Assignment: 4 (MCA 295: OOPS WITH C++)

Date:

Objectives: Learn to handle inheritance problem, Polymorphism, Virtual functions, file Operations and STL.

1. Create a base class called Vehicle that stores of wheels and speed. Create the derived classes:

   - Car that inherits Vehicle and also stores number of passengers.
   - Truck that inherits Vehicle and also stores the load limit.

   Write a main() function to create objects of these classes and display all the information about the car and truck. Also compare the speed of the two vehicles, car and truck and display "faster "or "slower" if the car is faster or slower than truck.

2. Write a program that creates a base class called the Number. This class holds an integer value and contain a virtual function called displayNum(). Create two derived classes called HexNum and OctalNum that inherits Number. Override displayNum() in the derived classes so that it displays the value in Hexadecimal and Octal, respectively. Write a main function to create object of HexNum and OctalNum classes and display the hexadecimal and octal form of the supplied integer value. Use the base class pointer to call a function.

3. Write a program that counts the number of words in a string.

4. Create a file named File1.txt.Write The following information in the file.
   Success is not measured by how we go up in life but
   By how many times we bounce back when we fall down.
   You learn and move forward. Learn from your failure and keep going.

   Print the content of the file along with the line number. Then also count the number of words in the file.

5. Consider the following file named file2.txt
   It gets the job done quickly
   It is instantaneous
   It prevents loss, by meeting deadline
   In the short run the person's performance may improve.

Write a program that counts the number of occurrences of the pattern "It" in the file2.txt.

6. Write a program that creates an array that holds the integer number, float number, double number and character. After storing different information, display the content of the array.
7. Create a list structure L1 which contains the integer value.
   Add element 200, 100, 500, 300 in the list.
   Add 400 in front of the list.
   Print the content of the list.
   Sort the list elements and print the sorted elements.
   Create an array which conations 400, 500, 700, 600, 250. Create a list L2 from this array.
   Merge the list L1 and L2.
   Find out the unique elements in the list.