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(6) WAP to simulate the working of the queue of integers using an array provide following operations. Insert, delete, display. The program should print appropriate message for overflow and underflow condition.

→
```
int queue[MAX]; rear=-1, front=-1;
Void insert (int a)
 {
  if (rear==MAX-1)
   {
    printf("Queue overflow \n");
   }
  else
   {
    front=0;
    printf("Enter the element to be inserted:");
     scanf ("%d", &a);
     rear=rear+1;
     queue[rear]=a;
   }
 }
int delete ()
 {
  if (front==-1 || front>rear)
   {
    printf("Queue underflow \n");
   }
```

```
else
{
  printf("Deleted element is %d \n",
                    queue[front]);
  front = front+1;
}
}
void display()
{
if (front==-1)
{
printf("Queue is empty");
}
else
{
printf("Queue is:");
for (int i=front; i<=rear; i++)
  {
    printf("%d", queue[i]);
  }
}
```

(8) write a program to simulate the working of a circular queue using an array provide the following operations insert, delete & display the program should print appropriate message for queue empty and queue overflow conditions.

```
int queue[5], rear, front = -1;
void insert (int a)
{
  if (isfull())
  {
   printf("Queue is full");
  }
  else
  {
    if (front == -1)
       front = 0;
       rear = (rear + 1) % SIZE;
       items
       queue[rear] = a;
       printf("inserted %d", a);
  }
}
int delete()
{
  int a;
  if (isempty())
  {
   printf("queue is Empty");
  }
```

```
{
    a = queue[front];
    if (front == rear)
    {
        front = -1;
        rear = -1;
    }
    else
    {
        front = (front + 1) % SIZE;
    }
    return(a);
  }
}
void display()
{
  if (isEmpty())
  {
    printf("queue is empty");
  }
  else
  {
    for (int i = front; i != rear; i = (i+1) % SIZE)
    {
      printf("%d", queue[i]);
    }
  }
}
```

o/p: circular

1) 1. Insert 2. Delete 3. Display.

Enter choice : 2.

Queue underflow.

2) 1. Insert 2. Delete 3. Display.

Enter choice : 1

elements to be inserted:

2

3

4

5

Enter choice : 3

2 3 4 5

Enter choice : 2.

2 is deleted.

Enter choice : 3

3 4 5

08/01/24