Stack

Exercise

```
class Stack {

    private int top;
    private int maxSize;
    private int[] arr;

    Stack(int maxSize) {
        this.top = -1;
        this.maxSize = maxSize;
        arr = new int[maxSize];
    }

    public boolean isFull() {
        return top >= (maxSize - 1);
    }

    public boolean push(int data) {
        if (isFull()) {
            return false;
        } else {
            arr[++top] = data;
            return true;
        }
    }
```

```
public int peek() {
    if (isEmpty())
        return Integer.MIN_VALUE;
    else
        return arr[top];
}

public void display() {
    if (isEmpty())
        System.out.println("Stack is empty!");
    else {
        System.out.println("Displaying stack elements");
        for (int index = top; index >= 0; index--) {
            System.out.println(arr[index]);
        }
    }
}

public boolean isEmpty() {
    return top < 0;
}

public int pop() {
    if (isEmpty())
        return Integer.MIN_VALUE;
    else
```

```
            return arr[top--];
        }
    }

class Tester {

    public static void main(String args[]) {

        Stack stack = new Stack(10);
        stack.push(15);
        stack.push(25);
        stack.push(30);
        stack.push(40);

        stack.display();

        if (checkTop(stack)) {
            System.out.println("The top most element of the stack is an even number");
        } else {
            System.out.println("The top most element of the stack is an odd number");
        }
    }

    public static boolean checkTop(Stack stack) {
        int topElement = stack.peek();
        if (topElement == Integer.MIN_VALUE) {
            System.out.println("Stack is empty");
```

```
            return false;
        }
        return topElement % 2 == 0;
    }
}
```

Output-

```
C:\Users\Sarvesh\OneDrive\Desktop>cd C:\Users\Sarvesh\OneDrive\Desktop

C:\Users\Sarvesh\OneDrive\Desktop>javac Tester3.java

C:\Users\Sarvesh\OneDrive\Desktop>java Tester3
Displaying stack elements
40
30
25
15
The top most element of the stack is an even number
```