Assignment 05, Group M01, Mon 12-14 (English)

Julian Jürgen Janson (2548428)

Hassan Mahmoud Soliman (2576774)

Koushik Chowdhury (2572865)

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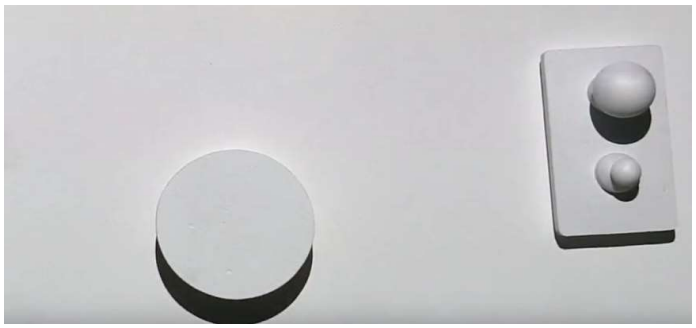
Exercise 1 - Interface Types: 8

Speech based Interface: We can design the direction for Pac-Man with voice command, like in which direction, the user wants his Pac-Man to go (right, left, up, down). We can design the 'Lives' options. 2
After eaten by 'enemy'. The user can start the game again by voice command, like by saying 'use lives' command or the user can leave the game by saying 'exit'.

Touch based interface: We can design the Pac-Man game in touch interface. Here, the user just needs to touch certain point to show the direction to the Pac-man. Whenever the user finds an empty path, he/she 2
can touch that, so that the Pac-Man go that way. After eaten by the 'enemy', the user can simply touch the 'Lives' option to generate the game if there is 'lives' available or otherwise the user can touch the 'exit. We can design that.

Tangible based interface: We can add the following tangible option to our Pac-Man game. By pressing round tangible option, the user can start, take 'lives' option and can 'exit' the game after finishing all the 2
'lives'. With the right side tangible option, the user can go right or left direction by rotating (clockwise for right, anti-clockwise for left) the bigger tangible one. With smallest one, the user can go up and down by rotating it. (the right options are a bit strange, butr still ok)



Virtual-reality Interface: We can design our Pac-Man game in virtual reality. At first, the user needs a virtual headset and a one-button remote control. We can design the start, lives and exit part for the game, 2
like whenever the user press the button in the remote, he/she can start the game, take 'lives' and can exit after finishing all the lives. We can design the moving part by moving the hand (the hand in which the user holding the remote). The user can see all of the interaction result in the headset monitor.

12 **Exercise 2 - Weekly pill case interface:**

- Assumptions:-
  - -There is a sensor that learn when the user adds a pill within a certain case.
  - -Touch Screen has a display which is split into 6 equal portions, each corresponds to a certain case.
  - -Data processing is done through the Internet.

1. One feature can be provided is to display the number of pills in each of the 6 cases for the user. The number presented in each case will be displayed in its corresponding portion of the display on Touch Screen, and it will be monitored by both sensors for adding and removing a pill. User can touch or press on it with a single finger to change it manually by displaying a number picker to choose a number from it.
3

2. Second feature can be added is to let user set day and time for each case. As a result, this can remind him of when he should take the pill corresponding to each case by flashing this portion of Touch Screen till user turn it off. It will be controlled by a Toggle button, when it's on, User can touch on the day and time to change it by displaying a day-time picker to choose a certain day and time from it.
3

3. Third feature can be added is to let user set the name of the pills in each case. The name will be displayed on the Touch Screen corresponding to each case. User can touch or press on the name to change it by displaying a virtual keyboard where he can specify a new name for the case.
3

Sketch & Description:-

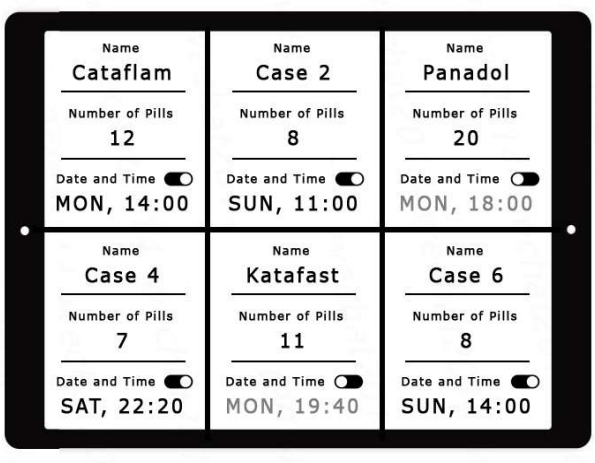


Figure (1)

Figure (2)

-Touch Screen is split into 6 sub-parts each corresponds to a certain case. There will be a default name given to each case e.g. "Case 4" in Figure (1). User can then change it manually by pressing on it and set it through a virtual keyboard. Number of Pills will be controlled automatically by two sensors for detecting whether user added or removed a pill from a certain case. User can also set it manually. Day and Time can be turned on or off. If it's on then this sub-part of the display will flash according to the day and time set by the user. User can then turn it off to stop flashing.

Exercise 3 - Body-based Interaction: 11

1. In First Person shooter there is probably nothing better than a VR glass that tracks your head movement so that's in for sure.
   Also there should be an option to combine hand and foot input, but because of space of the users
   3 home there should be an option to select if you want to use them.
   Nevertheless I expect that both is used and you can create 2 controls, one for each hand and track these positions of the controls, also the foot control should be some kind of moveable platform, so that the user can move without actually moving.
   You can use these both to combine a moving and turning of the user itself to interact in the game so this is quit more realistic for the user.

2. Looking around

   This one is quit easy because the user could just move his/her head around to look around in the
   1 game or at least to start a mode to look around and then move with the hands to turn the direction.

   Running

   1 For running the user could do a run move on the position he stands without actually running to start the run move and do it again to stop.

   Aiming

   For this one you could let the user point into the display direction and show him an aim marker
   1 and let him aim with pointing to the display (like nintendo wii did)

   Shooting Enemies

   Shooting is actually hard to do, I think you could do a finger gesture (depends on how good the
   1 tracking system is but kinect should do this) to shoot, because if you let the user move the arm around it could be misunderstanding with other gestures.

Advantages:

1 -The user have a better feeling of playing the for example character of a game if he actually perform some moves which results in a better game experience

1 -the way to interact is more natural what results in a more accurate user input and a better result in the game itself because its easier to get a feeling if you point on the screen and move to shot as if you pull a trigger

Disadvantages:

1 -Some moves are slow to perform and costs a lot of time what's not good in fast games.

1 -Users need to learn all moves which can be a lot if there are more complex games.