Thank you for taking part in the testing process. DISCLAIMER: Please be aware while you answer these questions:

The program is in Beta Testing. Bugs are present and are known. Please try to ignore obvious bugs as much as you can. There are a few graphical bugs/glitches which would be solved with the addition of animation, for example.

The focus on this project is the artificial intelligence (AI) systems. The program’s UI, art work, and other general program systems such as lack of animations are immensely underdeveloped. Please answer these questions with thought only on the AI and not on the artwork, or lack of other engaging systems which would otherwise be in place in a fully developed program.

1. General Concept Feedback

1.1) Imagining a fully developed, intelligent program which allows users to create very complex and fully customizable maps and scenarios, do you think that with enough development this program can be used as a good tool to train shop employees to allows them to experience unique scenarios and optimize their customer service skills? Please explain reasons for your response.

Absolutely, by accurately replicating the situations new shop employees might find themselves in, they can learn what will happen, and how to be best prepared to deal with it. The fact that it is a program is particularly useful as the customers are not real people, training new shop employees is difficult as it is a fast paced and stressful environment when you are not used to it, so when an employee does not know what to do and asks for help, it can annoy or inconvenience customers, so by using a program there is no risk of annoying customers, and it would allow shops to have new employees who are efficient and knowledgable from the start.

1.2) If you and think that both the concept is good, and this program can be used a good baseline, and you did not cover it above, please describe why.

n/a

1.3) If you think that the concept is good, but this program is not a good baseline for further development, and you didn’t cover it above, please describe why.

n/a

1.4) If you think that the main concept of this program is bad, and that this idea couldn’t be developed well, and you didn’t cover it above, please describe why.

n/a

1. General Artificial Intelligence (AI) Feedback

2.1) Please describe your thoughts on the general AI used in the program? Please think about the decisions they made, and compare their decision to ones you would typically see in real life.

For the most part the behaviours of the customers and workers are very accurate to real life, although I’m not sure as to whether the backshelves are supposed to be a stockroom/ warehouse, if they are, a customer went in there and that would not happen in real life. Customers also went back on themselves a lot, which of course happens sometimes in real life, but from my view not as often as this. There were also not a lot of customers who went straight to the one or two items they needed and left, they often checked the whole shop before buying their one thing, in fact it seems that every customer follows the same path all the way around the shop, which every customer does not do in real life.

2.2) Did the AI seem simple, and not very smart? If so, please describe how you came to that conclusion, and maybe some suggestions for making the AI seem more realistic. If you think the AI was smart, and it did seem to make some good decisions, can you pin point why it seemed smart, and if there is anything that can improve it even more?

It seemed smart, as the customers mostly behaved in very human ways. However, as I said previously, to seem more realistic the customers could follow more different paths around the store.

2.3) If a trolley was in a character’s way, they were programmed to find the nearest free tile from the trolley that wasn’t in their way and then move the trolley there. Did you notice this behaviour? If you did, did you think it looked realistic?

For the last 40 minutes of my simulation, the worker was in the same place with the trolley by the backshelves, so the customers were not walking past it.

1. Employee AI Feedback

3.1) Do you think that the employees made good, and realistic decisions? Please describe how you came to your conclusion.

Yes, they didn’t seem to interact with the customers much, but they did move around them in a realistic way.

3.2) The employees were programmed to get out of the way of a customer if they were asked to move. Did you notice this? If you did, did you think it looked realistic?

Yes, it did look realistic.

3.3) Could you describe any ways that the employee could be made more intelligent?

n/a

1. Customer AI Feedback

4.1) The customers were programmed to pick up the items they needed and then head to the checkout. If another character was in their way, they would wait 5 seconds, and then try and find a way around the character, if both of those failed, they would ask the character to move. Did you notice this behaviour? If you did, did you feel that it looked realistic?

I did not notice them asking to move, but they did wait for others to move. The time they waited almost seemed to be too long as people generally aren’t that patient

4.2) Could you describe any ways that the customers could be made more intelligent?

They could follow different paths around the shop

1. Relationship AI Feedback

Subtle relationship behaviour was programmed into the characters. If they found themselves next to another character they had a good enough relationship with they would say help to them, then they would choose to have a conversation with that character. Depending upon what they talk about, and the traits of the characters that are talking, the characters’ relationship with each other would either increase or decrease.

5.1) Did you notice any conversations taking place? If you did, did they look realistic? Is there anything that would make it look more realistic?

I noticed a relationship between a customer and an employee when I clicked on one of them. I didn’t however know if they were talking

5.2) Can you think of anyways to make it more clear when characters are conversing? Such as speech bubbles above their heads, or happy and sad faces appearing when they gain or lose relationship.

Speech bubbles would definitely make it more clear, and happy and sad faces would help understand their relationship

1. Traits AI Feedback

6.1) All the characters have their own personal traits such as friendly, and lazy. These traits were used to affect how characters interacted with each other, as well as certain attributes associated with the characters such as their maximum speed etc. Did you notice these traits? If you did, did you feel like they were used in a realistic way? Is there anything that could be further developed with the traits to make the character more realistic and interact with each other in a more realistic way?

I did not see any of the traits. However if a trait was lazy for example, they could walk slower than the other customers etc.

1. Pathfinding Feedback

The pathfinding is the first step in any advanced AI system. The system in this program uses the A\* pathfinding algorithm which is the fastest and more optimal algorithm currently developed.

7.1) Do you think that the characters took realistic paths to their destinations? Sometimes if the AI takes the most optimal path, it may look unrealistic so keep that in mind. Please explain your answer with examples of why or why not you agree.

I don’t think they were all realistic. Some definitely were as people often walk around the whole of the shop to see what they want/need, however almost all of the customers did this, where as in real life many people go to a shop for one or two things so go straight to one aisle or fridge and then leave.

1. Additions added to AI in possible further development

There were a few systems that could have been added into this program given more time to fully develop them. After describing them, please give your feedback on whether these systems would advance the AI and make the character more realistic.

8.1) Line-Of-Sight was the first thing to be implemented given more time. Currently all the characters have a full awareness of the entire world, they can find any item on any shelf, and find any character in the world even if they are very far away. With line-of-sight, systems could be developed and added which allows characters to need to walk tile by tile and search for their needs. They would also be able to ‘see’ other character that are not next to them and engage with them in a more realistic way. Do you agree that line-of-sight would advance the realism and intelligence of the AI considerable? If you do not agree, please explain why, and perhaps suggest your own ways the AI could become more realistic in terms of knowing things about their environment.

Absolutely, as in real life you can interact with people who are not exactly next to you.

8.2) Linked closely with line-of-sight; partially explored pathfinding algorithms could be developed. The idea behind this is that currently, a character can make a perfect path from any tile to any other tile, even if it is 100s of tile away. This is because they can ‘see’ the entire map. Partially explored pathfinding would mean that characters would have a blank view of the map and only know about other characters and furniture if they see them using their line-of-sight. This would create a realistic looking pathfinding system which could take characters down dead-ends and non-optimal paths, which is impossible with full map awareness. Do you agree that partially explored pathfinding algorithms would create a more realistic looking pathfinding AI? If not, why do you disagree, and can you think of any ways to create a more realistic pathfinding system?

This would be realistic if come customers used it as in real life some customers know the layout of a shop so know where to go, as if they can see the whole map. But of course some customers would be new to the shop and would have to walk around to find things, or maybe to make it more realistic some could ask an employee where to find things.

8.3) Please think about other ideas and concepts that could be added into the program to create a more realistic AI. Maybe talk about it at a general level and if you can, go into details about possible ways to implement the ideas. The box is a lot larger than the other. Please do not feel like you must fill the entire box. Any amount of feedback here is fine.

I feel as though I have covered what I would say for this in my previous answers?