

CSE 207 - DATA STRUCTURES AND ALGORITHMS LAB

CYCLESHEET-1

1. Write a C++ program to evaluate the postfix expression using stacks .
2. Write a C++ program to check whether the given expression is balanced parenthesis or not. (Example: {[()]}), [({}) []]) .
3. Consider a railway reservation system. The system issues the tickets on the basis of First come First serve. The issued ticket contains the following information: The Train No, Passenger name (maximum of six),age, source, Destination, Arrival and departure time. Write a C++ program to implement the data structure that is used for the above system.
4. Consider a library application which maintains the list of books. The application contains the following information about the books: Title of the book, Author name, ISBN and Year of publication. Create a Linked List to maintain the list of books also to perform the following operations: Insert a book at any desired position and to delete or search for a book given the ISBN.
5. Assume that you have a singly linked list pointed at by the pointer variable START. Each node consists of a search key KEY (Information field) and a pointer to the next node NEXT. Formulate a logical function SEARCH() that simultaneously searches and reorganizes the list in the following fashion : If the node is found, it is deleted from its current position and moved to the start of the list.
6. Create an English dictionary which contains words and their meanings. Write a C++ program to search for a word in the Dictionary Using 1) Linear search 2)

Binary Search. Also calculate the number of comparisons required to search for a word.

7. Design a C++ program to store the student details: Reg.No, Name, Programme ,Branch and contact number(Don't allow duplicate registration numbers). Sort the records based on the reg.no using selection sort. When a new record is added it should be placed in the proper position.

8. Design a C++ Program to store the Employee records. Each record should contain Emp.Id, Emp.Name, Designation ,Salary , years of experience and address (Flat.No, Street,place,District,state, pincode). Sort the records using Insertion sort based on emp.Id.Also calculate the number of comparisons required to sort the records.