

Assignment 4 OOP

1. Why template is important in C++ programming? Write a program using template to add two numbers. Use function template to pass integer, float and double. Display the returned result.
2. Write a program that will find the sum and average of elements in an array using function templates.
3. Explain function template overloading with suitable example (overloading with function and overloading with other templates).
4. Write a program to sort the different types of array by using function templates.
5. Why template is called generic programming? Write a program with class template to represent array and add member function to find maximum, minimum and sort the generic array.
6. Give an example of class template for the function definition inside and outside the class. (Give the example of stack and array)
7. Explain how default arguments are used with class templates with example. Give the example of non template argument in class template.
8. Explain derived class template with suitable example.
9. Discuss about stream class hierarchy. How file can be open in C++? Explain with suitable example and syntax. Write a program to write the information of ten Employee in a file. And also display their details in console.
10. Write a program to store and retrieve the information of patient (patient_ID, name, address, age and type) in hospital management system.
11. Write short notes on `tellg`, `tellp`, `seekg` and `seekp`. Write a program to make simple library management system of a college. Your program should store and retrieve the information (Book Name, Book Id, Number of book and purchase date).
12. Write about the `ios` class functions and flags that are used in formatted I/O operation. Write a program to read and write the information of 10 students in a file. Also modify the student information according to the given roll number.
13. Explain different manipulator available in C++. Create class student to store Name, Age and CRN of students. Write a program to write records of N numbers of students into the file. And your program should search complete information of student from file according to CRN entered by user and display it.
14. Write a program to make billing system of departmental store. Your program should store and retrieve data to/from files. Use manipulators to display in proper formats.
15. Write a program for transaction processing that write and read object randomly to and from a random access file so that user can add, update, delete and display the account information (account number, last name, first name, total balance).
16. How is exception handling mechanism better than traditional error handling? Write a function which divides one number by another and raise exception if there is division by zero condition.
17. Write a program which calculates the square root of number and raises exception if it is required to calculate square root of negative number.
18. Write a program that catches multiple exceptions using exception class.
19. Explain how the exception is rethrown with suitable example.
20. Illustrate the use of multiple catch that has fundamental types as an argument.