# THINK-ALOUD TESTING OF MINE RESCUE MUD GAME 02/01/24.

## Focus of Testing

The focus of this testing is to identify successes and failures within the design of the MUD game by using think-aloud testing. This will involve an individual interacting with the software and revealing their actions and thoughts, which can provide insights to modify the game for an end-user.

## Objectives

User to complete the game with as little help as possible using think-aloud methodology. Answers may be given in the event of the user understanding the puzzle but being stuck because it is too hard.

## Participantand Moderator

Participant – Reshma A. Final Year Medical Student

Tester – Allen. A MSc Computing Science Student

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| **Test** | **Think-Aloud Notes** [Moderator Prompts] | **Moderator Notes** |
| Registration | Okay so I pick my name and then my password.  [How was the main menu to use?]  Yeah, it seems straight forward and easy, I knew I just had to type “r” |  |
| Character Creation | I like how the text is speaking in a cowboy way, sounds more fun!  I can be non-binary? That’s quite inclusive for people I think  Hahaha fashion boots? Sounds snazzy I might go for that one |  |
| Login | Oh damn why is my login not working? I’m pretty sure I typed exactly what I entered before  [try putting it in just small letters?]  Yeah, that worked thanks, I didn’t put it in small letters when I picked my username though. | * Need to amend player registration to ensure that input for user is kept the same and not made lowercase |
| Puzzle 1 | That’s a cool image, so it’s the mine entrance, it looks like a person is there!  Let me look around and see what there is, hmm. It would be good if I could find something out or pick something up.  Okay, let me write out the sentence and see what to do. I see a letter by itself in the sentence, that’s got to be either ‘a’ or ‘’I’ I think, that’ll help figure out what the sentence is.  All the letters have probably moved by the same number of positions, right?  [Yeah]  Hmm I think it’s moved by like 10 positions, so the last key word would be minecart.  Nice one, that wasn’t too bad! I Like that it shows me how quickly I did it at the end! | * Add on the ability to pick up items. * Maybe give some extra insight by looking around the location. * Make it clearer that all words shift by the same number of times? |
| Puzzle 2 | So, the miner wants a hammer, pretty sure I picked a lasso when I was making the character.  Yeah, I was right, it’s good it let’s me check. Well… I can lie to the person, will they know?  [Maybe]  Let me say I have a hammer, oh okay so the miner knows I don’t have it. I like how it’s red, it seems like he’s angry I lied lol  Hmm so the train track has bent upward making this triangle shape?  [Yes]  Okay, so I need to find out how tall this triangle is, I guess.  I hate maths so this is just a big hard for me, I think. So, I divvy up the triangle and then I have two sides, so I need to find the missing side? Let’s call it x and then figure out what the others are. I think it’s like 708 point something, shall I put it to the nearest cm?  [Sure]  Yup I was right! | * User checking with me if the triangle shape is correct, maybe state that it forms a triangle? Since tracks don’t bend to that shape being lifted * Maybe change the units to make it an easier input? |
| Puzzle 3 | I like how I am going from one part of the mine to the next by overcoming these little challenges.  Oh, the person wants a lasso, I have that one!  Hmm that was a clue. Okay  So, there are links? And 5 chains? What exactly am I meant to do?  [There are 5 chains, each with 4 links]  Think it’ll be better if I could see what it looks like  [Here is a drawing, so each link can be broken, so how many must be broken?]  Oh, I see what the rail worker was saying, I don’t need to break every chain!  So, I can just break one of them and then it should do it! | * Make an image visualisation to help with seeing what one chain will look like |
| Puzzle 4 | Okay, so I don’t have a mask, I guess there’s no point in lying.  I like the little boat, sets the scene well  So I need to type in all of the actions together in one line?  [Yes]  Hmm this isn’t really working, I think I may have done it too long  Okay so the dynamite needs to be away from the rat and the miner  Okay I got it! That took a while | * Go through each part of the journey, one action at a time? |
| Puzzle 5 | Let me check my progress, oh, I’m 80% there.  I see the miners in the picture, so they’re stuck in that lift box thing.  So I just need to add in the plus and minus to make a 100.  The total of all the small numbers is 28… so if I divide it by two it’s 14.  From 98 to 100 it’s 2, so all together 16 to move. So, if I go up by 7, no go down by 7 it’ll be 91 then down again it’ll be 85 so 13 moved 15 to go back up to 100.  It says it’s wrong, I’m pretty sure I entered correctly.  [Maybe enter without any spaces]  Nice That’s right! | * Need to incorporate player adding spaces between inputs like 98 - 7 |
| End of Game | Oh, so I can now see how I ranked! Would be good if there was like an end screen like the cool start one. |  |

Wrapping up

[How was the game and puzzles?]

It was fun to play, solving the puzzles in each section. I like how the puzzles are quite different, so you are thinking differently when solving them.

[What was not very good?]

I think sometimes when I enter things that were correct it said it’s wrong, because of some error like a space or capital letters.

I also found it hard to understand what one puzzle was asking and needed to know what the chain and links were.

[Thank you for your feedback]

Changes made after Testing.

* The help option was made to help players better understand the puzzle tasks and to get common mistakes to avoid.
* Puzzle three has a text-visualisation implemented to help with understanding how a chain will look.
* Puzzle four was updated to take one input at a time when the user is playing, making it more interactable and easier.
* A visualisation was made for the outro of the game, showing the player they successfully completed the game before showing final leaderboard.