

QUEUE USING SINGLY LINKED LIST

CODE:

```
#include <iostream>
using namespace std;
struct node {
    int data;
    struct node *next;
};
struct node* front = NULL;
struct node* rear = NULL;
struct node* temp;
void Insert() {
    int val;
    cout<<"Insert the element in queue : "<<endl;
    cin>>val;
    if (rear == NULL) {
        rear = (struct node *)malloc(sizeof(struct node));
        rear->next = NULL;
        rear->data = val;
        front = rear;
    } else {
        temp=(struct node *)malloc(sizeof(struct node));
        rear->next = temp;
        temp->data = val;
        temp->next = NULL;
        rear = temp;
    }
}
```

```

}
void Delete() {
    temp = front;
    if (front == NULL) {
        cout<<"Underflow"<<endl;
        return;
    }
    else
    if (temp->next != NULL) {
        temp = temp->next;
        cout<<"Element deleted from queue is : "<<front-
>data<<endl;
        free(front);
        front = temp;
    } else {
        cout<<"Element deleted from queue is : "<<front-
>data<<endl;
        free(front);
        front = NULL;
        rear = NULL;
    }
}
void Display() {
    temp = front;
    if ((front == NULL) && (rear == NULL)) {
        cout<<"Queue is empty"<<endl;
        return;
    }
}

```

```

    cout<<"Queue elements are: ";
    while (temp != NULL) {
        cout<<temp->data<<" ";
        temp = temp->next;
    }
    cout<<endl;
}
int main() {
    int ch;
    cout<<"1) Insert element to queue"<<endl;
    cout<<"2) Delete element from queue"<<endl;
    cout<<"3) Display all the elements of queue"<<endl;
    cout<<"4) Exit"<<endl;
    do {
        cout<<"Enter your choice : "<<endl;
        cin>>ch;
        switch (ch) {
            case 1: Insert();
                break;
            case 2: Delete();
                break;
            case 3: Display();
                break;
            case 4: cout<<"Exit"<<endl;
                break;
            default: cout<<"Invalid choice"<<endl;
        }
    } while(ch!=4);
}

```

```
return 0;  
}
```

OUTPUT:

Output

- 1) Insert element to queue
- 2) Delete element from queue
- 3) Display all the elements of queue
- 4) Exit

Enter your choice :

1

Insert the element in queue :

43

Enter your choice :

1

Insert the element in queue :

15

Enter your choice :

1

Insert the element in queue :

28

Enter your choice :

3

Queue elements are: 43 15 28

Enter your choice :

2

Element deleted from queue is : 43

Enter your choice :

3

Queue elements are: 15 28