DS LAB- PROG 3-QUEUE

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Program-

```
#include <stdio.h>
#define que_size 3
int item,front=0,rear=-1,q[10];
void insertrear()
{
   if(rear==que_size-1)
   {
      printf("QUEUE OVERFLOW\n");
      return;
   }
   rear=rear+1;
   q[rear]=item;
}
int deletefront()
{
   if(front>rear)
   {
      front=0;
      rear=-1;
```

```
        return -1;
    }
    return q[front++];
}
void displayQ()
{
    int i;
    if(front>rear)
    {
        printf("QUEUE IS EMPTY\n");
        return;
    }
    printf("contents of the queue\n");
    for(i=front;i<=rear;i++)
    {
        printf("%d\n",q[i]);
    }
}
int main()
{
  int choice;
    do
    {
        printf("\n1.insert rear\n2.delete front\n3.display\n4.exit\n");
        printf("enter the choice\n");
```

```
        scanf("%d",&choice);
        switch(choice)
        {
           case 1:printf("enter the item to be inserted\n");
           scanf("%d",&item);
           insertrear();
           break;
          case 2:item=deletefront();
           if(item==-1)
           printf("queue is empty\n");
           else
           printf("item deleted is %d\n",item);
           break;
          case 3:displayQ();
           break;
           default:break;
        }
    }
      while(choice!=4);
    return 0;
}
```

Output-

```
1.insert rear
2.delete front
3.display
4.exit
enter the choice
1
enter the item to be inserted
12

1.insert rear
2.delete front
3.display
4.exit
enter the choice
1
enter the item to be inserted
13

1.insert rear
2.delete front
3.display
4.exit
enter the choice
1
enter the item to be inserted
14

1.insert rear
2.delete front
3.display
```

```
1.insert rear
2.delete front
3.display
4.exit
enter the choice
1
enter the item to be inserted
15
QUEUE OVERFLOW

1.insert rear
2.delete front
3.display
4.exit
enter the choice
3
contents of the queue
12
13
14

1.insert rear
2.delete front
3.display
4.exit
enter the choice
2
item deleted is 12

1.insert rear
2.delete front
```

```
3.display
4.exit
enter the choice

2
item deleted is 13

1.insert rear
2.delete front
3.display
4.exit
enter the choice
2
item deleted is 14

1.insert rear
2.delete front
3.display
4.exit
enter the choice
3
QUEUE IS EMPTY

1.insert rear
2.delete front
3.display
4.exit
enter the choice
4
```

```
enter the choice

2
item deleted is 13

1.insert rear
2.delete front
3.display
4.exit
enter the choice
2
item deleted is 14

1.insert rear
2.delete front
3.display
4.exit
enter the choice
3
QUEUE IS EMPTY

1.insert rear
2.delete front
3.display
4.exit
enter the choice
4


...Program finished with exit code 0
Press ENTER to exit console.
```