Assignment 4 - Stack

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Contents

Codebase :

```
// Stack implementation in Java

public class java {
    private int arr[];
    private int top;
    private int capacity;

    // Creating a stack
    public void Stack(int size) {
      arr = new int[size];
      capacity = size;
      top = -1;
    }

    // Add elements into stack
    public void push(int x) {
      if (isFull()) {
        System.out.println("OverFlow\nProgram Terminated\n");
        System.exit(1);
      }

      System.out.println("Inserting " + x);
      arr[++top] = x;
    }

    // Remove element from stack
    public int pop() {
      if (isEmpty()) {
        System.out.println("STACK EMPTY");
        System.exit(1);
      }
      return arr[top--];
    }

    // Utility function to return the size of the stack
    public int size() {
      return top + 1;
    }

    // Check if the stack is empty
    public Boolean isEmpty() {
      return top == -1;
    }

    // Check if the stack is full
    public Boolean isFull() {
```

```
    return top == capacity - 1;
  }

  public void printStack() {
    for (int i = 0; i <= top; i++) {
      System.out.println(arr[i]);
    }
  }

  public static void main(String[] args) {
    Stack stack = new Stack(5);

    stack.push(1);
    stack.push(2);
    stack.push(3);
    stack.push(4);

    stack.pop();
    System.out.println("\nAfter popping out");

    stack.printStack();

  }
}
```

```
~ > javac java.java && java java

Inserting 1
Inserting 2
Inserting 3
Inserting 4

After popping out
1
2
3

~ >
```