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.

Yes.

It would provide a complete scenario with the many situations that could happen in the course of a day and hopefully provide solutions to any problems that may occur.

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.

They AI seemed consistent with the daily workings of a retail outlet and as stated in 1.1 with

Expansion and optimisation would allow for teaching of the handling for most eventualities.

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 was a bit basic but as stated with improvement and optimisation it has the makings of a good retail tool.

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?

Yes. this behaviour was picked up on and it was as realistic as the basic program would allow.

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.

The employees made decisions which allowed them to carry out their tasks as required although

The employee James when finished facing up seemed to remain in the stock longer than needed

Where he could be in the front shop helping out. Was he doing paperwork or just on a tea-break.

Now been explained that he was working on back stock.

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 was noticeable and did look realistic.

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

Could the employee be more proactive in helping and talking to the customers.

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?

Yes this was picked up on and it seemed quite realistic.

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

A lifelong problem for all retail outlets and a lifelong dream to have intelligent customers!

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?

It was noticed but would it be possible for speech bubbles to be introduced for all conversations to provide an ongoing narrative of what is going on between staff and customers and between customers themselves.

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.

As suggested in 5.1 this would be a great innovation to the program. Also adding emojis would be a good way to progress.

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?

These traits were noticeable when clicking on the character. This could be enhanced as previously suggested by the programmer by using /happy/sad Faces which could be altered when the characters interacted with staff or customers.

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.

It seems all customers use the normal flow through a shop but sometimes a customer should go against the flow in requiring one or two specific items where they would know their locations and would go straight to the shelf or freezer to pick them up.

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.

Yes, line of sight would be better and would allow a more rounded interaction between all characters.

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?

Yes this would be an improvement which would allow all characters to fully have the control to cover the complete shop and move independently back and forth around the shop giving a more realistic action.

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.

Could outside deliveries into the back stockroom be added which would increase movement into the front shop.

Incidental occurrences could be programed in. i.e. spillages, breakages, returns or complaints.

Even the occasional shoplifting event would add realism.

Also a rush of customers which resulted in excessive queues needing extra staff to go to the till

To reduce the congestion.