

Lab Assignment 3

Implement circular queue using Array. Perform following operations on it a) Insertion(Enqueue), b) Deletion(Dequeue), c) Display

Code

```
// Program to insert, delete and print the elements  
of Linear queue using array.
```

```
#include<iostream>
```

```
using namespace std;
```

```
class queue
```

```
{
```

```
    private:
```

```
    int rear,front;
```

```
    int queueL[50];
```

```
    int max;
```

```
    int size;
```

```
    public:
```

```
        queue()
```

```

    {
        size=0;
        max=50;
        rear=front=-1; //Initially queue is
empty
    }
    int is_empty();
    int is_full();
    void add(int element);
    void del();
    void print();

};

```

```

int queue::is_empty()
{
    if(front==rear) //Underflow condition of Queue
    {
        return 1;
    }
}

```

```

        else
            return 0;
    }
int queue::is_full()
{
    if(rear==(max-1))    //Overflow condition of
queue
    {
        return 1;
    }
    else
        return 0;
}
void queue::add(int element)    //insertion of an
element
{
    if(!is_full())
    {
        queueL[++rear]=element;
        size++;
    }
}

```

```

}

void queue::del()           //Deletion of an
element
{
    if(!is_empty())
    {
        int element;
        size--;
        element=queueL[++front];
    }

}

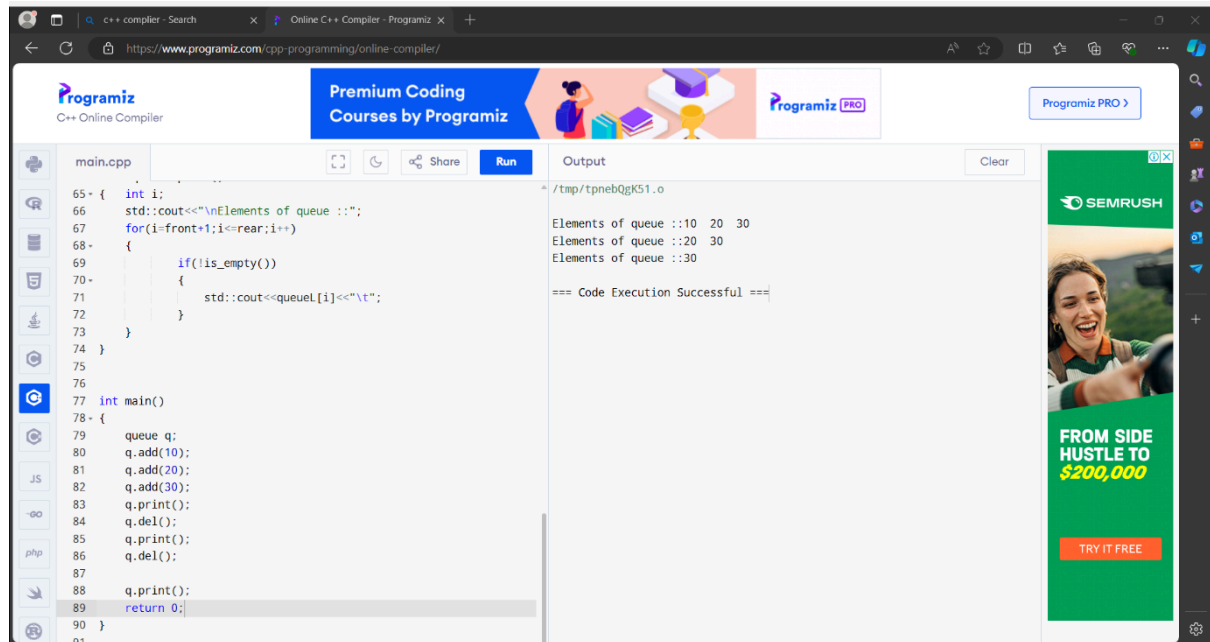
void queue::print()
{   int i;
    std::cout<<"\nElements of queue ::";
    for(i=front+1;i<=rear;i++)
    {
        if(!is_empty())
        {
            std::cout<<queueL[i]<<"\t";

```

```
        }  
    }  
}
```

```
int main()  
{  
    queue q;  
    q.add(10);  
    q.add(20);  
    q.add(30);  
    q.print();  
    q.del();  
    q.print();  
    q.del();  
  
    q.print();  
    return 0;  
}
```

Output



The screenshot displays the Programiz Online C++ Compiler interface. The left pane shows the source code for `main.cpp`, and the right pane shows the output of the program.

```
main.cpp
65- { int i;
66-   std::cout<<"\nElements of queue ::";
67-   for(i=front+1;i<=rear;i++)
68-   {
69-       if(!is_empty())
70-       {
71-           std::cout<<queue[i]<<"\t";
72-       }
73-   }
74- }
75-
76-
77- int main()
78- {
79-     queue q;
80-     q.add(10);
81-     q.add(20);
82-     q.add(30);
83-     q.print();
84-     q.del();
85-     q.print();
86-     q.del();
87-
88-     q.print();
89-     return 0;
90- }
```

Output

```
/tmp/tpnebqgKS1.o
Elements of queue ::10 20 30
Elements of queue ::20 30
Elements of queue ::30

=== Code Execution Successful ===
```

The interface includes a top navigation bar with the Programiz logo, a search bar, and a "Premium Coding Courses by Programiz" banner. A sidebar on the left contains icons for various programming languages (C++, Java, JavaScript, PHP, Python, etc.). The right sidebar features a SEMRUSH advertisement with the text "FROM SIDE HUSTLE TO \$200,000" and a "TRY IT FREE" button.