**COMPUTER PROGRAMMING 2 (OBJECT ORIENTED)**

**MAIN CASE STUDY**

**ICS 112**

A Case Study

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Problem Description (Main Case Study Problem 1)

Guess the Magic Number

This problem is about creating a program that will generate a random number greater than or equal to 0 and less than or equal to 50 for the user to guess. The program will then ask the user to input a random number and if the user inputs the generated number the program will output a message. However, if the random number entered by the user is less than the generated number the program will prompt the user that his input is less than the generated number. Same goes when the input of the user is greater than the generated number but this time the program will prompt the user that his input is greater than the generated number. The user is entitled to guess the generated number for 5 times but after those tries the guessing game will stop and will ask the user if he would like to try again.

To make it easier for the user to guess the number correctly, the program will output different statements after the user inputs a number. First, when the user’s guess is greater than or equal to 30 the program will prompt the user that his guess is very high (if guess is greater than the magic number) or low (if the guess is less than the magic number). Second, when the user’s guess is greater than or equal to 15 and less than 30 the program will prompt the user that his guess is high or low. Third, when the user’s guess is greater than 0 or less than 10 the program will prompt the user that his guess is somewhat high or somewhat low. Finally, when the user’s guess is equal to 0 the program will prompt the user that he have guessed the magic number.

Finally, The program will make use of the (Math.random()) method to be able to generate a random number and due to it making an output of a double the program will have it declared into an int. In addition, for verification purposes the program will then output the generated number. Absolute Value will be used for the difference of the magic number and the guessed number with the use of (Math.abs()).

Sample Output (Main Case Study Problem 1)

