

GROUP - C

Practical No: 08 (C-19)

Title: Write C++ program to maintain club member's information using singly linked list.

Objectives :

- To maintain club member's information by performing different operations like add, delete, reverse, concatenate on singly linked list.

Problem Statement: - Department of Computer Engineering has student's club named 'Pinnacle Club'. Students of second, third and final year of department can be granted membership on request. Similarly one may cancel the membership of club. First node is reserved for president of club and last node is reserved for secretary of club. Write C++ program to maintain club member's information using singly linked list. Store student PRN and Name. Write functions to:

- a) Add and delete the members as well as president or even secretary.
- b) Compute total number of members of club
- c) Display members
- d) Two linked lists exists for two divisions. Concatenate two lists.

Outcome :

- Display added members in Pinnacle Club
- Display members after cancelled membership of club.
- Display Club Information.

Operating System recommended :- 64-bit Open source Linux or its derivative

Programming tools recommended :- Open Source Python, Programming tool like Jupyter Notebook, Pycharm, Spyder, G++/GCC

Hardware Requirements :

i3 or above processor , 2 GB or above RAM, 512 GB or above Hard-disk etc

Reference for theory : <https://www.javatpoint.com/singly-linked-list>

Theory :

- What is Linked list ? Representation of Linked list , Advantages, Disadvantages, Applications?
- List Types of Linked list with example.
- Explain Singly Linked list as an ADT(operation of Singly Linked list)?
- Difference between Array and Linked list.

NOTE : just write heading and try to explain in details with examples. Some websites are provided as reference(don't write reference). You can use other website also.

Write algorithm/pseudo code for Club's member information code:

- a) To initialize linked list
- b) To Add the members as well as president or even secretary
- c) To Delete the members as well as president or even secretary
- d) To Compute total number of members of club
- e) To Display members
- f) To Concatenate two lists.

Algorithm:

Write Algorithms for program/code which you have implemented.

Flowchart :

Draw flowchart for above algorithm

Conclusion:

Thus, We have successfully maintained club member's information using singly linked list.

Continuous Assessment of Student:

TS	PR	UC	VA	RN	Total Marks	Faculty Signature
(2)	(2)	(2)	(2)	(2)	(10)	

- TS – Timely Submitted, PR- Performance, UC- Understanding of Code, VA- Viva Answered,
RN- Regularity and Neatness

Practical No: 09 (C-20)

Title: The ticket booking system of Cinemax theater has to be implemented using C++ program using Doubly Linked List.

Objectives :

- To perform Doubly Circular linked list for cinemax ticket booking.
- To display available seats.
- To book and cancel seats

Problem Statement: - The ticket booking system of Cinemax theater has to be implemented using C++ program. There are 10 rows and 7 seats in each row. Doubly circular linked list has to be maintained to keep track of free seats at rows. Assume some random booking to start with. Use array to store pointers (Head pointer) to each row. On demand a) The list of available seats is to be displayed b) The seats are to be booked c) The booking can be cancelled.

Outcome :

- Display available seats to book movie ticket.
- Display status of Booked seat/ cancel seat.

Operating System recommended :- 64-bit Open source Linux or its derivative

Programming tools recommended :- Open Source Python, Programming tool like Jupyter Notebook, Pycharm, Spyder, G++/GCC

Hardware Requirements :

i3 or above processor , 2 GB or above RAM, 512 GB or above Hard-disk etc

Reference for theory : <https://www.javatpoint.com/doubly-linked-list>

Theory :

- What is Doubly Circular Linked list ? Representation of Doubly Circular Linked list , Advantages, Disadvantages, Applications?
- Explain Doubly Circular Linked list as an ADT(operation of Doubly Circular Linked list)?
- Difference between Singly and Doubly Circular Linked list.

NOTE : just write heading and try to explain in details with examples. Some websites are provided as reference(don't write reference). You can use other website also.

Write algorithm/pseudo code for Doubly Circular Linked list:

- a) To Display list of available seat
- b) To book seats
- c) To cancel seats

Algorithm:

Write Algorithms for program/code which you have implemented.

Flowchart :

Draw flowchart for above algorithm

Conclusion:

Thus, We have successfully implemented Cinemax Ticket Booking System using Doubly Circular Linked List.

Continuous Assessment of Student:

TS	PR	UC	VA	RN	Total Marks	Faculty Signature
(2)	(2)	(2)	(2)	(2)	(10)	

- TS – Timely Submitted, PR- Performance, UC- Understanding of Code, VA- Viva Answered,
RN- Regularity and Neatness

Practical No: 10 (C-21)

Title: Write C++ program for storing appointment schedule for day. Appointments are booked randomly using linked list

Objectives :

- To book appointment.
- To display free slots
- To cancel appointment.

Problem Statement: - Write C++ program for storing appointment schedule for day. Appointments are booked randomly using linked list. Set start and end time and min and max duration for visit slot. Write functions for-
A) Display free slots B) Book appointment C) Sort list based on time D) Cancel appointment (check validity, time bounds, availability) E) Sort list based on time using pointer manipulation.

Outcome :

- Display Appointment schedule
- Show appointment booking status
- Result of Sort appointment as per start time on linked list

Operating System recommended :- 64-bit Open source Linux or its derivative

Programming tools recommended :- Open Source Python, Programming tool like Jupyter Notebook, Pycharm, Spyder, G++/GCC

Hardware Requirements :

i3 or above processor , 2 GB or above RAM, 512 GB or above Hard-disk etc

Reference for theory : <https://www.javatpoint.com/doubly-linked-list>

Theory :

- Write short theory of linked list.
- Explain logic/algorithms to book and cancel appointment.
- Explain logic/algorithms for sorting appointment linked list.

NOTE : just write heading and try to explain in details with examples. Some websites are provided as reference(don't write reference). You can use other website also.

Write algorithm/pseudo code for Linked list:

- a) To Display free slots
- b) To book appointment
- c) To cancel appointment

Algorithm:

Write Algorithms for program/code which you have implemented.

Flowchart :

Draw flowchart for above algorithm

Conclusion:

Thus, We have successfully implemented Appointment Scheduling System using Linked List.

Continuous Assessment of Student:

TS	PR	UC	VA	RN	Total Marks	Faculty Signature
(2)	(2)	(2)	(2)	(2)	(10)	

- TS – Timely Submitted, PR- Performance, UC- Understanding of Code, VA- Viva Answered, RN- Regularity and Neatness