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## Lab 3: Stacks & Queues

### 3.1 Objectives
### 3.2 Problem 1: Simple stack application
Output when user enters $31_{10}$ is 37 in octal

```
Enter a decimal number: 31
Decimal number 31 in octal is 37
Concatenated stack: [6, 5, 4, 3, 2, 1]
stack1 and stack2 are identical: false


Process finished with exit code 0
```

### 3.3. Problem 2: Arithmetic Expression Evaluation
Output:

```
17 / 5 = 3
9 / 12 = 0
Exception in thread "main" java.lang.ArithmeticException Create breakpoint : Division by 0
    at Problem2.applyOperator(Problem2.java:45)
    at Problem2.evaluateInfixExpression(Problem2.java:37)
    at Problem2.main(Problem2.java:95)

Process finished with exit code 1
```

### 3.4. QueueApp.java
Output:

```
Front: 3, Rear: 2
Queue: 40 50 60 70 80


Process finished with exit code 0
```

The output is from the given queue

### 3.5. StackApp.java

```
Stack Array: 20 40 60 80
Stack : 80 60 40 20
80 60 40 20


Process finished with exit code 0
```

### 3.6. PriorityQApp.java

```
Queue: 30 50 40 20 10
10 20 40 50 30


Process finished with exit code 0
```