Assignment_3

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 not 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)?1:0;
}
int Queue::isfull()
{    return(q.rear==MAX-1)?1:0;}
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<<"\n Enter data : \n";
                              cin>>x;
                              obj.enqueue(x);
                              cout<<endl;
                        }
                    else
                          cout<< "Queue is overflow!!!\n\n";
                     break;
               case 2: if(!obj.isempty())
                                 cout<<"\n Deleted Element = "<<obj.delqueue()<<endl;
                         else
                              {   cout<<"\n Queue is underflow!!!\n\n";  }
                         cout<<"\nRemaining Jobs : \n";
                         obj.display();
                     break;
```

```
            case 3: if (!obj.isempty())
                {  cout<<"\n Queue contains : \n";
                        obj.display();
                }
                else
                         cout<<"\n Queue is empty!!!\n\n";
                break;
            case 4: cout<<"\n Exiting Program.....";
        }
    }while(ch!=4);
return 0;
}
```