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Activity 6B: Design your Snake Game

1. Research and Design Issues:
   1. Tangible Game (Children):

A tangible interface would be great for children. We think it would be best to have a big screen to display the snake game, along with a wall-mounted tablet where the child could control the snake with either a pen or freehand gestures. Freehand gestures would probably be ideal, because we would not need to worry about the hygiene of the pen.

* 1. Wearable Interface (Young Adults):

Wearable interfaces are very popular with young adults; just look at the success of Pokemon Go. They provide a means of interacting with digital information while moving through the physical world. We think it would be best to emulate the success of pokemon go and design a game that ran on a phone app, but synchronized with objects in the real world. Young adults could then play the game on the move by navigating through different pathways in a city to build their snake. It might be difficult to make the game snake because it takes time to move places in the real world.

* 1. Shareable Interface (Elderly People):

A shareable interface would be good for elderly people because it could be used in nursing homes and marketed as a group activity. We think it would be best to give each player a tablet to play the game, where each person can control a snake.

1. Hypothetical Scenario:
   1. Tangible Game (Children):

The game would be played on a large screen in a room. The screen could be placed in a public place so that other children can watch while one child plays. The snake would be on the screen and controlled by a pen on a small tablet mounted to the wall.

* 1. Wearable Interface (Young Adults):

The game would be played with a phone app. The phone app would track the user’s movements through the real world as they visit real-world locations to collect food for their snake. The players can see their performance verses their friends. Players would have to visit places without retracing their steps.

* 1. Shareable Interface (Elderly People):

Each player has a tablet and plays in a game that is hosted over a P2P connection. Each player controls their own snake and several pieces of food are available on the map at the same time. Players would need to build their snake without crashing into themselves or other snakes. The player with the longest snake (alive or dead) at the end is the winner.

1. Specific Design Issues:
   1. Tangible Game (Children):

The tablet and pen interface would need to be cleaned daily for hygienic issues as children are dirty. It would also need to be sturdy enough to withstand abuse. It would be best to have a wall-mounted surface so that children can not stand on it or fall down. It is better to have one snake at a time, because otherwise it is a shareable interface.

* 1. Wearable Interface (Young Adults):

The location navigation (GPS) would need to be very accurate to track user’s specific movements through real world locations. It would also need to be working and reliable across different phones and service providers. The servers would need to be reliable because it would be very annoying to take time to go somewhere in the real world to play a game, only to have it not work.

* 1. Shareable Interface (Elderly People):

The interface would need to have very big icons and graphics so that people with impaired vision can see them. The game should also probably not be too difficult and easy to understand. Since it is shareable and multiplayer, it would be better to have each player control their own snake. As there are multiple snakes, we need to have multiple pieces of food available at a time, otherwise one snake could eat all the food and get bigger and bigger. Snakes should not disappear when they die either, to make things harder for players that would rather wait for the big snakes to die, then build the largest snake with no competition to win the game.

1. Pros and Cons:
   1. Tangible Game (Children):
      1. Pros:
         1. Can be played in public with friends.
         2. Group activity.
      2. Cons:
         1. Requires a big space because the screen is large.
         2. Requires adult supervision.
   2. Wearable Interface (Young Adults):
      1. Pros:
         1. Multiplayer.
         2. Competitive, can be played with friends.
         3. Gets you out of the house.
      2. Cons:
         1. Sometimes you don’t want to have to go out to play a game.
         2. Hard to keep track of things while moving around in the real world and having to look at your phone to play.
   3. Shareable Interface (Elderly People):
      1. Pros:
         1. Multiplayer.
         2. Competitive, can be played with friends.
      2. Cons:
         1. Expensive, requires a tablet for every player.
         2. Individual tablets can break or malfunction.
         3. Requires a reliable local connection.