OOP Laboratory Test

1	Write a C++ Program to create a class called DLIST (Dpubly linked list) with the following member functions. L=L+ele; will insert an element from the front to the list L. L=L-ele; Search a node with an element ele in the list L and remove the node with ele from L. L1==L2 ; should return true if both the lists L1 and L2 are same with respect to elements. L1=L1--; To remove the duplicates if any from the list L1. Note that after duplicates removal, all distinct elements of the original list must be still present. Overload >> to display the content of the list after every list operations. In addition to the above functions you can add your own functions if needed.
2	Write a C++ program to create a class called STUDENT with data members USN, Name and Age. Using inheritance, create the classes UGSTUDENT and PGSTUDENT having fields as Semester, Fees and Stipend. Enter the data for at least 5 students. Find the semester wise average age for all UG and PG students separately.
3	Write a C++ program to create a class called BIN_TREE that represents a Binary Tree, with member functions to perform inorder, preorder and postorder traversals. Create a BIN_TREE object and demonstrate the traversals. Also implement the following member functions and demonstrate. Let B be the binary tree. B=B+ele; Add an element ele into the binary tree. B=B-ele; Remove element ele from the binary tree. B1==B2; Two check whether two given binary trees are same. B=ele; To search if element ele exists in the binary tree.