

Participants

The participants we chose were based on our meeting with the shareholders, as outlined in **NFR_THEME** [1], our game should appeal to 16-20 year old students. As shown in the Usability Test plan [2], we wanted to get between 4-6 students leaning towards 6 so that it was tested thoroughly. We aimed to get diversity in opinion so at least 1 member not working on the same project which was Team 9s as the buttons and what everything means could be too familiar. They may also not see problems others may have. A mix of gender as we wanted it to be accessible and enjoyable for all and someone who isn't a CS student as it may otherwise be too geared towards one. For each user we took into consideration their characteristics and their biases before making changes as some feedback would be more/less useful, e.g. a new user's assessment of design vs CS student. User 1 was a HCI expert and while we hadn't planned for it, we thought his experience would help and anything too specific would be saturated out by the other testers which is what happened on row 3/4. The other feedback was very constructive and found 2 Major problems, the second one wasn't found by others due to them having similar systems. User 2 was selected as they had no knowledge of Team 9's system meaning they wouldn't know the key bindings and buttons, they returned with some great feedback missed by others namely the recreation type. User 3 was chosen due to them working on the same project but we found that they were too familiar with the project to nitpick the nuances. Nonetheless, we still made changes. User 4 was part of the team that originally worked on this project and we thought that they may provide some good advice. While helpful, they were quite biased as they gave the assets and map, which were the same as theirs 5's but the average was lower. Users 5 and 7 were chosen as they weren't part of the cohort so would have no knowledge of the project and were female so we could diversify our feedback. 5 gave good feedback but lacked experience gaming and some terms weren't familiar to them, some we changed others we left. 7 had little feedback but tested a late prototype of the game so there wasn't much to. User 6 was chosen as they weren't a CS student and wouldn't be familiar with the project.

Method/Procedures and Data

I was the moderator and the scribe was a member of the coding team. They would know changes we could make and ask users if they would prefer that e.g. when we asked if a pause screen would be better, users said they would prefer it. We used a Task based approach to make sure the user tested all the features. To ensure this we had to make sure we tested all the aspects. To do this we did multiple playthroughs and storyboards to test all possible actions and needs. The hardest task was number 6 right after the home screen questions to see if our game was easy for new users. At the start of each session we got them to sign the consent forms, asked a couple details about them and gave an introduction to our project and what we wanted from them in this session, namely explaining their actions. The scribe wrote down their details, the problems encountered with the task it happened in and their severity. After between 5-10 minutes the sessions ended and they filled out a form based on our goals to track our progress. This data was kept in a document[3]. The first 4 users were tested on the 12/12 but due to computer problems, our game was still a very raw product. Because we couldn't test many new features, we took the opportunity to see what users liked and disliked about the current one. As you can see below, we decided on what changes we should make based on each problem. On the 4/1, we tested the new system. A couple of tests were added to test new functionality but the rest was the same. Overall, our results were much better and due to having the coding team on hand, we even got some bug fixes and other issues sorted before user 7 who in turn had no problems.

Usability Problems

User	Task	Description	Severity (0-5)	Changes we plan to implement as a result
1	N/A	Didn't like how events stopped what he was doing	5	Give a countdown for next event
1	6	Didn't know the game was paused so couldn't place a building	5	Make it obvious the game starts paused
1	16	Thought you could unpause using the 'x' button	3	N/A - Not common key binding
1	8	Was hovering over the buildings expecting the name to appear, however did click after without the need to be prompted	3	N/A - Clicked on it in the end, no problems with other student users
2	6	Didn't know it was type recreation.	3	Description to include type
2	16	Thought that the pause pop up wasn't obvious	4	Change to a pause screen
2	6	Didn't like the enter name placement	2	N/A - No problem with others
2	8	Didn't know how much each building cost	3	Description to include cost
3	15	Thought 'wasd' could be used to move the camera	1	Include those key bindings
3	N/A	Thought you should see the leaderboard at the end of the game	1	Put leaderboard on end screen
3	16	Thought that 'p' could be used to pause/inpause	1	Include key binding
4	N/A	Didn't like how the score didn't go down	4	Implement score decrease feature
4	N/A	Didn't think the Satisfaction was intuitive	2	Include in Tutorial instructions
4	N/A	Found the events intrusive and not polished	4	Give a countdown for next event
4	12	The pause pop up could be moved to the top of the screen and get stuck there without being able to unpause	3	Change to a pause screen with a resume button
1-4	6	Didn't like having to backspace 'Enter Name' to put in name	1.5	Have 'Enter Name' label above text box
5	5	Didn't initially know how to get back to home screen	3	Have 'Back to Main Screen' button
5	6	Didn't initially understand to click on pop up to unpause	2	N/A - no problem with others
5	7	Didn't know 'RMB' meant	2	N/A - no problem with others
5	N/A	Didn't understand how the scoring worked	3	Mention how scoring works in tutorial
5,6	20	Couldn't see their scores on leaderboard	2.5	Fix the bug
5,6	3	Volume and Difficulty were in the wrong position	3	Swap the text positions
6	3	Couldn't initially see the back button as it blended in	1	Move its position
6	N/A	Thought the map was limited and wanted multiple	2	N/A - due to time constraints

Work Cited

- [1] Requirements
- [2] Usability Testing Plan
- [3] User Testing document