

DEPARTMENT OF COMPUTER SCIENCE

MCA I Semester Python Lab, Assignment-3

Q.1 Write a python program to calculate the result of the students studying in Jampeling Central School. Save your file as “**Student Result Program**”. The program should have three functions defined: **student_biodata()**, **student_mark()**, **student_remark()**, and **student_result()**. The program should accept the name of the **student**, **class**, **section**, and **marks for any five subjects** from the user.

Calculate the **percentage** of the student and generate a **remark** according to the following conditions:

- If a student’s percentage falls below 0 or above 100, generate an error message, *“Error: Check the mark entry!”*
- If a student’s percentage falls between 0 and 45, they are considered a *failure*.
- If a student’s percentage falls between 45 and 100, they are considered a *pass*.

Display a result in such a way that the student’s name, class, section, percentages, and remark are generated.

Q.2 A text file “PYTHON.TXT” contains alphanumeric text. Write a program that reads this text file and writes to another file “PYTHON1.TXT” entire file except the numbers or digits in the file.

Q.3 A binary file “book.dat” has structure [BookNo, Book_Name, Author, Price]

- Write a user define function `Create_File()` to input data for a record and add to book.dat
- Write a function `Count_Rec(Author)` in python which accepts the Author name as parameter and count and return number of books by the given author that are stored in binary file book.dat.

Q.4 Write a Python program to create a class that represents a shape. Include methods to calculate its area and perimeter. Implement subclasses for different shapes like circle, triangle, and square.

Q.5 Write a Python program to create a class representing a bank. Include methods for managing customer accounts and transactions.

Q.6 Write a Python program to define a class that can add and subtract two numbers.

Q.7 Write a Python program to make a list of students along with their marks using class.

Q.8 Create a Time class and initialize it with hours and minutes.

- Make a method add_Time which should take two time object and add them. E.g.- (2 hour and 50 min)+(1 hr and 20 min) is (4 hr and 10 min)
- Make a method display_Time which should print the time.
- Make a method Display_Minute which should display the total minutes in the Time.
E.g.- (1 hr 2 min) should display 62 minute.

Q.9 Write a Python program for building restaurant menu using class in Python.

Q.10 Write a Python program using multilevel inheritance to implement student admission in MCA course and display the result by assuming Student as base class. MCA is derived from Student and Result is derived from MCA. Choose appropriate properties and methods to be included in the above classes.