```
class Stack {
	private int top; // represents the index position of the top most element in the stack
	private int maxSize; // represents the maximum number of elements that can be stored in the stack
	private int[] arr;

	Stack(int maxSize) {
		this.top = -1; // top is -1 when the stack is created
		this.maxSize = maxSize;
		arr = new int[maxSize];
	}

	// Checking if the stack is full or not
	public boolean isFull() {
		if (top >= (maxSize - 1)) {
			return true;
		}
		return false;
	}

	// Adding a new element to the top of the stack
	public boolean push(int data) {
		if (isFull()) {
			return false;
		} else {
			arr[++top] = data;
			return true;
		}
	}

	// Returning the top most element of the stack
```

```
	public int peek() {
		if (top < 0)
			return Integer.MIN_VALUE;
		else
			return arr[top];
	}

	// Displaying all the elements of the stack
	public void display() {
		System.out.println("Displaying stack elements");
		for (int index = top; index >= 0; index--) {
			System.out.println(arr[index]); // accessing element at position index
		}

	}

}

class Tester {
	public static void main(String args[]) {
		Stack stack = new Stack(5);
		System.out.println("Stack created.\n");

		if (stack.push(1))
			System.out.println("The element is pushed to the stack!\n");
		else
			System.out.println("Stack is full!\n");

		if (stack.push(2))
			System.out.println("The element is pushed to the stack!\n");
		else
```

```
                System.out.println("Stack is full!\n");

            if (stack.push(3))
                System.out.println("The element is pushed to the stack!\n");
            else
                System.out.println("Stack is full!\n");

            if (stack.push(4))
                System.out.println("The element is pushed to the stack!\n");
            else
                System.out.println("Stack is full!\n");

            if (stack.push(5))
                System.out.println("The element is pushed to the stack!\n");
            else
                System.out.println("Stack is full!\n");

            stack.display();

            if (stack.push(6))
                System.out.println("The element is pushed to the stack!\n");
            else
                System.out.println("Stack is full!\n");

            System.out.println("The top element is : " + stack.peek());

        }
}
```

Output:

Stack created.

The element is pushed to the stack!

The element is pushed to the stack!

The element is pushed to the stack!

The element is pushed to the stack!

The element is pushed to the stack!

Displaying stack elements

5

4

3

2

1

Stack is full!

The top element is : 5