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CS213 - Milestone 3 proposal

1. Overview

Context/Game story

Sneak Cellulo is a game about a robot that has to get from a certain point to another without getting caught by two other robots that have a field of vision and roam around the playable area following a pattern or randomly. The player's cellulo has to sneak around the two other cellulos (hence the name “Sneak Cellulo") in the shortest amount of time. There is no actual story in this game.

Application

Sneaky Cellulo is an entertainment game. Nevertheless, the game will make use of the theory topics seen in class to offer the user an intuitive and enjoyable experience. The player will receive Haptic and visual feedback to inform the player on what is happening. The interface will inform the user on what is going on in the game and will try to not overwhelm him/her.

2. Game mechanics

Game Goal

The main goal is not to get caught by the two other cellulos that have a certain field of view and that are called guards, and to reach the end in the least amount of time possible. The player starts at a certain position of the map and has to sneak his way to a designated endpoint. Obstacles and guards will force the player to think about the best strategy and the best trajectory to get past the current level.

Menu and User Interface

The first scene is the menu, and it is the entry point of the game. The player is met by different buttons with different actions, such as to start the game, to configure some settings, to choose the level and the difficulty, and finally to quit the game.
The second scene is the game itself. The player will be able to see its own cellulo, the two other cellulos, which will have a visible field of view to simulate a flash light, and the map.

Players and Map

Sneak Cellulo is a one player game. The player has to work through several levels with different properties and layouts depending on the current difficulty.

Agents

In the game, there are two types of cellulos. The sneaking cellulo, which is controlled by the player, and the guards, which have a flashlight emitting from one side. The guards will move around differently based on the level the player is currently on. They can either follow a designated path, move randomly or stay at a defined position. The flashlight zone is visible in the virtual game. It will allow the player to gauge the area of effect of the guards. If the player is caught, the cellulo will give haptic feedback to the player to signal him that he was seen and either he has lost or he has to start the level over. There will be walls that will also give a haptic feedback to the player, so the cellulo will push the player in the opposite direction of the wall.

Phases evolution

The game will offer different levels with increasing difficulty. First the map configuration will be very basic for exemple, with little obstacles and no real strategy, the player needs not to be caught by not moving. Little by little it will get more challenging with the cellulos moving around and being faster and smarter.

Player view

There will be a single view. It will be a top down view on the map, that will offer the user the best view of everything happening in the game.

Usability

The user can control the robot with the keyboard in the virtual version and can control the robot by hand in the real-world version. Obstacles and guardian's lights will be visible on screen, and if possible the map will be printed on a sheet of paper.

Real Robots interaction

The real robots are manipulated by the player and the game and interact according to the virtual game. The haptic feedback is provided when the player is hitting a wall or when it has been caught. The robot guards move also like their representation on the virtual game, following the same patterns.

3.How to address the theory

The menu will be simple and intuitive for the player to easily understand the goal and the best strategies. Ideally there will be a tutorial when starting the game that would explain the basic principles.

The different levels of difficulties will make a wider range of people enjoy the game. We will also take into account the flow state introduced by the psychologist Mihaly Csikszentmihalyi so as not to make the game too boring or too challenging, and adapt it to everyone.

4.Design/Implementations challenges

We think our biggest challenge will be how the cellulos interact with the different levels and making the levels fun without them being too hard. The levels will have different characteristics and cellulo positions. We will have to implement a path finding algorithm to allow the guards and player to move to the right position to start the level. Interacting with walls and finding a way to make the player feel that there is a wall in the real-world might also be quite challenging. Another great piece of challenge will be to find a way to efficiently manage multiple scenes, as the game is made of various levels.

5.Task division

- Diego: UI Interface, Menu, Visual elements
- Jeremy: Game managing scripts, scenes and score handling
- Sebastian: Cellulo behaviors scripts