

GOA COLLEGE OF ENGINEERING
DEPARTMENT OF COMPUTER ENGINEERING

LIST OF EXPERIMENTS

SUBJECT: - [CE 340] Object Oriented Programming System

FACULTY: - AMIT P. PATIL

CLASS: - S.E COMPUTER (III) RC 19-20

PLATFORM: - Dev C++/VS

YEAR: - August 2022 to Jan 2023

LAB: - IP/FUNDS

Experiment	Content
Expt. No:-1	Aim : To study basics of C++ programming
[A]	Write a C++ program to understand basic concepts of classes and objects (array of objects). [Implement the application of assignment 1 as C++ code]
[B]	Write a C++ program to understand concept of Dynamic Memory Allocation for the array of objects.
Expt. No:-2	Aim : To study functions in C++ programming
[A]	Write a C++ program to understand concept of reference variables in functions.
[B]	Write a C++ program to understand concept of Inline and Friend functions
[C]	Write a C++ program to understand concept of function overloading
Expt. No:-3	Aim : To study concept of constructors and Destructors in C++ programming
[A]	Write a C++ program to understand concept of parameterized constructors
[B]	Write a C++ program to understand concept of copy constructors
[C]	Write a C++ program to understand concept of Destructors
Expt. No:-4	Aim : To study fundamentals of Operator Overloading
[A]	Write a C++ program to understand overloading of unary prefix & postfix operators to perform increment and decrement operations on objects.
[B]	Write a C++ program to understand overloading of binary operators to perform the following operations on the objects of the class: i. $x = 5 + y$ ii. $x = x * y$ where x & y are objects of the class iii. $x = y - 5$
[C]	Write a C++ program to overload binary stream insertion (<<) & extraction (>>) operators when used with objects.
[D]	Write a C++ program using class string to create two strings and perform the following operations on the strings i. To add two string type objects ($s1 = s2 + s3$) where s1,s2,s3 are objects ii. To compare two string lengths to print which string is smaller & print accordingly.
[E]	Write a C++ program to create a vector of 'n' elements (allocate the memory dynamically) and then multiply a scalar value with each element of a vector. Also show the result of addition of two vectors.
Expt. No:-5	Aim : To study fundamentals of Inheritance
[A]	Write a C++ program to study implementation of Hierarchical form of Inheritance
[B]	Write a C++ program to study implementation of Hybrid form of Inheritance(Virtual Base Class)
[C]	Write a C++ program to study concept of constructors in derived classes.

Expt. No:-6	Aim : To study Virtual functions & Polymorphism (Runtime Polymorphism)
[A]	Write a C++ program to understand virtual functions in C++
[B]	Write a C++ program to understand pure virtual functions in C++
Expt. No:-7	Aim : To study C++ console I/O operations
[A]	Write a C++ program to print the following output using ios class member functions(fig-expt4A)
[B]	Write a C++ program which reads a text from keyboard and display the following information on screen in 3 column format <ol style="list-style-type: none"> 1. Number of lines 2. Number of words 3. Number of characters Strings should be left justified and numbers to be right justified. Use suitable field width
[C]	Write a C++ program to format the following o/p using manipulators(fig-expt4C)
Expt. No:-8	Aim : To study templates in C++
[A]	Write a C++ program to implement a function template to swap two elements
[B]	Write a C++ program to create a class template to represent a generic vector. Include the member functions to perform the following tasks <ol style="list-style-type: none"> 1. Create the vector 2. To modify the value of a given element 3. To display the vector elements
Expt. No:-9	Aim : To study Exception Handling
[A]	Write a C++ program to implement exceptional handling concept (Divide by zero) using exception rethrow mechanism
[B]	Write a C++ program to implement a multi catch exception handling mechanism
Expt. No:-10	Aim : To study File Processing
[A]	Write a C++ program to insert 5 elements in first file and 3 elements in second file. Merge the contents of both files into third file into ascending order.
[B]	Write a C++ program to simulate a telephone directory application. Program should prompt user to enter name and telephone number of users. Also the program should allow the user to search and update the telephone number of a specific user depending upon the name entered.
[C]	Write a C++ program to create a student's database application using "files". Create a unique file for each student depending upon the student name entered. Store the student data like name, roll no, address, and branch into the file. Allow the user to search and update all the student details depending upon the entered roll-no and display the details.
Expt. No. 11	Aim : To study class string & stream processing
[A]	Write a C++ program to create string & perform the following: <ol style="list-style-type: none"> i. String assignment & concatenation ii. Compare strings iii. Find substrings & characters in a string iv. Swapping strings
[B]	Write a C++ program to understand how to use iterators to output a string
[C]	Write a C++ program to understand string stream processing concept
Expt. No. 12	Aim : To study standard template library (STL)
[A]	Write a C++ program to implement standard library vector sequence container
[B]	Write a C++ program to implement standard library list sequence container
[C]	Write a C++ program to implement standard library deque sequence container
[D]	Write a C++ program to implement standard library stack adapter class
[E]	Write a C++ program to implement standard library queue adapter class template

FORMAT TO SUBMIT LAB EXPERIMENTS

Experiment No:

Date:

Aim:

Theory: (Should include explanation of concepts used to implement program)

Program Printout and its Corresponding Output printouts

Conclusion:

Amit P. Patil
(Subject Faculty)