#### 1. Even or Odd

**Problem:** Given an integer x, determine if it is even or odd.

**Input:** A single integer x.

**Output:** Print "Even" if x is even, otherwise print "0dd".

Example:

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Input: 4

Output: Even

#### 2. Maximum of Two Numbers

**Problem:** Given two integers a and b, print the larger one.

Input: Two space-separated integers.

Output: Print the larger integer.

Example:

### 3. Absolute Value

**Problem:** Given an integer x, print its absolute value (without using built-in functions).

Input: A single integer x.

**Output:** Print x if it's non-negative, otherwise print -x.

**Example:** 

## 4. Positive, Negative, or Zero

**Problem:** Given an integer x, determine whether it is positive, negative, or zero.

**Input:** A single integer x.

Output: Print "Positive", "Negative", or "Zero".

Example:

## 5. Leap Year Check

**Problem:** Given a year y, determine if it is a leap year.

**Conditions:** 

A year is a leap year if it is divisible by 4 but not divisible by 100, unless it is also divisible by 400.

**Input:** A single integer y.

Output: Print "Leap Year" or "Not a Leap Year".

Example:

```
yaml

Input: 2000
Output: Leap Year
```

#### 6. Grade Based on Marks

**Problem:** Given a student's score x, assign a grade:

• 90-100: "A"

• **80-89**: "B"

• 70-79: "C"

• 60-69: "D"

• Below 60: "F"

**Input:** A single integer x ( $0 \le x \le 100$ ).

Output: Print the grade.

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Input: 85
Output: B

### 7. Minimum of Three Numbers

**Problem:** Given three integers a, b, and c, print the smallest.

Input: Three space-separated integers.

Output: Print the smallest integer.

Example:

```
makefile

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Input: 3 7 2

Output: 2
```

# 8. Triangle Validity Check

**Problem:** Given three side lengths a, b, and c, determine if they can form a triangle.

**Condition:** A valid triangle satisfies:

a+b>c, a+c>b, b+c>a

Input: Three space-separated integers.

Output: Print "Valid" if they can form a triangle, otherwise print "Invalid".

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Input: 3 4 5
Output: Valid
```

## 9. Check if a Number is a Multiple of Another

**Problem:** Given two numbers a and b, check if a is a multiple of b.

Input: Two space-separated integers.

**Output:** Print "Yes" if a is a multiple of b, otherwise print "No".

**Example:** 

```
yaml

Input: 10 5
Output: Yes
```

## 10. Simple Calculator (Two Numbers, One Operator)

**Problem:** Given two numbers and an operator (+, -, \*, or /), perform the operation and print the result.

**Input:** Two space-separated integers and a character representing the operator.

Output: Print the result of the operation.

Example:

```
makefile

Input: 10 2 *

Output: 20
```

### 11. Check if Three Numbers are Equal

**Problem:** Given three integers a, b, c, check if they are all equal.

Input: Three space-separated integers.

Output: Print "Equal" if all three numbers are the same, otherwise print "Not Equal".

```
makefile

Input: 5 5 5
Output: Equal
```

### 12. Find the Middle Number

**Problem:** Given three distinct integers, find the middle one (neither the maximum nor the minimum).

Input: Three distinct integers.Output: Print the middle number.

**Example:** 

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Input: 3 7 5

Output: 5

**Problem:** Given a point (x, y), determine which quadrant it lies in.

• Quadrant 1: x>0 and y>0

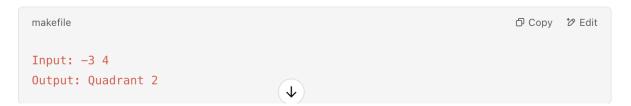
• Quadrant 2: x<0 and y>0

• Quadrant 3: x<0 and y<0

• Quadrant 4: x>0 and y<0

**Input:** Two integers representing the coordinates x and y.

**Output:** Print the quadrant number or "Origin" if (x, y) = (0, 0).



#### 14. Check if a Number is Between Two Given Numbers

**Problem:** Given three integers a, b, x, check if x is between a and b (inclusive).

Input: Three space-separated integers.

**Output:** Print "Yes" if x is between a and b, otherwise print "No".

Example:

yaml

Input: 10 20 15
Output: Yes

## 15. Convert Temperature (Celsius to Fahrenheit or Vice Versa)

Problem: Given a temperature and a unit (C or F), convert it to the other unit.

Formula:

• Fahrenheit to Celsius:  $C = \frac{(F-32) imes 5}{9}$ 

• Celsius to Fahrenheit:  $F=rac{(C imes 9)}{5}+32$ 

Input: An integer representing the temperature and a character ('C' or 'F').

Output: Print the converted temperature.

Example:

makefile

Input: 100 C
Output: 212 F

# 16. Traffic Light Simulation

Problem: Given a traffic light color (R, Y, or G), print the corresponding action:

- "R" → "Stop"
- "Y" → "Get Ready"
- "G" → "Go"

Input: A single character ('R', 'Y', or 'G').

Output: Print the action.

Example:



# 17. Check for Right-Angled Triangle

**Problem:** Given three sides a, b, c, check if they form a right-angled triangle.

Condition: A triangle is right-angled if the Pythagorean theorem holds:

$$a^2 + b^2 = c^2$$

(or any permutation of this equation).

Input: Three space-separated integers.

Output: Print "Right-Angled" if the condition holds, otherwise print "Not Right-Angled".

Example:

makefile

Input: 3 4 5
Output: Right-Angled

 $\downarrow$ 

## 18. Simulate a Simple ATM Machine

**Problem:** Given a balance and a withdrawal amount, check if the transaction can be processed. **Conditions:** 

- The withdrawal amount must be a multiple of 5.
- The withdrawal amount must be less than or equal to the balance.
- There is a \$0.50\$ transaction fee.

Input: Two space-separated numbers representing balance and withdrawal amount.

Output: Print the new balance or "Transaction Failed".

Example:



## 21. Compare Two Fractions Without Floating Points

**Problem:** Given two fractions  $\frac{a}{b}$  and  $\frac{c}{d}$ , determine which one is larger.

Condition: Use cross multiplication to compare:

a imes d vs. b imes c

**Input:** Four space-separated integers a, b, c, d (numerators and denominators).

Output: Print "First" if the first fraction is larger, "Second" if the second is larger, or "Equal".

Example:

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Input: 1 2 3 4

Output: First