

UNIVERSITY OF YORK
DEPARTMENT OF COMPUTER SCIENCE

User Evaluation

Engineering 1 - Assessment 2

Group 2, Cohort 1 (*"The JVMs"*)

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When it came to conducting our user evaluations we opted to use task based user evaluation, which is where a participant is observed conducting several specific tasks chosen by the development team and the system is evaluated based on the success of the tasks. This form of evaluation is preferable for our game as we had features such as interactions and streaks that we wanted to test which could be done by conducting specific tasks.[1] It also allows us to uncover any usability problems in the system, where the participant is struggling to complete a certain task.

During the recruitment process it is important that the participants are not part of the development team to eliminate any bias as we all have extended knowledge of how the game works. It would also be ideal to have the previous creators or groups that had taken on the same game as us reviewing so we tried to ensure that most of the participants were members of the different teams. From these groups of computer science students we selected 7 people to be part of the evaluation which were conducted in person within lab sessions or another time of convenience.

To ensure that we were prepared to perform an effective user evaluation we pre selected parts of the system we wanted to test which were: the failure clauses, the scoring function and the streaks. From this we were able to create 4 scenarios each with a clear set of tasks in a logical sequence for the user to complete. To ensure that we were fully prepared a member of the team completed a test run of the user evaluation at the beginning of a lab session to ensure that the environment was appropriate.

Before each user evaluation started, all participants were given an information sheet which listed what they were taking part in and how their data would be used, and were also asked to complete a google form where we got their consent to take part and use their data.

When conducting the user evaluations the protocol we decided to follow was the think aloud procedure specifically the concurrent verbal protocol. This meant we were able to observe the user completing the tasks while also getting verbal feedback, pinpointing any usability issues that we may have missed just by observing. During the observation we made use of an observation template which noted down each scenario and all its corresponding tasks for the observer to categorise problems encountered into cosmetic, minor, major and catastrophic, and a performance chart which had details of the success of each scenario which would be useful for compiling the data at the end of the process.

At the end of each observation the participant filled in a usability scale document which was useful to highlight any key usability issues that we may have missed in the observation process. To ensure our findings were accurate a final interview was conducted where questions were asked about the users awareness, understanding and execution of the tasks which is useful in determining the mental model they have created. All of the templates we created were inspired by Shane Doyle's template for usability. [2]

Finally, once completed we gave a suitable debrief to the participant where we thanked the user, recapped what they had just done, the reasonings behind it and what we were using their data for. At this point we also reminded them they could withdraw consent and their data would be deleted and not used in our project.

From the 7 user evaluations we conducted, a member of the team compiled the data found and created a table to visualise the results, making it easy to see any problems that were frequently occurring with the system. The table below shows all the common problems that were encountered during the course of the user evaluations, with a description of each problem, an indicator of which participants encountered the problem and the percentage which was used to prioritise which problems to fix.

ID	Problem	P 1	P 2	P 3	P 4	P 5	P 6	P 7	%
U_1	Energy visibility - overlay with pop ups and does not show up clearly against background		X	X		X	X	X	71
U_2	Icon confusion - the popcorn icon denoting the cinema mistaken for an eating place	X	X						29
U_3	Counters confusing - the counter icons mistaken for items to interact with		X		X	X	X	X	71
U_4	Scoring - there is no incentive to eat as it has no significant influence on the score	X	X		X		X	X	71
U_5	Scoring - the scoring is not proportional as you can pass with barely studying	X	X	X			X		57
U_6	Streaks - the split of score got form the game and bonus points is not clear	X		X				X	43
U_7	Gameplay movement- can play the game remaining at the bottom of the screen = boring	X	X		X			X	57
U_8	Feedback - unsure why they could not complete an activity when they had no energy or out of time	X	X	X		X	X	X	86
U_9	Icons - some of the icons are the same which is quite repetitive	X						X	29
U_10	Improvement - was not clear how to get the optimal score				X			X	29
U_11	Leaderboard - if the name is longer than 11 letters it cuts off	X						X	29

We used the percentage scale to prioritise which problems we would tackle first with an aim to address as many as possible. Most of the high priority items were to do with UI elements partially visibility of features on the map so this was a quick fix of making elements on the screen clearer and editing some of the icons. We managed to change the popcorn icon to a cinema icon after the first 2 evaluations and as the table shows the issue did not reoccur in the following evaluations - meaning the change was sufficient. We took a similar approach in addressing the UI elements that were unclear.

In total we aimed to solve the problems U1 - U8 as they had the highest severity ratings. To do this we discussed each of the problems in detail and created a plan to fix each of them, then assigned members to each of them.

References

[1] Creating task scenarios. (January 12, 2014) Turn User Goals into Task Scenarios for Usability Testing. nngroup.com [Online] Available: [Task Scenarios for Usability Testing \(nngroup.com\)](https://nngroup.com/articles/task-scenarios-for-usability-testing/)

[2] Template for user observations. (March 12, 2020) A template for Usability Testing. www.shanedoyle.io. [Online] Available: [My usability template for performing better user testing \(shanedoyle.io\)](https://shanedoyle.io/blog/my-usability-template-for-performing-better-user-testing/)