Problem Statement :- Queues are frequently used in computer programming, and a typical example is the creation of a job queue by an operating system. If the operating system does use priorities, then the jobs are processed in the order they enter the system. Write C++ program for simulating job queue. Write functions to add job and delete job from queue.

```
#include <iostream>
#define MAX 10
using namespace std;
struct queue
{
   int data[MAX];
        int front,rear;
};
class Queue
{
   struct queue q;
   public:
   Queue()
   {
      q.front=q.rear=-1;
   }
   int isempty();
   int isfull();
   void enqueue(int);
   int delqueue();
   void display();
};
int Queue::isempty()
{
        return(q.front==q.rear);
}
int Queue::isfull()
{
   return(q.rear==MAX-1);
}
```

```
void Queue::enqueue(int x)
{
   q.data[++q.rear]=x;
}
int Queue::delqueue()
{
   return q.data[++q.front];
}
void Queue::display()
{
   int i;
   cout<<"\n";
   for(i=q.front+1;i<=q.rear;i++)
         cout<<q.data[i]<<" ";
}
int main()
{
   Queue obj;
         int ch,x;
         do
   {
      cout<<"\n 1.Insert Job\n 2.Delete Job\n 3.Display\n 4.Exit\n Enter your
choice : ";
            cin>>ch;
            switch(ch)
      {
         case 1:
         if (!obj.isfull())
         {
            cout<<"Enter ID number to insert job : ";
                        cin>>x;
            obj.enqueue(x);
                        cout<<endl;
                  }
         else
         cout<<"No Job available !!!\n\n";
```

```
            break;
            case 2:
        if(!obj.isempty())
                cout<<"Deleted Element = "<<obj.delqueue()<<endl;
                else
        {
          cout<<"Queue is underflow!!!\n\n";
        }
                cout<<"Remaining Jobs : ";
                obj.display();
            break;
        case 3: if (!obj.isempty())
            {
          cout<<"Queue Contains ID number : ";
                  obj.display();
          cout<<endl;
            }
        else
        {
          cout<<"Queue is empty!!!\n";
          // break;
        }
        break;
        case 4: cout<<"Exiting Program.....";
        break;
      }
   }
   while(ch!=4);
   return 0;
}
```

Output :-


C:\Users\Anuj Kulkarni\Deskt
1.Insert Job
2.Delete Job
3.Display
4.Exit
Enter your choice : 1
Enter ID number to insert job : 10
1.Insert Job
2.Delete Job
3.Display
4.Exit
Enter your choice : 3
Queue Contains ID number :
10
1.Insert Job
2.Delete Job
3.Display
4.Exit
Enter your choice : 2
Deleted Element = 10
Remaining Jobs :
1.Insert Job
2.Delete Job
3.Display
4.Exit
Enter your choice : 4
Exiting Program.....

Process exited after 16.4 seconds with return value 0
Press any key to continue . . .