CS 3340 Group Project Report

Group – The Creative Comets

1. Description of the program

This program is called Mind Reader Game. The program first asks the user to think a number in head which is between 1 to 64. Then the program will display card which contain 32 number between 1 to 64 randomly for 6 times. The program will also ask the user whether the number is in those cards every time the card is displayed. At the end, the program will display the number the user was thinking.

1. The challenges that we had can how we overcome them

The very first problem we encountered is to figure out the algorithm behind the game. Then we figured out that on each card the numbers that are really used are 32, 16, 8, 4, 2, 1 for each round. As a result, the program can figure out the number at the end.

The second problem we encountered is how to display the numbers. If we directly load the address to display the numbers, it will only print a string of the address. Then we figured out that we can use the ASCII numbers to help us display the numbers.

The third problem we encountered is how to reduce the memory. After a lot of attempts, we finally only used 3 lists, which are list1, list2, display list to complete the game.

1. What I have learned by doing the project (individual)

The first thing I learned is that when coding a program, the very first thing to come up with the best algorithm. We start the coding before we discuss the algorithm in detail, which result a lot of our code are rewritten later. That waste a lot of time.

The second thing I learned is that when we are doing our own part of the program, it is important to keep the consistency of all the variables. In that way, it will be much easier to merge the code at the end.

1. Algorithms and techniques used in the program

* Store number 1-64 into list 1
* Used random generator function to pick up 32 numbers to list 2
* Condense down the other 32 numbers to the first 32 byte in list 1
* Using a pointer to pick up number in list 1 from 32 to 63 to refill the list
* Used insertion sort to sort the number that is needed to display
* Display the 32 numbers using ASCII numbers
* Repeat all the steps above for 5 times to get the number that the user is thinking
* Display the number that the user is thinking at the end

1. Contributions of each team member (individual)

Cameron Jackson: doing the random generate number part and the part of displaying the numbers. Also do the extra credit for playing the sound.

Kaitian Li: doing the part of sorting, merge the code and debug at the end

Ruiwen Hu: doing the part of refilling the used number to the display list and adding comment to the program

Esther Gong: doing the part of refilling the used number to the display list and summarize the concept of algorithm and techniques.

1. User manual

* First think a number between 0 to 63 in your mind
* Click yes to start the program
* Click yes if the card is displaying your number, or click no if the card is not displaying your number
* After displaying 6 cards, the number in your mind will show up on the screen
* Click yes to play the game again, or click no to end the game