

Experiment No. 07
Experiment Name: Experiment with Java interfaces

Course title: Programming Language II(Java) Lab
Course code:
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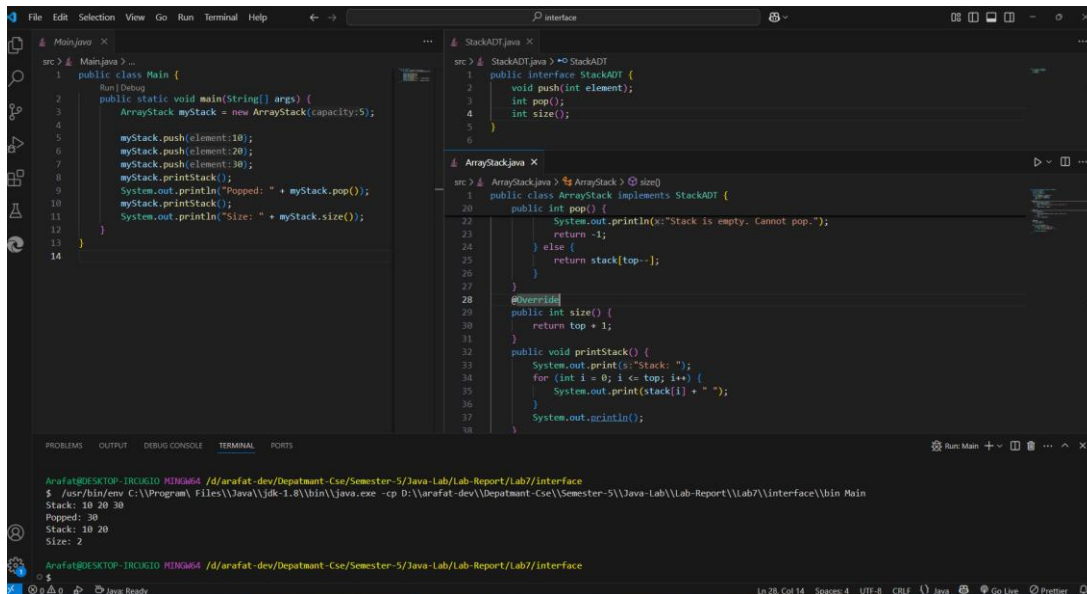


Submitted to-

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Screenshot:



Main.java

```
public class Main {  
    public static void main(String[] args) {  
        ArrayStack myStack = new ArrayStack(5);  
  
        myStack.push(10);  
        myStack.push(20);  
        myStack.push(30);  
        myStack.printStack();  
        System.out.println("Popped: " + myStack.pop());  
        myStack.printStack();  
        System.out.println("Size: " + myStack.size());  
    }  
}
```

StackADT.java

```
public interface StackADT {  
    void push(int element);  
    int pop();  
    int size();  
}
```

```

public class ArrayStack implements StackADT {
    private int[] stack;
    private int top;
    private int capacity;
    // Constructor
    public ArrayStack(int capacity) {
        this.capacity = capacity;
        stack = new int[capacity];
        top = -1;
    }
    @Override
    public void push(int element) {
        if (top == capacity - 1) {
            System.out.println("Stack is full. Cannot push.");
        } else {
            stack[++top] = element;
        }
    }
    @Override
    public int pop() {
        if (top == -1) {
            System.out.println("Stack is empty. Cannot pop.");
            return -1;
        } else {
            return stack[top--];
        }
    }
    @Override
    public int size() {
        return top + 1;
    }
    public void printStack() {
        System.out.print("Stack: ");
        for (int i = 0; i <= top; i++) {
            System.out.print(stack[i] + " ");
        }
        System.out.println();
    }
}

```