored this ¾ fair. However, if they encountered one while at the regular speed, they would get slowed down to an unfair amount - as no minimum was implemented. This made the game take a long time to complete and a minimum could be implemented to make the events more fair.	P2,P4,P6	3/5
Achievement readability	Once a criteria was completed, the green text was then hard to read as it clashed with the background design. Perhaps a different shade of green would increase visibility or a different background design.	P1,P2,P8	1/5
Out of bounds error	The overall collision detection was successful. An error came up when users encountered the negative event that reversed their controls - and this allowed their character to leave the map. Once out of bounds, the game had to be restarted to become playable once again.	P3	5/5
Hidden event visibility	When a hidden event - like longboi's ghost was discovered; a popup would appear at the bottom of the game screen and cover part of the map. Users reported this impairing and confusing them while playing. An interrupt screen they have to click off would solve this.	P6,P7	2.5/5
Achievements while running the game	Users reported the achievements they wanted to complete while completing the game were often forgotten. We could add the achievement menu to the pause menu to allow easy reference while playing the game.	P3,P6,P7, P8	2/5
Piano playability	A room in the university map contained piano's, users reported they would like to be able to interact with them in future.	P2, P4, P5	1/5
Positive event powerups	After collecting all positive events the user speed is too high where it makes the game harder to complete. A lower maximum speed would solve this.	P1,P5,P8	3/5
Interact key	As shown in the tutorial the 'F' key would interact with events and npc's. In our prototype, there was nothing for the user to interact with.	P6	2/5
Map design	Some users found this confusing. Perhaps an explanation would mitigate this.	P4,P7	3/5

Based on our user evaluation form we chose to add npc interaction and fixed the inverted controls bug(where players could leave the map) to our game.