Programs/Assignments

Lab-9
Topic: STL Containers

Objectives:

- To learn writing, executing and debugging C++ programs using STL containers.

Outcomes:

- After completing this, the students would be able to use STL containers of C++ in any program.

Lab Assignments

1. Write a C++ program to show the usage of STL array container and any five operations on the container.

2. Write a C++ program to show the usage of STL set container and any five operations on the container.

3. Write a C++ program to show the usage of STL map container and any five modifiers on the container.

4. Write a C++ program to show the usage of STL vector container and any five modifiers on the container.

5. Write a C++ program to show the usage of STL list container and any five modifiers on the container.

6. Write a C++ program to show the usage of STL queue container and any five modifiers on the container.

7. Write a C++ program to show the usage of STL stack container and any five modifiers on the container.

8. Write a C++ program to show the usage of STL priority queue container and any five modifiers on the container.

9. Write a C++ program to show the usage of STL forward list container and any five modifiers on the container.

10. Write a C++ program to show the usage of STL deque container and any five modifiers on the container.

Programs/Assignments

Lab-10
Topic: File Handling

Objectives:

- To learn writing, executing and debugging C++ programs using I/O files.

Outcomes:

- After completing this, the students would be able to read and write into files using C++ program.

Lab Assignments

1. Write a C++ program that reads 10 positive integers from a file, converts each integer into an equivalent 5-bit binary number, writes each binary representation into a file.

2. Write a C++ program that reads 5 hexadecimal numbers from a file, converts each hexadecimal number into an equivalent binary number, writes each binary representation into a file.

3. Write a C++ program that reads a series of x values as shown in the Table from a file, estimates the function $y = e^{-x}$ for x varying from 0 to 1 in steps of 0.1, and writes y for each x in a file. The output should appear in the file as follows.

TABLE FOR Y=EXP(-X)

X	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Y										

4. Assume that a following table is stored in a text file

Player's Name	Runs	Innings	Times Not Out
AAA	8430	230	18
BBB	4200	130	9
CCC	3350	105	11

Write a C++ program that reads the text file, calculates and writes the batting average of each player in an output file.

5. Write a C++ program that reads input name, roll number and marks in 5 subjects for 5 students from a file. Write functions to:
   a. Find total marks and percentage of all 5 students.
   b. Write the details of all the students including the total marks and percentage in an output file.
6. Write a C++ program that reads employee ID, name, age and basic salary of 5 employees. Calculate the gross salary of all the employees and store it along with all other details in an output file. [Gross salary= Basic salary + DA + HRA, DA = 80% of Basic salary, HRA=10% of Basic salary]

7. Write a C++ program that reads a bank account detail including: Name of the account holder, Account number, Type of account (use SB for savings and CB for current), Balance amount in the account. Write functions to deposit an amount in the account, withdraw an amount from the account and display balance amount after each deposit or withdraw. Store all the information into a new file.

8. Write a C++ program that reads a file containing an English paragraph, counts the number of characters and words in the paragraph, and store the number of characters and words in the same input file that the program read.

9. Write a C++ program that reads a file containing addresses of 5 persons, sort the addresses in an ascending order by considering the 6 digit pin codes, and over-write the input file with the sorted information.

10. Write a C++ program to create a file in a directory, write a sentence in the file, count the number of vowels in the sentence, count the number of words in the sentence, display the information (number of vowels and words) and delete the file from the location.