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Data Structure laboratory :-
Assignment - 1

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Problem Statement :-
Queues are freq. used in Computer Engineering and a typical example is the creation of job queue by an OS. if OS does not use priorities then the job are processed in the order they enter in the system write a c++ program to simulate a job queue. write a functions to add join and delete job from the queue.

Objective :-
(1) To understand Concept of queue.
(2) To understand implimentation of ADT of queue.

H/W & S/W requirement :-
Windows 10 OS (64-bit)
intel is processor.
Eclipse IDE.

Theory :-
Queue data structure :-
Queue is a linear data

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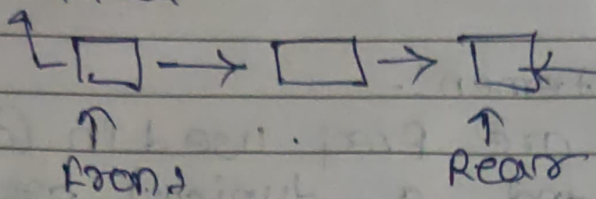
structure which follows a particular order in which the operations can performed.
→ the order is First in First out.



* Operation on a queue.

Enqueue :-
Add item to the queue. if the queue is full. then it's said to be overflow.

Dequeue :-
Remove item from queue item are poped in same order as they are inserted.

Front :- get the front item
rear :- get the rear item

* Algorithm.

1 Start.
2 if size of queue is greter than 20 then print "queue is full".
3 if rear pointer is null then

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i) Create new node with data.
ii) Set next pointer to null.
iii) Set front & rear pointer to new node.

4. else Create new node with data.
5. Set next pointer to null.
6. Set rear pointer to new node.
7. Stop.

Algorithm to Delete Job From queue.

1. Start.
2. if front == Null. print("queue empty")
3. Create Curr pointer.
4. Initialize Curr to Front.
5. Set Front = Front->next.
6. if Front is null Set rear to null.
7. Free the memory allocated for temp.
8. Stop.

Compleexity :-

Enqueue	O(1)
Dequeue	O(1)
Display	O(n)

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* Test Case

	Description	Exp O/P	act O/P	Status
(a)				

1. Enqueue
2. Dequeue
3. Display.

(1)	⇒ 1 ⇒ job1	job added	job added	pass
(2)	2	job removed	job removed	pass
(3)	2	Empty queue	Empty queue	pass