

A-maze-ing Delft

Proposed backlog for sprint 1

ACS 2025/26 Application Development Project

Group 5

Moritz Lackner

Oskar Lukáč

Dominika Nowakiewicz

Mihail Petrov

Rodrigo Polo Lopez

Tieme van Rees

For sprint 1 we propose the following Product Backlog. It consists of one User Story per developer. Each User Story describes one room which we want to implement in the computer game *A-maze-ing Delft*.

User Story Moritz Lackner:

Dragon room: The room should be filled with a small number of different non-playable characters (NPCs) and interactable objects. The Player should be able to talk to the different NPCs. The dialog system should be branching, so that the player is able to make different choices with different outcomes. The success of the actions the player takes is probability based, including the success of the dialog options they choose. The success rate of the outcome is boosted by different items that the player can find in the room and certain dialog choices.

The game should be able to handle item transfers between the player and the NPCs, as rewards or to achieve certain changes in the room. There should be a shopkeeper NPC who can trade items with the player.

The room is fantasy themed. There is a hole in the ground with a dragon hoard. The goal of the player is to deal with the dragon to get an item that is required to beat the game. The player has to collect multiple items in the correct order and has to succeed in multiple tasks to finish the room. There should be different ways such as a diplomatic option, the option to best the dragon in a battle or brute forcing the room, by trying low probability options multiple times in a row.

As a punishment for failing a task the player could be kicked out of the room and cannot enter for a while. Alternatively, the player is stuck and forced to wait a specific number of seconds.

All interactions are text based by writing commands in the terminal.

Players who decide to play the game multiple times can engage in finding the fastest way to complete the room with the knowledge they gather each time they play.

The player has to choose which item to collect, which choices to make and which chances to take.

Acceptance Criteria:

- Multiple NPC
- Branching dialog system
- Probability based choices
- Different paths to complete the room

User Story: Dominika Nowakiewicz

Type of room: Computer Lab

Type of puzzles: Pattern recognition and Riddle

Layout of the room: computers, drawer, a whiteboard, laptop connected to a big projector

As a player:

- I want to look around the Computer Lab so that I can understand the room layout and search for a needed item to a puzzle
- I want to be able to interact with at least one NPC so that I can get more information and hints
- I want to solve puzzles based on ICT's seminars (Intercultural collaboration, Database Application, Professional Skills and Python Programming) so that I can apply what I've learned in a fun, interactive way
- I want to save my progress so that I can return to the lab later without losing what I've solved
- I want to solve a riddle given by an NPC so that I can gain a password to the laptop

Acceptance Criteria:

- When the final puzzle is completed, the game should reward the player by giving them an item
- Each ICT seminar is represented by at least one puzzle
- An incorrect answer triggers a fail sequence that forces the player to re-try the puzzles again
- Items can be picked up, examined and stored in inventory
- The player can't interact with irrelevant objects (only story-functional items respond)

User Story: Mihail Petrov

As a player, when I enter the Arcade Room on the 2nd floor:

- I want the game to change from the normal text-based interface into a 2D mini-game, where I control my character on a small maze map using arrow keys.

- The mini-game maze should represent a simplified part of the university (e.g. hallways with walls and locked doors).
- I must navigate to special markers (rooms inside the mini-maze) that each ask me for a Python/programming(undecided) quiz challenge.
- Only if I answer the challenges correctly, I receive special items (e.g., “Keycard A” or “Access Code”).
- Collecting all required items unlocks the exit of the mini-maze.
- If I fail challenges, I get sent back to the starting point of the Arcade Room, and I must retry until I am successful.

Acceptance Criteria:

- Entering the Arcade Room changes the interface into a 2D grid view (mini-game mode).
- The player can move with WASD/arrow keys.
- The mini-maze contains at least 3 challenge markers (based on material learned from the course curriculum).
- Correct answers reward the player with items needed to continue further with the mini-game; wrong answers reset their progress inside the mini-maze.
- Exit only unlocks when all items are collected.

On completion, the player returns to the main game with the new item (Could be represented as a “PASS” for completing the mini-game room, needed to continue with further rooms in the main game) in their inventory.

User Story: Rodrigo Polo Lopez

The player enters the control room and finds a keycard lying on a desk. After picking it up, they discover a panel with several loose network cables that need to be arranged in the correct color order.

The solution is also inside the room: a diagram hanging on the wall shows the correct sequence.

If the player connects the cables correctly, they receive a USB stick in their inventory, which serves as the digital key to unlock the next stage.

If they place the cables incorrectly, they are sent back to the corridor and must try again.

User Story: Tieme van Rees

Cyber-Room:

You enter a glowing data chamber.

In front of you, a terminal blocks the exit, its screen flashing: „Access denied, security code required”.

The walls are tall screens filled with cascading green code, but most of it is glitching, stuttering, and breaking apart.

Next to it, three panels flicker with mathematical clues.

Each panel represents one digit of the 3-digit escape code.

Each panel contains a scratched of number with a math equation above it.

The player must solve every equation to get a number for the security code.

The three computer panels are not in any specific order and not in the same as the security code.

Therefore, you must try all the sequences with the numbers you obtained.

Once you have the right security code the middle computer panel opens so you can take the key for the next room.

Acceptance criteria:

- Locked terminal requires a 3-digit code.
- The player is shown three complex math problems.
- Wrong answer -> “Access denied” (retry).
- Correct answer (...) -> terminal shows “Access granted” and the panel opens up with the key for the next room.

User Story: Oskar Lukáč

Nothing submitted

ACS 2025/26 Application Development Project

Identified bottlenecks:

Dialog System	Branching logic, reward logic
Probability System	Balancing, dynamic modifiers
Inventory Management	Transfer mechanics, consistency between rooms
Puzzle Design	Consistency, failure handling, reward logic
2D Mini-Game Integration	Different UI and input mode
Command Parser	Flexibility vs reliability, avoiding too many commands
Room Transitions	Maintaining state across rooms
Debugging & Testing	Managing complex, branching states