**PROJECT Functions, Random Number Generators ( Lotto Game ) 50 points**

**Objective** To write a program that will allow a user to try their luck and play a pick 3 lotto game with an option to play Fireball  ( for extra credit ) !

***PROJECT DESCRIPTION***

Write a program that will prompt a user for three numbers whereby the numbers will be then checked against a computer - generated series of three random numbers that are

in sorted order. If the user numbers match each number generated by the computer as sorted they win.

**[ Example ]**

Numbers generated by computer = [ 1 , 5 , 6 ]

User entered values = [ 1 , 5 , 6 ]

Bingo they win big money!!

Create at least one function, called **checker**, to check the user values against the machine generated values. If a match occurs, return **True** to the calling environment, else return **False**. Then, in your calling environment, you can simply respond back to the user that they have either won or lost their pick 3 game based on the returned Boolean value from your **checker** function. Congratulate the user if they won and issue a print statement stating a nice $ 100 cash prize will be coming their way soon! If a loss occurs display some message such as " Nice try, better luck next time around!!."   
 Display also the pick 3 generated numbers at the end of the program no matter if the user has won or lost.

Run your program and take snapshot(s) of a sample loss and a sample win!

***Information about This Project***

An easy way to generate and sort random numbers can be as follows

**sorted(random.sample(range(0, 10), 3))**

Here a sample list is generated with numbers ranging from 0 - 9 with a range total of 3 values.

Note: each number generated by the computer must range from [ 0 - 9 ] inclusive.

Btw: Do not forget to **import random** at the top of your code, for any generated random values produced by the mighty python!

Check this site if you like for additional possible random methods provided by python:

<https://docs.python.org/3/library/random.html>

Here is an example of a program segment for generating and displaying some random numbers:

**[ Random Numbers in Python ]**

**import random**

**list = sorted(random.sample(range(0, 10), 3))**

**print (list)**

**for count in range(len(list)) :**

**print (" random number: ", list[count])**

**[ Output ]**

**[0, 6, 9]**

**random number: 0**

**random number: 6**

**random number: 9**

Here is an example of a program segment for a sample user - defined function:

**[ Function in Python ]**

**def sum( arg1, arg2 ) :**

**# Add both the parameters and return them."**

**total = arg1 + arg2**

**print ("inside the function body : ", total)**

**return total**

**print (sum(10, 20))**

**[ Output ]**

**inside the function body : 30**

**30**

***Steps to Complete This Project***

**STEP 1**  **Open the Python IDLE IDE and Write the Program Code**

Open the Python IDLE IDE ( Integrated Development Environment ) or similar Python development environment on your computer.

You will notice when you initially open Python, the default is an interpretive shell allowing only for single commands to be given. You really need to enter in a whole program then execute it to work any of the labs for the course. To start entering code into IDLE go to **File > New File** from your menu. This will allow you to enter your source code in an editor style format like Notepad.

**STEP 2**  **Write the Program Code**

Write theprogram code that will satisfy the input and the output requirements of this software application. You can use some of the sample code fragments shown above to assist you in writing your program code statements.

**STEP 3**  **Test Your Program Code**

Test your program with various executions to show different possible results.

**STEP 4**  **Submit Your Project**

Submit your program source code and screen snapshots of your output and place the files in the appropriate assignment submittal box.

**STEP 5**  **Grad Requirement**

To make the program more interesting and challenging, add a loop in to give the user three tries at a guess to see if they can win. This would be like a simulation of the user buying like three tickets for a chance to win against the lucky pick 3 number of the week! Show snapshots of this in action.

Allow also a user choice if they wish to play pick 3 with the Fireball option.

Include one extra Fireball value to be randomly generated by the computer. The

value can be used as a *wildcard* where the value can be used in place of any

generated number if necessary to help make the user lucky and match the pick 3 generated numbers! Congratulate the user if they now can win with the help of the Fireball and add an additional $ 50 to their cash winning total for playing Fireball!

Example: User picks [ 1, 2, 3 ] as values. Computer generates [ 0, 2, 3 + a Fireball value of 1 ] . The value 1 can be checked as a wildcard number to

replace the 0 , 2 or 3 numbers to help match the user input values. Show the

additional Fireball result along with the pick 3 generated number at the end of

the program no matter if they win or lose.

**STEP 6**  **Online Video Support**

To gain an understanding of the Pick 3 Fireball Lottery you can watch the video located at this Web link:

[**http://www.illinoislottery.com/en-us/Pick\_3.html**](http://www.illinoislottery.com/en-us/Pick_3.html)