National University

of Computer & Emerging Sciences Peshawar Campus

Name: _____ Section___ Roll No: _____

Program: CS
Semester: Fall – 2020
Time Allowed: 1 hour 30 Minutes
Course: Programming Fundamentals Lab (CL118)

Examination: Lab Exam
Total Marks: 50
Date: 09th February, 2020
Lab Instructor: Muhammad Hamza

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1. (DO NOT USE BUILT-IN FUNCTIONS)

You are given a string and your task is to swap cases. In other words, convert all lowercase letters to uppercase letters and vice.

2. Your state is in a process of creating a weekly lottery. Once a week, five distinct random integers between 1 to 40 (inclusive) are drawn. If a player guesses all of the numbers correctly, the player wins a certain amount.

Write a program that does the following:

a. Generates five distinct random numbers between 1 and 40 (inclusive) and store it a list
Hint:to generate Number randomly do the following:
from random import randint
print (randint(0, 9)) #it will generate a single number in between 0-9 range

b. Sorts the list containing the lottery numbers. Make your own sorting function you are not allowed to use built-in sort function

c. Prompts the player to select five distinct integers between 1 and 40 (inclusive) and stores the numbers in an array. The player can select the numbers in any order, and the array containing the numbers need not be sorted.

d. Determines whether the player guessed the lottery numbers correctly. If the player guessed the lottery numbers correctly, it outputs the message ‘‘You win!’’; otherwise it outputs the message ‘‘You lose!’’ and outputs the lottery numbers.

Your program should allow a player to play the game as many times as the player wants to play. Before each play, generate a new set of lottery numbers.

3. You have store a record of students in a file record.txt.

To make a file:

Make a function to write in a file write_data(). Each record contains the student's name, and there marks in Maths, Physics and Chemistry out of 100(make sure the user is not allowed to enter marks greater than 100). The marks can be floating values. The user enters names and marks for students. You are required to save the record in a record.txt.

Once you are done with the making file. **Make a function read_data(d)** that takes empty dictionary as a parameter Read the data from record.txt and add it into dictionary as a name and percentage (percentage is total marks in all three subjects /300 *100)

The user then enters a student's name. Output the average percentage marks obtained by that student, correct to two decimal places.

4. Write a program that asks the user for name, hours worked and on the basis of entered information generate a salary. To generate a salary per hour rate is $12.50
For example, if the value of name is "Rainbow" and hoursWorked is 45.50, then the output is:
Name: Rainbow
Pay Rate: $12.50
Hours Worked: 45.50
Salary: $568.75

5. A carpet cleaning company estimates cleaning prices assuming a room size of 10 feet by 12 feet at a cost of $39. Rooms smaller than 10 feet by 12 feet are charged at the standard room size. Rooms larger than 10 by 12 feet are charged the standard rate plus $.25 per square foot for each foot greater than the standard room size. Design a program that asks the user for the number of rooms to be cleaned and the size of each room. Calculate the size and cost of cleaning the rooms and print them.

For Submission

1. Create a .py file for each question and copy your code in it. Name the file with relevant question number.
2. Copy all .py files in a folder.
3. **Rename** your folder name as rollumber_Name_section e.g **p176001_Abc_SectionITC.docx**
4. You also need to submit a screenshot of your answer's output. Save the screenshot within the same folder you created in step 2 and rename it with the relevant question number.