The ticket booking system of anemax theatre has to be implemented using ett program. There are 10 tous 47 columns. Doubly crawles linked his has to be maintained to keep trank of the free seats at 2005. Assume some random booking to start with . Use away to tore pointer (head pointers) to early early in at The list of available seats is to be duplayed On demand by The seats are to be booked. of the booking can be concelled

Objectives:

To understand the concept of oop paradigm.

b) To understand wage of linked-list in creation of dynamic lists in CH.

Outcome:

- a) To implement basic system design functionality using oopiparadigm b) To write menu driven, modular program in CH using classes & objects. in To implement various dependent of independent classes in ctt.
- # Hardware Requirement: Manufacturer & Madel: Acer Souff-3 Processa: entel coro 15-844 gen (82654 @ 1.8442) Installed Menury: 84B RAM, 5/2GBSSD Architective: 64. bit

H Soffware requirements:

Operating Syster: Usunty 20.04 on Oscale Virtual Machine (Base Memory is 4096MB & 3 processes are allocated)

Cop tession used. (+14

Compiler: for (H; off (Versian 10,1.0)

lade editor: Sublime Text (Build 321)

Theory:

Doubly linked luf: (PLL): A linked lust in which every node points to its next node as well as previous node

The adv. of DIL over singly lighted list is that provides previous node alies i'u constant time, But the also require using expro memory for previous pointers.

Circular linked list: (ell)

In grader linked late all nodes are congerted in

Such a way they form a words.

The advantage of CLL is that we can start from any node & we can fraverse the whole his. This linked hist is very weeful in some creation of some data

strutures like queue

of is also used in suplementation of Thomaui Heap.

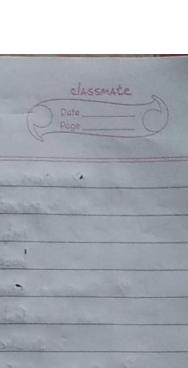
Prendo lode

operations of Circular Doubly Linked Lus:

Algorithm add Node (14) data) & Alad node at beginning newnode - gebNew Node (data):

If (heard = = NULL) heard + yeronode

else. & newNode = next = head new Nocle -> prev - head -> prev



head - prev - newNode;

Algorithm deleteNode (ruf data) of

At. if (head >data = = data) of

leup = head

head = head > nost

head = prev = feup > prev.

feup > prev = head

else of

semp = head.

while (fey > data != data) femp= femp> norb

lemp = nerof = pro = femp > prov.

temp = prov > nerof = femp > nerof.

delete feup

Algorithm is fresent (146 data) 1.

Atol fenp = head:

'do (

temprof (fenp->data = = data) 300

tempt (ferp->data = =data) zetwa frue.

j berp + berp > next

istute (forp! = head)

reture falk.

APT of classes

The daned und in program are:

& dan seal privati: Into seaf .uo; book is Booked; strong pers. name Seal "unob, " previ public seat (indiscatino, book lebooked, string persingue) 2 1 1/ carboutes > class Theatreforer private: Seat - head; out total seats; perble: Theatrofae () (// constructor word add Seat () of / add seat in eas bool update seal Det () of Muydate real defail void fring Real Detail (mt seat no) (A print detail of void Print Bookings () (// print entire 8000. 37 Class. Theatred private: . Inf Ear, columns: Theatre Ras" theatre- East;

seaf should be

Carielled Surenfully

Carelling a seat booked

14 testicate-1

.. Booking is concelled

Smenfelly --

	Class	
1	-1422	Mad
	Date	120
M	0	1
		1
- 77	1	

9	· punting status of theatre	program doubt print booking status of theake	programs shows theore
*	Shaping defails of seat booked in Jestian	flogram Showld print	Row: 5 (o): 2 Mame: Michael
	Showing details of curbooked scal Booking booked scal M terplase-1	There should be ezzos message. There should be message informing that seat is diedy booked.	The seat is not hooked "Scat is already occurpied please while other available opposition."
-			The same of the sa

Applications:

They are also used in implementation of other data of They are also used in implementation of cache memory.

Conclusion:

linked list reovides uppor edge in case of memory usage compared to arrays. The arrighment focuses on linked list iniple mentation olgo along with basics of system design using oop concepts toluch is very useful according to todays industry standards.