

**AIM:-** Write a program in java to implement stack in queue take user input.

## SOURCE CODE:

```
package com.lab;
import java.util.Scanner;
public class stack {
    private int maxSize;
    private int[] queue;
    private int front;
    private int rear;
    private int size;

    public stack(int maxSize) {
        this.maxSize = maxSize;
        queue = new int[maxSize];
        front = 0;
        rear = -1;
        size = 0;
    }
    public boolean isEmpty() {
        return (size == 0);
    }

    public boolean isFull() {
        return (size == maxSize);
    }
    public void push(int x) {
        if (isFull()) {
            System.out.println("Stack is full!");
            return;
        }
        rear = (rear + 1) % maxSize;
        queue[rear] = x;
        size++;
    }
    public int pop() {
        if (isEmpty()) {
            System.out.println("Stack is empty!");
            return -1;
        }
        int x = queue[rear];
        rear = (rear - 1 + maxSize) % maxSize;
        size--;
        return x;
    }
}
```

```

public void display() {
    if (isEmpty()) {
        System.out.println("Stack is empty!");
        return;
    }
    System.out.print("Stack: ");
    int i = rear;
    do {
        System.out.print(queue[i] + " ");
        i = (i - 1 + maxSize) % maxSize;
    } while (i != front);
    System.out.println();
}

```

```

public static void main(String[] args) {
    Scanner sc = new Scanner(System.in);
    System.out.println("Enter the maximum size of the stack:");
    int maxSize = sc.nextInt();
    stack Stack = new stack(maxSize);
    int choice, x;
    do {
        System.out.println("\nEnter your choice:");
        System.out.println("1. Push");
        System.out.println("2. Pop");
        System.out.println("3. Display");
        System.out.println("0. Exit");
        choice = sc.nextInt();
        switch (choice) {
            case 1:
                System.out.println("Enter the element to push:");
                x = sc.nextInt();
                Stack.push(x);
                break;
            case 2:
                x = Stack.pop();
                if (x != -1) {
                    System.out.println("Popped element: " + x);
                }
                break;
            case 3:
                Stack.display();
                break;
            case 0:
                System.out.println("Exiting...");
                break;
        }
    }
}

```

default:

```
        System.out.println("Invalid choice!");
    }
} while (choice != 0);
sc.close();
}
}
```

**AIM:** Write a program in java to implement stack in queue take user input.

## SOURCE CODE:

```
package queue;
import java.util.Scanner;
public class queue {
    private int maxSize;
    private int[] queue;
    private int front;
    private int rear;
    private int size;
    public queue(int maxSize) {
        this.maxSize = maxSize;
        queue = new int[maxSize];
        front = 0;
        rear = -1;
        size = 0;
    }
    public boolean isEmpty() {
```

```

        return (size == 0);
    }
    public boolean isFull() {
        return (size == maxSize);
    }
    public void enqueue(int x) {
        if (isFull()) {
            System.out.println("Queue is full!");
            return;
        }
        rear = (rear + 1) % maxSize;
        queue[rear] = x;
        size++;
    }
    public int dequeue() {
        if (isEmpty()) {
            System.out.println("Queue is empty!");
            return -1;
        }
        int x = queue[front];
        front = (front + 1) % maxSize;
        size--;
        return x;
    }
    public void display() {
        if (isEmpty()) {
            System.out.println("Queue is empty!");
            return;
        }
        System.out.print("Queue: ");
        int i = front;
        do {
            System.out.print(queue[i] + " ");
            i = (i + 1) % maxSize;
        } while (i != (rear + 1) % maxSize);
        System.out.println();
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the maximum size of the queue:");
        int maxSize = sc.nextInt();
        Queue queue = new Queue(maxSize);
        int choice, x;
        do {
            System.out.println("\nEnter your choice:");
            System.out.println("1. Enqueue");

```

```
System.out.println("2. Dequeue");
System.out.println("3. Display");
System.out.println("0. Exit");
choice = sc.nextInt();
```

```
switch (choice) {
    case 1:
        System.out.println("Enter the element to enqueue:");
        x = sc.nextInt();
        Queue.enqueue(x);
        break;
    case 2:
        x = Queue.dequeue();
        if (x != -1) {
            System.out.println("Dequeued element: " + x);
        }
        break;
    case 3:
        Queue.display();
        break;
    case 0:
        System.out.println("Exiting...");
        break;
    default:
        System.out.println("Invalid choice!");
}

} while (choice != 0);
sc.close();
}
}
```

AIM : - Program to produce the tokens from given long string

## SOURCE CODE:

```
import java.util.StringTokenizer;

public class TOKEN {

    public static void main(String[] args) {
        StringTokenizer s = new StringTokenizer("My name is SONALI My ENROLLMENT
number is 04714813121. I AM A ITE STUDENT");
        while (s.hasMoreTokens()){
            System.out.println(s.nextToken());
        }
    }

}
```

```
Problems Javadoc Declaration Console ×
<terminated> stack [Java Application] C:\Program Files\Java\jdk-18.0.2.1\bin\javaw.exe (19-Apr-2023, 10:32:27 pm – 10:33:26 pm) [pid: 11648]
Enter the maximum size of the stack:
4
Enter your choice:
1. Push
2. Pop
3. Display
0. Exit
1
Enter the element to push:
44
Enter your choice:
1. Push
2. Pop
3. Display
0. Exit
1
Enter the element to push:
67
Enter your choice:
1. Push
2. Pop
3. Display
0. Exit
2
Popped element: 67
Enter your choice:
1. Push
2. Pop
3. Display
0. Exit
3
Stack: 44 0 0 67
Enter your choice:
1. Push
2. Pop
3. Display
0. Exit
```

```
sonali.java - queue/src/queue/queue.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
queue [Java Application] C:\Program Files\Java\jdk-18.0.2.1\bin\javaw.exe (19-Apr-2023, 10:46:21 pm) [pid: 13360]
Enter the maximum size of the queue:
4
Enter your choice:
1. Enqueue
2. Dequeue
3. Display
0. Exit
1
Enter the element to enqueue:
66
Enter your choice:
1. Enqueue
2. Dequeue
3. Display
0. Exit
1
Enter the element to enqueue:
77
```

```
<terminated> TOKEN [Java Application] C:\Program Files\Java\jdk-18.0.2.1\bin\javaw.exe (19-Apr-2023, 10:52:37 pm - 10:52:37 pm) [pid: 6748]
My
name
is
SONALI
My
ENROLLMENT
number
is
04714813121.
I
AM
A
ITE
STUDENT
|
```

```
Enter your choice:
1. Enqueue
2. Dequeue
3. Display
0. Exit
1
Enter the element to enqueue:
66666

Enter your choice:
1. Enqueue
2. Dequeue
3. Display
0. Exit
2
Dequeued element: 66

Enter your choice:
1. Enqueue
2. Dequeue
3. Display
0. Exit
3
Queue: 77 66666

Enter your choice:
1. Enqueue
2. Dequeue
3. Display
0. Exit
```

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