INFO3315 mini assignment 3

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* 1. For a multi-touch screen, fat finger problem means the misclicks that happens due to size of interface is incompatible for size of fingers, usually ‘fat’ ones. For example, user with big fingers may want to touch a button on the screen, but the first thing his finger touched is the button next to the one he wants.
  2. the fat finger problem mainly bothers me when I’m trying to type message with my phone. Due to the fact that each letter’s button is almost half the size of my finger, I always mistype a lot when trying to type messages. It’s even more annoying when trying to type passwords, usually leads to a clueless fail because I can’t see the actual input.
  3. dual finger offset technique can be used to effectively resolve above issue. By having the cursor having an offset difference with my typing finger, I will be able to see the actual position of my cursor when typing since my finger no longer blocks it, therefore reducing mistypes and fixing the problem.

2.1 the Midas touch problem may happen when a user is trying to read through content on different buttons. Due to it’s hard for human to precisely control their eye movements, a user may accidentally send in ‘click’ command to the device when he navigates through the interface’s buttons, and the device will click it. This will lead to unwanted misclicking and reduces the effectiveness of the eye-gaze interface.

2.2 the interface can be redesigned to monitor specific motion input from user to distinguish between navigation operation and selection operation. For example, navigation operation can be done by pure eye tracking that makes the cursor go wherever the user looks at. And make double blink be clicking operation, this way the interface will be able to distinguish between specific input and human normal eye action.

3.1 speech: the game’s graphical interface does not need to be changed at all, while all user inputs can be changed from keyboard input to voice input. User will be able to control the pacman by saying ‘up, down, left, right’. The game will be easier to play for the handicapped people, but the voice may not be able to be identified correctly by the system, and therefore reducing the input accuracy. Also, speaking takes more time than pressing key, and this may result in bad user experience since the game may lose because of reaction delay.

Touch: the game’s overall graphical layout also doesn’t need to be changed. There can be a virtual joystick that appear on the touchscreen and let the user control the pacman by the joystick, instead of pressing keys. On this way, the game can be fit on a small touchscreen device like smartphone more easily and user will be able to control the pacman with only one hand. However, joystick control for a 4-direction game may not be as accurate as keyboard.

Tangible: the game will be fit on a big desk. While the layout of game like maze, pac, and monsters are remained the same, the pacman will be a solid physical object that the user will be able to move it on the disk by hand. By this way, the maze ‘s boundaries can be somehow removed since user can freely move the pacman in the physical world. Monsters will be able to move quicker as well to catch the user, this will make designing hard to consider the physical space.

VR/AR: the game will be in first person view. User can act as pacman on themselves, walking in a maze, eating pac dots, and dodging monsters. A minimap will be placed within user’s view to give information about current location. User input can be key, hand-held controller, or by movement monitoring device. The game will be more immersive, but harder to play, and can also be scary for some users.