Experiment No. 07
Experiment Name: Experiment with Java interfaces

Course title: Programming Language II(Java) Lab
Course code:
Spring 2025

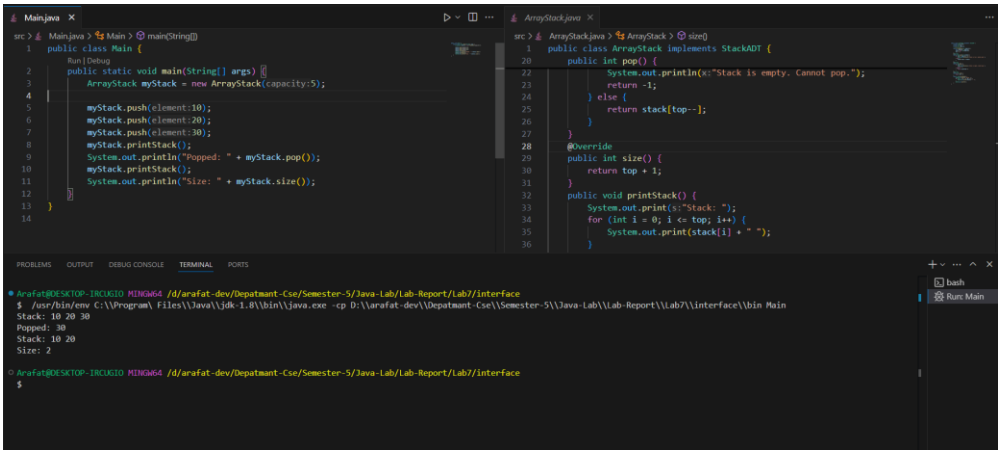
Date of Submission:

Submitted to-

Md. Rafsan Jani
Assistant Professor
Department of Computer Science and Engineering

Sl	Class Roll	Name
01	2023000010001	Md Samaul Islam

Screenshot:



Main.java

```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

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

ArrayStack.java

```java
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();
    }
}
```