

Python Programming Laboratory (CSL48)

USN:

Week #: 04

Semester:

Section:

Date:

Instructions:

- **Implement the following programs using python language.**

Programs:

1. Develop a python program to create a class called as BankAccount with attributes like CustName, AccountNumber, Balance, TypeofAccount and Address. Write the methods for withdraw(), deposit() and displayDetails(). Create multiple objects and simulate the bank operations.
2. Develop a python program to create a class called as Employee with attributes like EmpID, EmpName, EmpDesignation, Experience and Age. Write the methods for addEmployee(), displayDetails() and calculateSalary(float basic). The salary of an employee should be calculated based on the following criteria:
 - If the employee is below 30 years with 5+ experience then the final salary 1.5 * basic.
 - If the employee is below 40 years with 5+ experience then the final salary 1.75 * basic.
 - If the employee is below 40 years with 10+ experience then the final salary 2 * basic.
 - If the employee is below 50 years with 20+ experience then the final salary 2.25 * basic.
 - If the employee is below 50 years with 25+ experience then the final salary 2.5 * basic.
 - If the employee is below 58 years with 30+ experience then the final salary 3 * basic.
3. Develop a python program to create a class called as "FourthSem" with attributes like RollNum[20], Test1Marks[20], Test2Marks[20] and Test3Marks[20]. Calculate class average for each of the three tests for a class of 20 students. The program should also calculate the average of each of the student scores in those three tests and display. Display the top 5 and last 5 scores of the class for every test.
4. Develop a python program to create a class called as TimeClass with attributes like seconds, minutes and hours. All the attributes must be of type integer. Write the constructor to initialize the attributes. Write methods to displayTime() to display the

time in hh:mm:ss format, addTime(time) to add two times and display in hh:mm:ss format, subtractTime() to subtract two times and display in hh:mm:ss format and countSeconds() to display in total number of seconds in the given time.

5. Develop a python program to create a class called as "Invoice" with following attributes and methods. Declare and use the two arrays to old items purchased, and price of the items. Write the calculateTax() method where GST tax is calculated. Write the printInvoice() function where the final bill is generated.
 Note: There are four types of items. Type 1 has 5% GST. Type 2 has 12% GST. Type 3 has 18% GST. Type 4 has 28% GST.
6. Develop a python program to create a class called as "Shape" and subclasses as "Rectangle" and "Triangle" with following data members like side1 and side2 and methods like calculateArea() and displayDetails(). Write the necessary constructors and test for different cases.
7. Develop a python program to create a class called as Quadratic. Write the constructor to initialize the necessary variables. Find the roots of a quadratic equation and test for all the conditions.
8. Develop a python program to create two classes called as Stack and Queue. Provide the necessary data members and methods to display the operations that can be performed on stacks and queues. Test for all type of conditions.

EVALUATION			
Program	Remarks	Marks	Faculty Signature
Program - 1			
Program – 2			



Program – 3			
Program – 4			
Program – 5			
Program – 6			
Program – 7			
Program – 8			