DEPARTMENT OF COMPUTER SCIENCE

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

M.Sc. (Five year integrated) in Computer Science (AI & DS)

21-805-0107: Lab 2 – C++ Programming Lab

LAB EXPERIMENTS – SET 1

1. Write a C++ program to calculate the grades of a list of students with attributes (Name, Roll_no,   Marks of 3 subjects) using class with member functions *input(), calcGrade(), display().*

2. Write a C++ program to calculate the area of different shapes like Rectangle, Square etc (at least 5 shapes) using overloaded function *area().*

3. Write a C++ program using classes to perform bank transaction for *n customers* (cust_name, acc_no, acc_type, balance). The program should be menu driven and it should have the following menus like adding new account, withdraw (keep a min balance of 500), deposit, balance enquiry and account statement (cust_name, acc_no, acc_type, balance).

4. Write a C++ progtram to perform operations such as compare, concatenate and length on *String* objects.

5. Write a C++ program to demonstrate the order of execution of constructors & destructors as well as the dynamic memory allocation of a 2-D matrix.

6. Create a class TIME with members hours, minutes, seconds. Take input, add two time objects by passing objects to function and display result.

7. Write a C++ program to implement a class MATRIX with member functions such as matrix_add, matrix_mult, matrix_transpose and matrix_trace.

8. Write a program to perform addition of two complex numbers using constructor overloading. The first constructor which takes no argument is used to create objects which are not initialized, second which takes one argument is used to initialize real and imaginary parts to equal values and third which takes two arguments is used to initialize real and imaginary parts to two different values.

9. Write a C++ program to design a class having static member function named showcount() which has the property of displaying the number of objects created of the class.

10. Write a C++ program using class to process shopping list for a Departmental Store. The list include details such as the code, name, price and quantity of each item and perform the operations like adding & deleting items to the list and printing the total value of a purchase order.

11. Write a Program to swap private data members of classes named as class_1, class_2 using friend function.

12. Write a Program to design a class complex to represent complex numbers. The complex class should use an external function (use it as a friend function) to add two complex numbers. The function should return an object of type complex representing the sum of two complex numbers.