PUNE INSTITUTE OF COMPUTER TECHNOLOGY, PUNE
DEPARTMENT OF COMPUTER ENGINEERING DEPARTMENT
ACADEMIC YEAR: 2019-20

SUBJECT: OBJECT ORIENTED PROGRAMMING LABORATORY (210248)

CLASS: S.E.
SEMESTER: I

SCHDULE OF ASSIGNMENTS

Date: 15/06/2019

Guidelines for Student Journal:

The laboratory assignments are to be submitted by student in the form of journal. Journal consists of prologue, certificate, table of contents, and handwritten write-up of each assignment (title, objectives, problem statement, outcomes, software & hardware requirements, date of completion, assessment grade/marks and assessor's sign, theory - OOP feature/concept in brief, algorithm, flowchart, test cases, conclusion/analysis. **Program codes with sample output of all performed assignments are to be submitted as softcopy.**

GROUP

LAB

EXP.

NO.

TOPIC OF ASSIGNMENT

LAST DATE

OF

COMPLETION
Compulsory Assignment

1

Install, Configure 64 bit Linux Operating Systems, study basic architecture, memory system, and learn basic administration

29-June-2019

GROUP A (at least 5)

A

2

Implement a class Complex which represents the Complex Number data type. Implement the following operations:

1. Constructor (including a default constructor which creates the complex number 0+0i).

2. Overloaded operator+ to add two complex numbers.

3. Overloaded operator* to multiply two complex numbers.

4. Overloaded << and >> to print and read Complex Numbers.

05-July-2019

3

Implement a class Quadratic that represents degree two polynomials i.e., polynomials of type ax^2+bx+c. The class will require three data members corresponding to a, b and c.

Implement the following operations:

1. A constructor (including a default constructor which creates the 0 polynomial).

2. Overloaded operator+ to add two polynomials of degree 2.

3. Overloaded << and >> to print and read polynomials. To do this, you will need to decide what you want your input and output format to look like.

4. A function eval that computes the value of a polynomial for a given value of x.

5. A function that computes the two solutions of the equation $ax^2 + bx + c = 0$.

<div align="center">13-July-2019</div>

5

Write a C++ program create a calculator for an arithmetic operator (+, -, *, /). The program should take two operands from user and performs the operation on those two operands depending upon the operator entered by user. Use a switch statement to select the operation. Finally, display the result.

Some sample interaction with the program might look like this:

Enter first number, operator, second number: 10 / 3

Answer = 3.333333

Do another (y/n)? y

Enter first number, operator, second number: 12 + 100

Answer = 112

Do another (y/n)? n

<div align="center">19-July-2019</div>

6

Develop an object oriented program in C++ to create a database of student information system containing the following information: Name, Roll number, Class, division, Date of Birth, Blood group, Contact address, telephone number, driving license no. etc Construct the database with suitable member functions for initializing and destroying the data viz constructor, default constructor, Copy constructor, destructor, static member functions, friend class, this pointer, inline code and dynamic memory allocation operators-new and delete.

<div align="center">02-Aug-2019</div>

7

Create employee bio-data using following classes i) Personal record ii))Professional record iii) Academic record Assume appropriate data members and member function to accept required data & print bio-data. Create bio-data using multiple inheritances using C++.

10-Aug-2019

GROUP B (at least 4)

8

Crete User defined exception to check the following conditions and throw the exception if the criterion does not meet.

a. User has age between 18 and 55

b. User has income between Rs. 50,000 – Rs. 1,00,000 per month

c. User stays in Pune/Mumbai/Bangalore/Chennai

d. User has 4-wheeler

Accept age, income, city, vehicle from the user and check for the conditions mentioned above. If any of the condition does not met then throw an exception.

16-Aug-2019

9

Write a C++ program that creates an output file, writes information to it, closes the file and open it again as an input file and read the information from the file.

24-Aug-2019

10

Write a C++ program using command line arguments to search for a word in a file and replace it with the specified word. The usage of the program is shown below.

$ change <old word> <new word> <file name>

31-Aug-2019

11

Write a function template selection sort. Write a program that inputs, sorts and outputs an int array and a float array.

06-Sept-2019

GROUP C (at least 3)

12

Write C++ program using STL for implementation of stack & queue using SLL

14-Sept-2019

13

Write C++ program using STL for Dequeue (Double ended queue)

20-Sept-2019

14

Write C++ program using STL for Sorting and searching with user-defined records such as Person Record (Name, birth date, telephone no), item record (item code, item name, quantity and cost)

28-Sept-2019

Mini Projects (Any One)

15

Design and develop the Tic-Tac-Toe game using C++

04-Oct-2019

16

Develop a Supermarket Billing System using C++. The key features of this application are listed below :

- Bill Report: It shows the bill report of all the items added in supermarket billing system
- Add, Remove or Edit items: With this feature one can add, remove and modify item details. In add items, one can add information or details such as item no., item name, manufacturing date, price, quantity, tax percent, and many more.
- Show item details: This feature allows users to see the items and the corresponding details given for the item while adding the item.
  Use file to store the data.

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