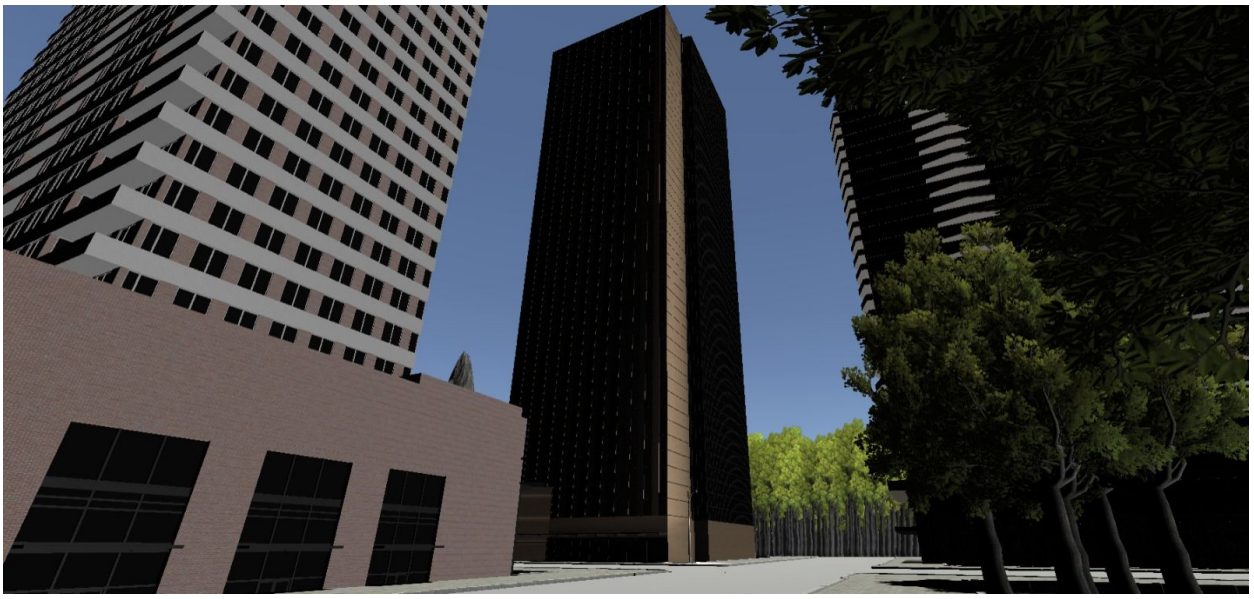
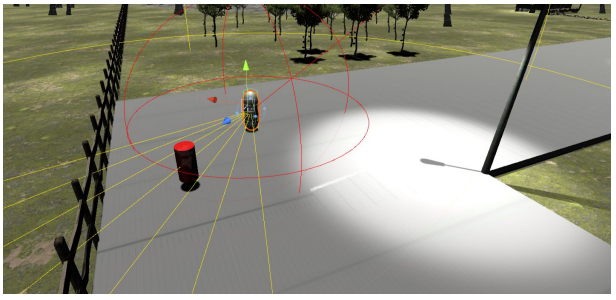
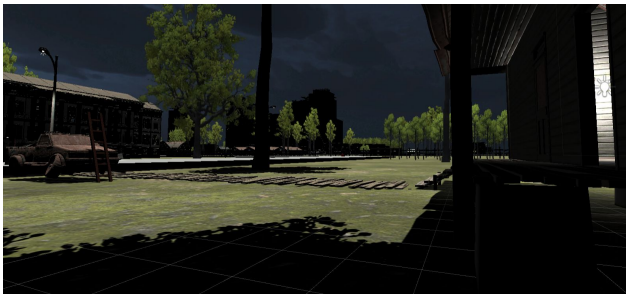
A Report on Learning and Persuasion in the Game 2050







By Alejandro Perez-Lucerga Garrido (1411748), Lucas Gether-Rønning (1408569), Esmée Torn (1386417), Douwe Terpstra (1235324), and Filomijn van der Poel (1431889)

Introduction

Nowadays, it is hard to imagine a world without video games. The potential of games is pretty much limitless, and with the rise of better graphics and new systems such as VR, it is hard to imagine what the future of games might have in store for us. However, many people in popular culture tend to underestimate one particular use for games: using games as a way of teaching skills and knowledge. Since anything is possible in a game, the options for creating the perfect learning environment are limitless, and it is easy to trick the player into thinking they are merely playing a game, while in reality they are actively learning something new.

This report will describe a serious game, and argue its design choices that should enthuse high school students to learn about logic, programming, and patterns, all while having fun playing an interesting game about robots and the dangers of AI. Additionally, the

game functions as a sortiment advertisement for Computer Science, showing players how interesting it can be to choose the study of computer science. The game makes use of various persuasion techniques, which teaches the player skills that are useful in the study of computer science. The design decisions are not only based on existing theory, but also on the user profile of potential computer science students. A demonstrator of the game concept is created to showcase the most important features of the game. First, we will specify the goal of the game and talk about its target group.

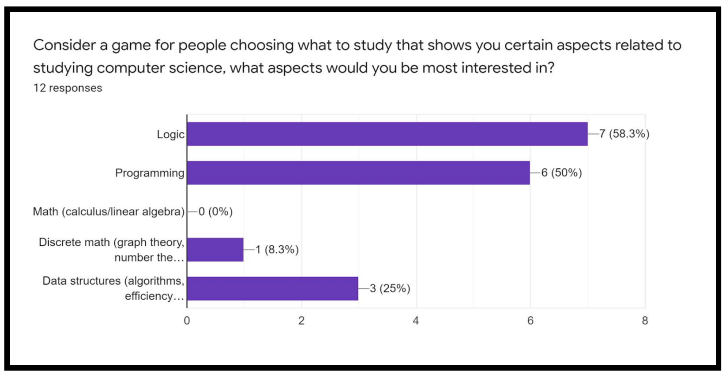
Design Brief

The goal of the game is to inspire high school students to study Computer Science, and to teach them logical reasoning, programming, and the importance of ethics. We hoped to achieve this through multiple persuasion techniques such as increasing immersion, changing the player's attitude, and puzzles that require logical reasoning and programming to solve.

Target group

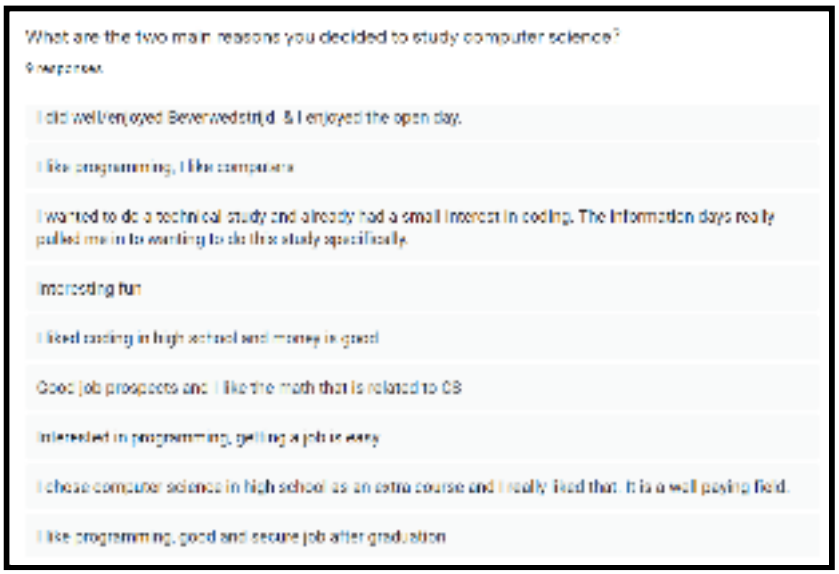
Being a game supposed to help make the decision to start studying Computer Science, we decided it would make most sense to target it towards people in the last years of high school and potentially first and second year university students who are interested in switching studies. This way we could aim our game at students of the ages 16 to 22, and figure out aspects about what they are interested in seeing in a game showing Computer Science through a targeted survey.

To figure out a few aspects of the game we used surveying to find out what parts of Computer Science generate the most interest, what type of games interest the demographic the most, and why someone would choose to study Computer Science. Essentially, the goal was to build persuasion profiles for the target group, what their main motivation for choosing a study is, what they like in games, etc. After conducting the survey, it received a total of 26 responses from high school students (46.2%), current Computer Science students (34.6%), and students of other fields (19.2%). For some questions, the answers didn't generate interesting results or were too vague to draw any conclusions, though some questions gave insight that could be applied in the game to further appeal to the target group. Most importantly, when high school students were asked what aspects of Computer Science they would like to see in a game like this, the ones with the most interest were logic (58.3%), programming (50%) and data structures (25%), while discrete math and calculus/linear algebra generated ample interest. Because of these responses, logic and programming were the aspects we decided to implement in the demo



level. Another interesting find was the types of games the target group enjoy playing. We got varied answers to the question, but in summary adventure, open world and strategy were popular genres, hence adding aspects of those has been important in the game.

When someone picks a study, it is obviously important for them to pick a field they are interested in, but extrinsic motivations such as job safety and good pay are also important to consider. In the survey, when people currently studying Computer Science were asked what the two main reasons they decided to study Computer Science were, 100% mentioned intrinsic factors such as enjoying programming, computers or math, or having a good experience with courses including Computer Science in high school. 55% mentioned extrinsic factors such as the fact that it is a well paying field with high job prospects. With this, it is fair to assume that though many have extrinsic motivation to pick the study, intrinsic motivation is most important, and having some sort of interest in aspects of Computer Science is crucial to make the decision. Because of this, the game is focused on being an intrinsically motivating instructional environment. It lets the player explore their interests within Computer Science but also potentially develops further interest by implicitly showing the importance of having people care and go further in Computer Science not only as a technical field, but also within the ethics of it, as it can have many important implications on humanity as a whole. This is all done through an extreme scenario, which generates more interest in the game as it seems less like an educational tool and more familiar to the target group in the context of the games they play.



Backstory and Setting

The genre of the game is best described as a first person stealth game.The game takes place in a post-apocalyptic city where robots have taken control and are patrolling the city. The player is a computer scientist and for some reason the robots have captured his child. The player of the player is to save the child. In order to do this, the player has to follow clues, sneak past robots. Also the computer scientist has to use its Computer Science skills to solve code-like puzzles and pick up items to analyze robot behaviour to gain an advantage over the robots. In this way the player will eventually be able to navigate to the place where his child is located and save the child.

Game Description

The game is played with a keyboard and a mouse. ‘w’ ‘a’ ‘s’ and ‘d’ are used to move around. ‘space’ can be used to jump. the mouse can be used to look around. ‘e’ is used to pick up items and ‘f’ is used to interact with the items.

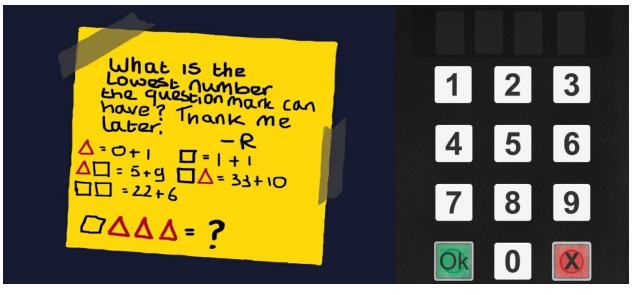
The game starts in a cabin where the player gains some information about the goal of the game. Some pictures are shown of the kid and it becomes clear that the robots have captured your child. A building is shown where the player needs to navigate towards. Also the three laws of asimov are shown. Once the player exits the starting cabin, the player can walk around the city and look for the building that is hinted towards in the starting cabin

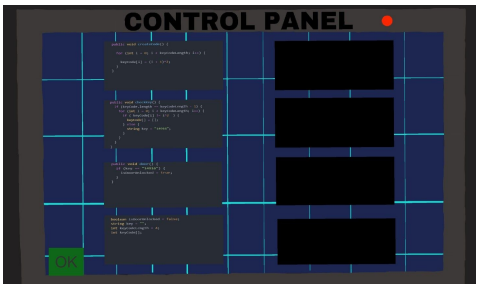
Robots

Robots are patrolling the city in predefined patterns. If the player gets within a certain range of a robot, the robot will start chasing the player. If the player gets within the shooting range of the robot, the robot will shoot and kill the player. If the player is killed, he/she will return to the last checkpoint.

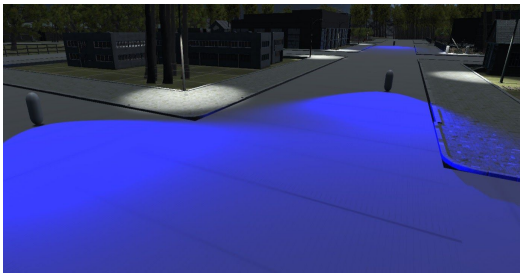
Puzzles

When the player finds the house that is showcased in the starting cabin, the player will encounter a puzzle that needs to be solved before the player can enter the house. The player will need logical thinking to solve these code-like puzzles. In this house new clues can be found on where the player should navigate towards. At this new location, the player needs to solve a puzzle again to find new clues. Also important resources can be found at these locations.





Resources and Items



The player will be able to find various resources and items on various locations on the map. With these resources the player will be able to build objects that give the player the ability to analyze the behaviour of the robots and in this way create an advantage over the robots. In the demo game this is demonstrated with AR glasses that the player finds. With the AR glasses activated, the player is able to see the field of vision of the robots. In this way it is easier for the player to sneak past the robots. More visual information like, the predicted path of movement of the robots could be visualized or different kinds of robots could be distinguished. With this information, the player will be able to sneak past strictly controlled parts of the city.

When the player reaches his child, he/she finds out that it was a trap and that the robots want to kill him because he is a threat to the existence of the robots. The player has to escape from a lot of robots. Finally he/she finds a way to save the child by solving one last puzzle. With this puzzle, the computer scientist has to program the three laws of asimov into the system that is regulating the robots. Now the kid will be freed from the robots and the city returns to a peaceful state

Player types

Richard Bartle described four different types of players: killers, achievers, explorers, and socialisers (Steward, 2011). This game mostly appeals to the explorers, because the player has to discover and understand the game world in order to beat the game. The better the player learns to understand the robots, puzzles, and items, the further they can get in the game and the more new things and areas can be discovered, explored, and interacted with. The game might also appeal to the achievers, since they like to collect tokens by beating challenges in the game. While there are no actual achievements, in this game, the player can collect items by completing puzzles and avoiding robots. The game does not appeal to the killer and socialiser player types, since the player does not interfere with the game world much and the game is not designed to be played with other people. An item that can be used to disable the robots has been discussed during the development process, but has not been implemented. This might have made the game more appealing to the killers.

David Keirsey used the Myers-Briggs personality model to distinguish between four temperaments for gamers: artisan, guardian, rational, and idealist. This game appeals to the rational temperament, because the player has to think strategically and logically to solve the puzzles and find their way around the robots. They have to seek knowledge in the game world and apply that in order to complete the game. The game also appeals to the guardian type, because the player has to be detail-oriented, practical, and organised. The game does not appeal to the idealists and artisans, because the game is not very action-focused or emotional.

This game focuses mostly on the mastery part of the gamer motivational model, because it requires a lot of logical thinking to solve the puzzles and understand the patrol routes of the robots. It also involves a lot of challenges and requires practise, especially in the later stages where the player has to avoid a lot of robots that move in more complicated patterns. In those stages the game also becomes faced-paced, because the player has to think and move quickly to evade all the robots. This game also involves fantasy, since it is set in a fantasy setting and the player gets to be the hero in the story.

Persuasion and Learning Goals

In the game, multiple persuasive elements are present that are meant to change the player's attitude towards Computer Science and to achieve the game's learning goals. These elements can be found in basically all elements of our game.

Firstly, we use the dramatic arc to get the player's attention and to positively influence their engagement. The dramatic arc has been shown to change brain structure, as people will keep their attention to the rising action and then later reflect on it. We implemented this into our game by adding a plot twist to the story. During the whole game the player is meant to believe that they're there to stop all the madness of this robot infested future, that they have a plan to save their child and stop the evil behind it all. However, as the player reaches their end point (the tall building where their child is held captive) it is revealed that it was a trap all along. By creating a capturing story, we hoped to motivate our target group to keep playing the game so that the other persuasive and learning elements of the game are seen as fun and part of the story.

Secondly, according to the lectures on persuasion in games, all games are a very effective way of changing someone's attitude. This is because it is about taking on roles, acting out scenarios, imagining them, and this actually helps in raising understanding and interest for the role being played. This is why we chose for our main character to be a Computer Scientist. The player can now get a feeling for what it is like being a Computer Scientist, and on top of that, we also use this to show the importance of ethical programming by introducing the laws of Asimov. By copying a "possible future", the game is able to impose certain morals and ideas on the player. So through the game mechanics, the rules, the game can convey certain messages, like the importance of Computer Science and the laws of Asimov. This can create a new understanding between the player and what it means to be a Computer Scientist, which will (hopefully) change their attitude in such a way that they will want to study Computer Science.

Next, attitude changes and the transfer of attitudes from the game world to the real world can be done in many ways. Our game uses flow, and the self-determination theory to achieve this. People have an innate psychological need for competence (we like to feel good at something), autonomy (we like to be free in our choices, and to determine for ourselves what to do next), and relatedness (we like to feel like we belong to something or somebody else). Our game uses all three of these things to persuade the player and change their

attitude. Competence is seen in the fact that we use flow, the build up of difficulty and also an increase in personal skill. Additionally, the main character has a reputation as ‘master programmer’, so competence is also present from a storytelling perspective. The autonomy is supported through the open world design, the crafting system where you can decide yourself what gadgets to create and which you don't want (that we did not get to implement however). Although there is also some limit to this, since the player is bound by the storyline. The relatedness also comes from the storytelling perspective, as your main quest is to find and rescue your kidnapped child. These aspects we implemented with the goal to make the player associate more with intrinsic motivation. As a result of this, the player starts identifying with the cause, which relates back to why they should study Computer Science.

Up until now, all points have been about motivating the player to keep playing, to enjoy the game, and to change their attitude towards studying Computer Science. However, there were also multiple aspects of the game that were meant to boost the actual learning of the player so the learning goal can be achieved.

One of these things was to increase immersion so that the player would focus more on the game, and therefore learn more in the process. The game purposely does not tell the player too much about the main character. Because of this it is easier to relate to the character, since the player can fill in certain traits or looks of the character for themselves in their head. This enhances immersion, which in turn makes the player concentrate more on the game, and make them more invested in trying to solve the puzzles which will lead to increased learning.

Another feature we use is a checkpoint system. Checkpoints help with keeping the game engaging. If the game becomes too difficult, and each time the player gets set back to the very beginning, then at some point the player will have had enough and become demotivated. This will have a negative impact on the willingness to continue playing and to learn. However, by designing it in such a way that there’s no big penalty for death, this could also cause players to become less careful when playing. This means they reflect and relate differently to the game. We implemented this despite that because we believed that the perception of life and death in the game is not as important as seeing the full consequences of a future where AI has taken over without becoming demotivated from learning. This way, both of the set learning goals can be achieved.

Lastly, the game uses music and sound effects to persuade. Music has a strong effect on how people feel, and it is very important in setting/changing a mood, changing the way people feel when it comes to certain issues and objects. Music makes a game more immersive, and makes it easier to engage with the game on an emotional level, and this will make it so the player is invested in the game in multiple ways. By having a scary, dark tune playing in the background, we hoped to enhance the player’s imaginative abilities and really make them realize what it can mean for the future if technology really spirals out of control. Additionally, we also use positive sounding sound effects to stimulate the behaviour that we want to see from the player, like when they solve a puzzle correctly (and therefore when they

have successfully learned something). This will hopefully motivate them subconsciously to enjoy learning the new skills by reinforcing the right behaviour with rewards.

Design Rationale

This game constitutes good serious game design, because it does not make the player feel like they are playing a serious game, while still teaching them important skills they will need if they decide to study computer science. To do that, the game has to intrinsically motivate the player, so they will play the game, not to earn a reward, but because they want to play it.

To intrinsically motivate the player, challenge, fantasy, and curiosity are important (Malone, 1981). Gradually increasing the difficulty as the player progresses through the game gives the player a feeling of competence. At the start of the game, there are not many robots on the map and they are not very difficult to avoid, so the player can get used to the environment and game mechanics. As the player makes progress, the number of robots they encounter increases and their patterns become more difficult. Fantasy elements make the player feel more engaged in the game and create a stronger game feel, which is why the game is set in a fantastical environment, namely a post-apocalyptic setting where robots have taken over the world. Keeping the player curious is an important aspect of keeping them intrinsically motivated. As the player progresses through the game, they will encounter new puzzles, items, and new areas of the map. They will also learn more about the story. These new discoveries keep the player interested and encourage them to keep playing.

The self-determination theory states that to intrinsically motivate people, three psychological needs should be satisfied, the need for autonomy, then need for competence, and the need for relatedness (Przybylski et al, 2010). The need for autonomy states that people want to have control over how they play the game and the outcome it leads to. Because this game is set in an open world environment, the player has a lot of freedom in deciding where they want to go and when. To make sure the player does not get lost without forcing them in a certain direction, there are hints in the starting cabin, streetlights along the correct path, and tall buildings in the distance to guide them. To make sure the player does not skip the puzzles, the areas after the puzzles are much more difficult than the ones before that and will be difficult to get through without the item that can only be obtained by solving the puzzle. The need for competence is fulfilled, because the difficulty of the puzzles and avoiding the robots increases as the player progresses further through the game. Because there is no randomness in the game, whether the player completes the game or dies depends solely on the player's skills and strategy. This game fulfills the need for relatedness, because the main goal of the game is to save your child, so the player feels connected to the game and the world in which the game is set through the story. The game does not provide the player with the opportunity to bond with other people, since there is no social aspect, in order to solve that a multiplayer mode could be considered for the future.

The game has a positive feedback loop. The more puzzles the player solves, the more items the player finds, and the easier finding and accessing new areas will be. This encourages the player to keep solving puzzles and keep progressing through the game. The reward structure has a fixed ratio and interval, since the puzzles are located on fixed locations and after solving a puzzle, the player instantly gets access to a new area or item. Since these items help the player with getting through the more difficult parts, this gives them a sense of progression. Aside from the practical feedback, the game also uses visual and auditory effects to tell the player if they are playing the game correctly. After a puzzle is solved correctly, a congratulatory sound effect will play, when the AR glasses are equipped, a sound effect is played and the sight ranges of the robots are shown with colourful lights. When the player enters the sight range of a robot with the AR glasses equipped, the colour of the robot's light will turn to red to signal the player that they do not want to be there. If the player does not run away fast enough, a loud shooting sound effect will play as the robot attacks the player.

This game teaches the player skills that cannot be learned by studying from a book, like problem solving, pattern analysis, and critical thinking. These skills become more and more important as society develops and are especially important for computer scientists, since it helps with solving complex problems more easily (BBC).

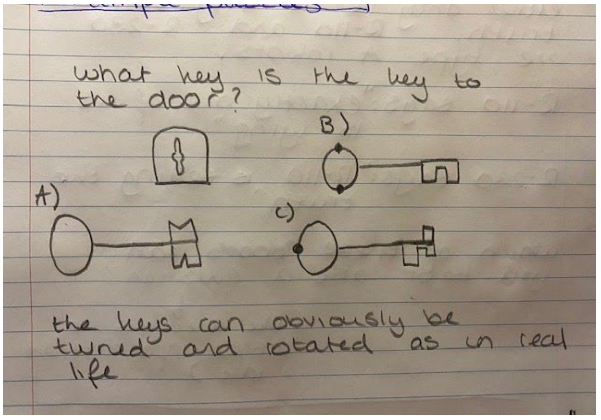
To improve learning, the game was structured to align with four principles of instructional design (Malone, 1981). The perspective principle states that learning is improved if the subject matter can be approached from different perspectives. In the game, the player has to first observe the routes of the robots and then find their own route to avoid them. The autotelic principle says that the initial learning should not be punished severely, so the player does not feel a lot of pressure and has the opportunity to enjoy learning a new skill. This is why the first section of our game has a lot of open space, so the player can run away and avoid being killed by the robots, even if they have entered their sight range. There are also several checkpoints to decrease the severity of the consequences of dying. The productive principle suggests that the player should be able to make inferences about parts of the environment that they have not observed yet. Once the player discovers that the robots are moving in patterns, this knowledge can be used to make avoiding the robots much easier and give the player more opportunity to explore. The personalisation principle states that the environment should be responsive to the player's actions and give the player the opportunity to reflect on themselves and their progress. The game environment is responsive, since successfully avoiding robots and solving puzzles gives the player access to more places to explore and items to find. The game is not reflexive, but this could be added by showing the locations where the player has died in the past, so they can approach those locations from a different direction.

Evaluation

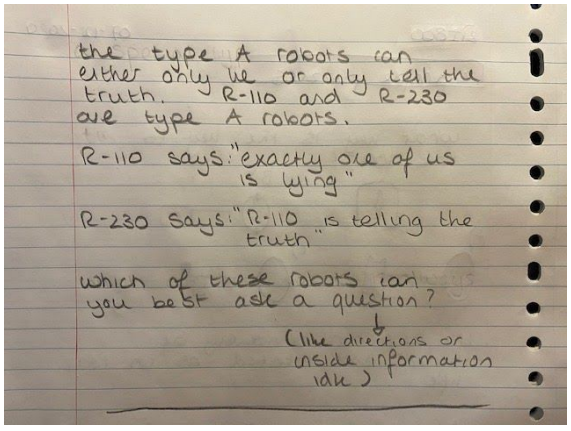
In the limited time we had, we were able to implement many planned features, as discussed in previous sections. However, there were still points to improve upon. The item

system was primitive, and wouldn't have allowed for expansion very easily. It would have been better to use a class-inheritance based inventory system, rather than hard-coding the abilities of the items into the Inventory script.

One of the items we had planned to add was a ladder. This item was shown in the final presentation, but it's functionality was never implemented. Having the time to do so would have improved the game drastically, giving the player more ways to outmaneuver the robots, and added the possibility for secret routes and shortcuts across the map that the player could find and explore. This change would have been an important one to add more depth to the map we created. By adding changes in height, as well as other changes such as more and varied challenge buildings, more puzzles and more types of robots, would make the gameplay feel a little more varied and interesting.



In terms of puzzles there's a few things that could have been improved. Firstly, the game that we created only features a limited amount of puzzles, namely two (although we designed a few more on paper, as seen in these two pictures). If we were to develop this game even more, we would've liked to add many more puzzles in numerous places. Not only did we want to increase the number of puzzles, we also wanted to add more diverse topics for them as a way of getting the player more acquainted with the important fields of Computer Science. Some of these topics include boolean logic and propositions, graph theory, and data structures (this last one mainly because it turned out our target group was interested in this). Our original goal was to focus on the topics that were also present on the selection test, which also included algorithmic thinking, so that the player can have a head start if they potentially want to get into Computer Science. However, because of the limited time for the project, we focused on the two topics that our target group was most interested in, namely logic and programming.



Secondly, we wanted to improve sound for the puzzles, since sound can play a very important role. As mentioned before, in this game we used music as a way of persuading the player, since it has a strong effect on how people feel. Ideally, we would've liked to make multiple different soundtracks for different kinds of puzzles to change the mood and setting as we saw fit for the situation. By adding more soundtracks and more sound effects for interacting

with the puzzle, we hoped to make them more immersive and better integrate the puzzles into the overarching game.

Similarly, the graphics of the puzzles lack a bit behind the rest of the game. Since the backgrounds and detailing of the puzzles are a little bit unrealistic, while the rest of the game is (supposed to be) a close imitation of a real life city, it is possible that the player's immersion is disturbed while playing. Since this can have a counterproductive effect on the goals we wanted to achieve, given more time we would've liked to spend it on improving the visual aspects of the puzzles.

The last thing that we wanted to add to the puzzles was some sort of hint system, since it might be the case that some players simply cannot think of the correct solution. In this case, we would have liked to steer the player in the right direction so they can still come up with the answer themselves and feel the satisfaction of solving a difficult puzzle. Especially the first puzzle can be hard, since simply trying all possible solutions might not be an option, whereas for the second puzzle, the player can try all arrangements of the code blocks until they find the right one. However, since it is said that the code is the lowest number possible, and it contains 4 digits, one might also simply try any arrangement of 0's and 1's until they find the right one (0111).

Another way to make the game deeper and more entertaining would be to develop the robots more. By implementing a sound system, we could create a type of robot that can hear you as well as see you, or perhaps that could exclusively hear you. This would bring an element of stealth to the game, which would fit well with the aesthetic the game currently presents.

This feature would be complex to implement, but even small behavioral changes between types of robots would make them more interesting. Robots that can or can't outrun you, or robots that can be easily maneuvered around. It would also be possible to design a robot that could not be bested, and the player must simply avoid that area as best as they can. All of these changes would require the players to think carefully about their next route, and would prioritize gathering information and using logic to determine the safest path. This would also be more in line with the goal of the game, as it would require the player to reason and come up with a solution, rather than just run between the robots and avoid their lights.

Finally, if time had allowed it, a boss fight was considered to finish off the game. This idea was not developed much, as it soon became apparent that we were not going to be able to create a boss fight in the time we had. But conceptually, a final trial testing the players pattern recognition and decision-making could have brought our game to a new level, and the message delivered to the player would be strengthened.

After showing our project in the presentation, we encountered many problems building the game into an executable. Even though the project ran correctly in Unity, the build lost a lot of functionality, and the player could no longer pick up items. These errors seem to come from the software itself, and was too difficult to solve with the remaining time. With more time, this could have been investigated and fixed, but unfortunately the game now

has most of the item system removed, and the AR glasses system has been modified to accommodate for this.

Conclusion

When creating a game to teach and persuade there are a lot of things to keep in mind. Who is your target group and what are their goals, interests and motivations? How can you get what you want across while still maintaining an interesting game? Throughout the process of making *2050*, we have worked on creating a persuasive environment by coming up with an idea of a game that would appeal to our target demographic, and applying different techniques to encourage playing the game and consequently learning about Computer Science. The game uses puzzles and pattern recognition to showcase some technical aspects of the study, while also heavily implying the importance of ethics in the field by showing an extreme scenario of what could happen if we don't take these things seriously - which might inspire someone to want to make a difference to prevent it. All in all, it is a game that has the potential to teach someone about Computer Science, and maybe even inspire them to study it, but that can be fun to play regardless of previous interest as a lot of the learning is implicit.

Personal Reflection

Alex (1411748)

My role in the group was to create the majority of the code for the game. I worked extensively on the enemies, their AI and their movement. I also worked on the Player's movement and their Inventory and Item systems. Because of my involvement with the details of the project, I also wrote the Evaluation and future plans and improvements for the game.

Douwe (1235324)

It was very interesting to be the only Industrial Design student in a project. It was very apparent that each study has its own way of doing things and has other focus points. As an ID student I found myself being very comfortable with brainstorming and putting all ideas on paper and making sure that we had as many ideas as possible to later narrow down to a founded concept.

As an experience designer I find it important to create an immersive experience. Therefore I focused a lot on the user perspective. The different subjects that the student should learn and the way this game should enthuse students for the study of computer science should come together in a convincing story. I focused on creating this story and how this story shows itself in the game. To do this I created a user journey map.

Because it is an open world game it is somewhat harder to make sure that the player goes to the right spots within the game. Therefore I also contributed to the map design. I

helped with the placements of the robots as well as the placement of the items and puzzles to guide the player to the right spot.

Next to that I created the background soundscape and the interaction sounds in the game to create the desired feel.

What I found most interesting about the process is the part where we needed to combine the user information with the subjects that we need to teach. Here we really needed to find a balance between what is fun to play, what does the player need to learn. Also, It was fun to see that serious subjects within a field can also work as inspiration for mechanics that I would not have thought about otherwise.

Because we were a bit short in time we did not really have the time to test if the way the map is designed and the way all the objects are placed are guiding the player in the right direction without wandering around for too long and feeling lost. I feel like we could have started a little bit earlier on a basic prototype to make sure that the basic mechanics were already working. Next to that, we built the map separately from the story. Because of this, it was a bit of a hustle to make the user journey fit within this map well. Next time, I think it would be better to take the story as a base and start building the city from the end of the map/journey and work your way back to the beginning.

Esmée (1386417)

Overall, I think the development process went well. As a group, we had a lot of ideas, which was both a good thing and a bit of a pitfall, since we had more ideas than time to implement them. Because of that, not all the ideas we had have made it into the final prototype, which is a shame, because I feel like those ideas would have made our game more interesting. Especially a more developed item system and some more puzzles would have created more variance in the game and given the player more freedom. My main role in the team was to create and design the map. I had never done something like that before, so there was a bit of a learning curve and I should have done some things differently and more precisely. I also mapped out the patrol routes of the robots. It would have been better if we had other people (from our target group) playtest the game, to make sure that the difficulty was scaled correctly, but that did not happen due to time constraints. For the report, I wrote the design rationale and a part of the game description. Furthermore, I enjoyed working on the project and the course as a whole. For the next time, I would do more research beforehand, to make sure that I have a better idea about how to do certain things in Unity, so I could be more efficient and organised and I would try to have a more realistic idea about how long things will take.

Filomijn (1431889)

My main role of the team was to research theory and to design and program the puzzles. For designing the puzzle I stuck to a few different steps. First, I wrote down the topic that I wanted to make a puzzle about, so for example logic or programming. Depending on the topic, I then wrote a list with definitions, concepts, or assignments that were important

in the first year of Computer Science. The idea behind this was that highschoolers could already get familiar with some of these things and have a headstart in the selection process/their first year. After writing this list down, I would then brainstorm about how I could turn these things into actual puzzles, and make a new list of all the ideas. From these ideas, I then picked two or three that I sketched out, and eventually I picked one programming puzzle and one logic puzzle to implement into the game. Since I mainly worked on the puzzles, I also contributed heavily to all parts of the report that are about them, and adding to that I wrote about the persuasion elements and learning goals in our game.

Overall I feel like our teamwork went well, and the work was evenly divided. Everyone had their own tasks and responsibilities, which made working together a breeze.

Lucas (1408569)

In this course, my responsibilities have been creating and processing the user survey, gathering potential sources and mapping their use, and making the presentation for the final demo. During the first few weeks a lot of my tasks included research and brainstorming for certain ideas, which I presented in the weekly meetings with the group, but in hindsight, writing more of it down in a structured fashion could be useful for next time. Throughout the process I have tried giving input where I could on different aspects of the game both based on the demographic and general ideas I've picked up in the course, which I believe has been helpful, though for next time I think I should try to get more involved with actually making parts of the game. Despite this I think the role I played in the team and throughout the process has helped make certain decisions in the game, and decluttering some tasks necessary to keep the group going.

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