**Prototype Testing**With the development of the first prototype now complete, I have gone back to discussions and communications with my focus group to organise evaluation testing. As they are the stakeholders for the project and I have been building the project towards their needs, they will be the headlining participants for said testing. The comments and feedback made here will outline what I am missing from my prototype and give me an idea of what to do next for the prototype – this will also give me an opportunity to go back and make any last-minute hotfixes to this prototype before moving on to the next.

**Testing – Method & Questionnaire**  
The testing that will take place for this prototype will be a form of Black Box Testing, the people that will test the prototype will not have access to the code or mechanisms of it rather just a built application of the first prototype – the code and mechanisms of the prototype are not necessary to them. The testing will consist of the users generating a map using an input seed of their choice or using the random generated seed function available on the prototype; from there, the users will answer a series of questions commenting on the quality of the map and prototype with the ability to add any extra comments about the prototype to it. The questions I will be using for the testing are:

* Did the Prototype Generate a Map?
* Did the Generated Map have any isolated Rooms?
* If any rooms were isolated, describe the isolated rooms – the size of the rooms, position etc.
* Any other anomalies present within the Generated Map?
* Was the UI Menu easy to use?
* Any Improvements to the UI Menu?
* Any other comments? - Performance, Design etc.

These questions I feel quickly assess the procedural generation, taking yes or no answers for the fundamentals (isolated rooms for example) but also provide an open question to allow the testers to go into detail about any issues they may have with the prototype. This will all be setup in a document for which they can write on and I can easily collect and analyse.

**Testing – Results & Analysis**  
Overall, I feel that the results came out positive. Out of the 8 questionnaires I collected from the focus group that I am working with, none had issues occurring with the actual generation of the map – all could insert a seed which was used successfully to generate a map. Each person who provided to the testing did however find at least one unique issue with the prototype that was shown to them, they pointed these out to me in detail which allowed me to assess the problem in the prototype and fix it accordingly.

Character Limit  
One of the participants used a seed that was a total of over 70 characters. While this was still able to be used to generate a map, this showed to me that there was currently no limit of characters that can be used for the seed. The participant however decided to take this issue one step further and decided to copy a large transcript into the input. This transcript accumulated to over 5,000,000 characters and eventually crashed the prototype. This led me to incorporate a character limit to my prototype, which is currently at 32 characters.

Click-Out Unwanted Start  
A couple of the participants noticed that when inserting a seed, clicking out of the input field will start the next scene in the build and generate the map. It seemed that one of the methods that the input field object worked with had a function to start the next scene and generate a map – this meant clicking out of the input field essentially confirmed the text inserted and started that method. This was a simple fix to remove the function that loaded up the next seed, which wasn’t needed there in the first place.

UI Changes  
Most of the participants included a suggestion to the UI. While they were all happy with the UI at its current state (that it was easy to use and clear to read), they included some helpful ideas for the prototype. One of the first ideas was to have the UI adapt to the resolution of the screen being used – the UI elements were centred instead of being on the edge on some monitors. Another suggestion was to have a larger text size for certain elements – this can be easily done. One participants suggested that instead of using a button for quit, it should be in plain text, this is understandable as the button doesn’t have a label per say of what it does though I did try to mark it as a common quit button.

Seed Overwriting  
One of the participants of the testing noticed that when generating more maps in one session of the prototype build, it would start generating the same map – even when the ‘generate random seed’ is being used, the same map will be generated. The problem seem to lie that the file which held the seed wasn’t being overwritten unless another seed was inputted by the user; this caused the code to always take the seed in the file as it relies on nothing being in the file in order to generate a random seed. My solution to the problem was to include functions to delete seed files whenever the prototype is being closed, or the randomly generated seed option is selected – this cause the code to generate random seeds like normal as there is never a seed file before the next generation unless of course the user inputs one.

‘Enter Key’ Implementation  
A common request was to add an enter function as an alternative to clicking the generate map button provided into the prototype. This is commonly seen in multiple programs and as the enter key is commonly used as a conformation key, it would be rather smart to implement this small feature.

**Prototype Evaluation**Within my analysis document, I stated that this prototype will be counted as a success if the prototype could generate a map that suited to my conditions. The main condition was that if a player was to be spawned into that generated map, they would be able to navigate the entirety of it – which meant no isolated rooms. This was directly questioned with the testing period, requiring the participants to include any notation of instances of isolated rooms; from the testing documents, it seems that no one found any isolated rooms, any maps generated seemed to have fully connected rooms.  
One of the other conditions stated on the success criteria of the first prototype was that the map generation can be used with seemingly and word or statement. After the prototype crashed with a 5,000,000-character script (Testing Analysis – Character Limit), the decision to include a character limit breaks this requirement cause now the seed input limits what words or statements can be included. However, I do believe this is better for further development as this implementation has now removed a potential crashing problem which would be within my future prototypes and the final project outcome.