IF-ELSE STATEMENT

CONDITIONAL STATEMENT

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TOPIC OUTLINE

`if` Conditional Statement

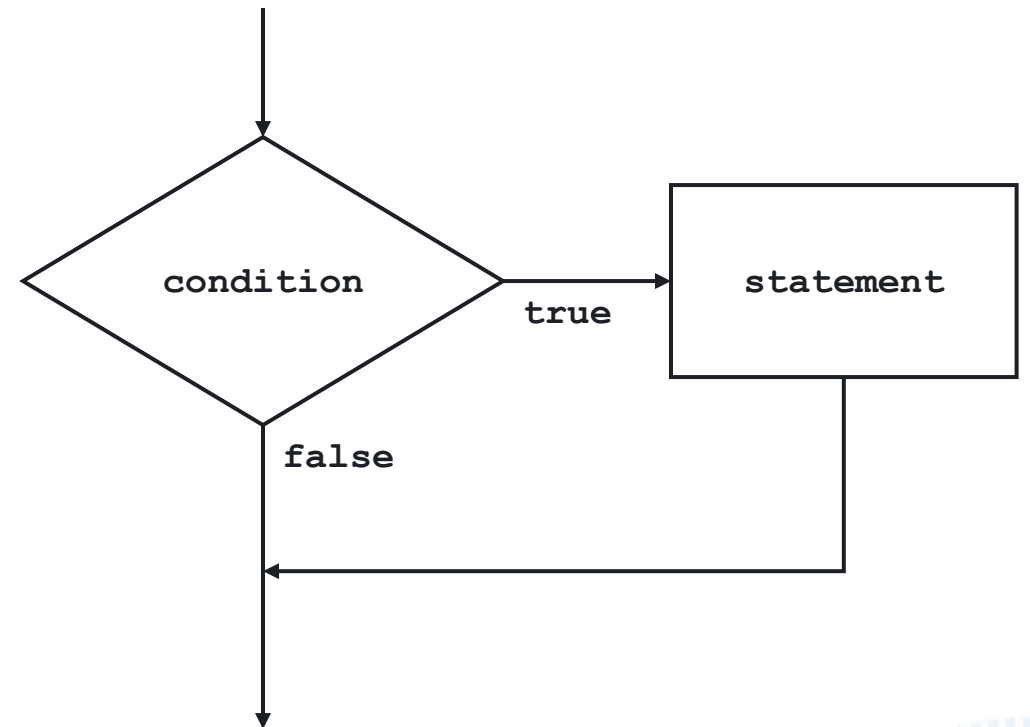`if-else` Conditional Statement

`if-elif-else` Conditional Statement

IF STATEMENT

IF STATEMENT

The **if** statement is a fundamental control flow statement that allows you to execute a block of code **conditionally** based on whether a specified condition evaluates to **True** or **False**.
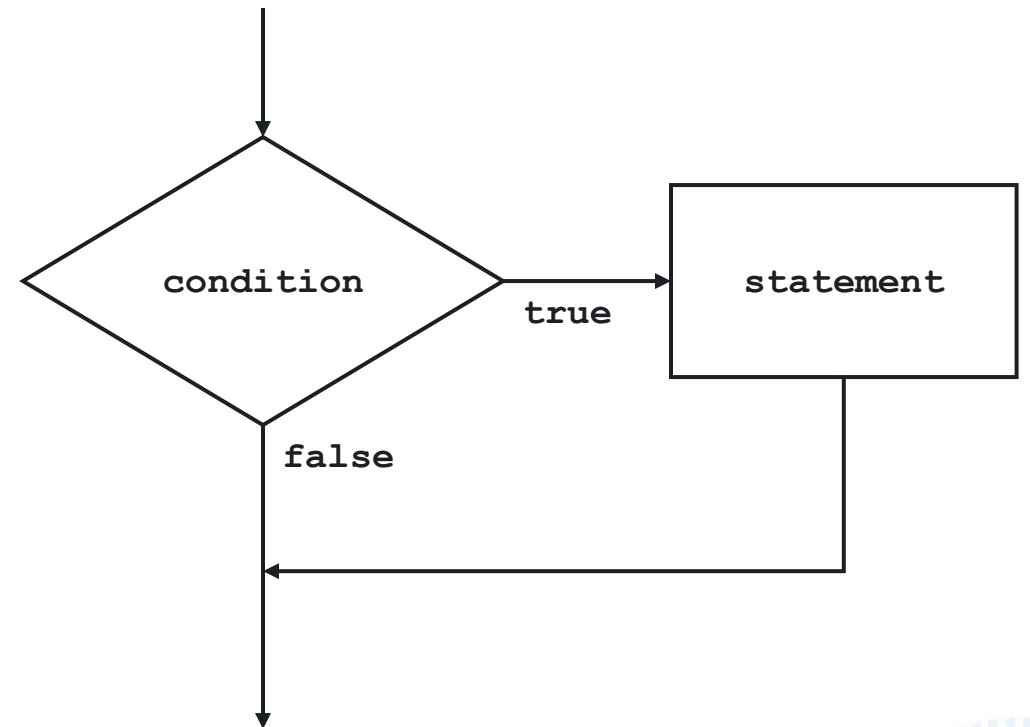
IF STATEMENT

syntax

```python
if condition:

    // code if the condition is true
```
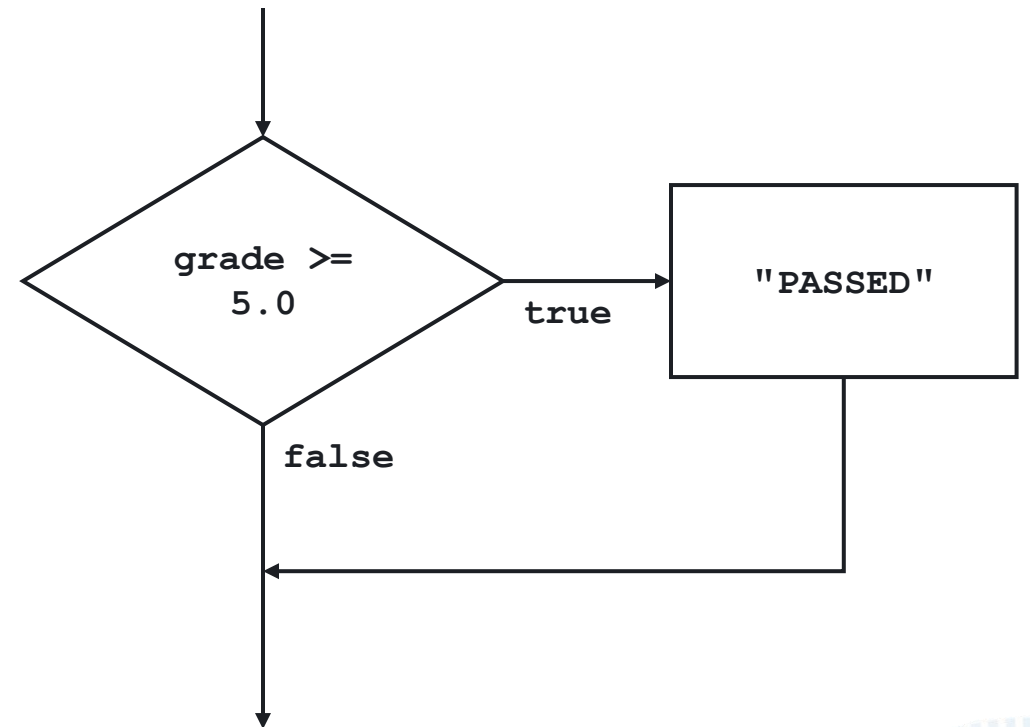

condition

true → statement

false

EXERCISE

```python
grade = 4.0


if grade >= 5.0:

    print("PASSED!")
```

EXERCISE

```python
grade = 4.0


if grade >= 5.0:

    print("PASSED!")

if grade < 5.0:

    print("FAILED!")
```
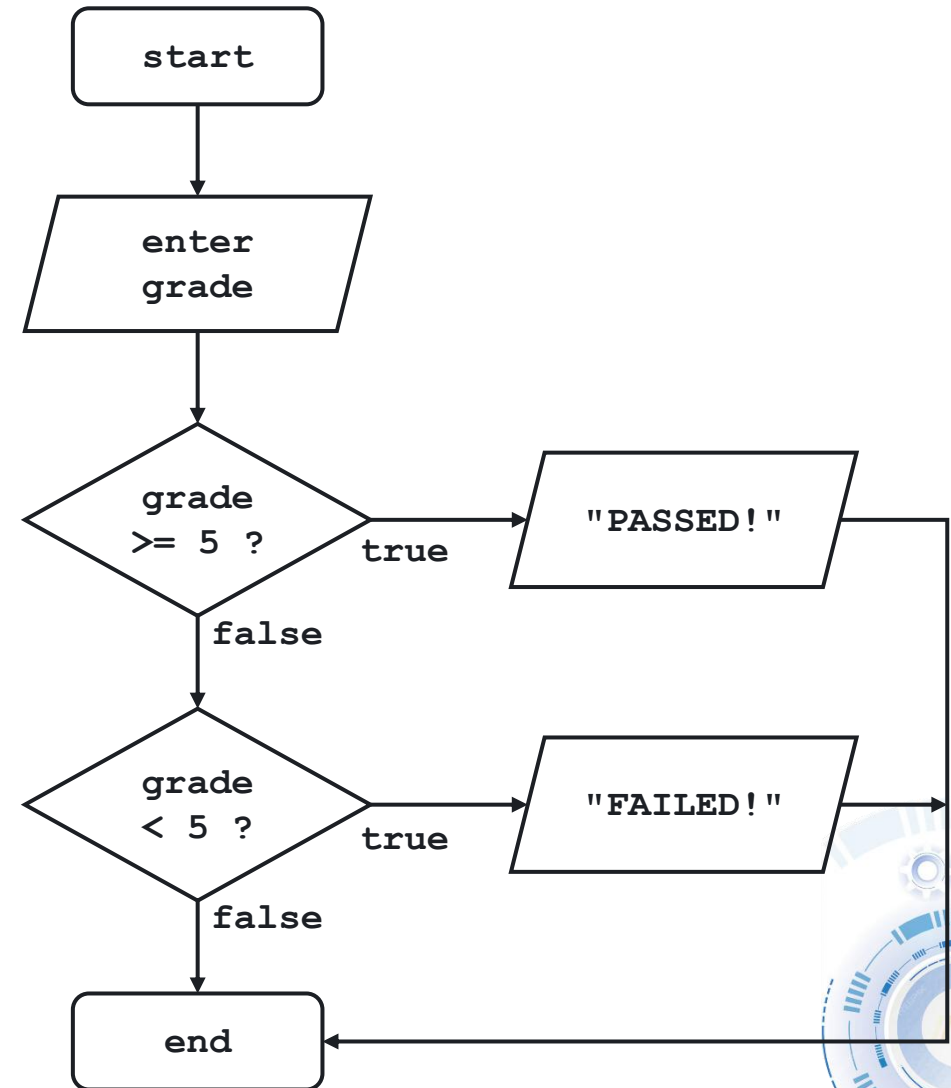
IF-ELSE STATEMENT

The **if-else** statement extends the **if** statement by providing an alternative block of code to execute if the condition is **False**.
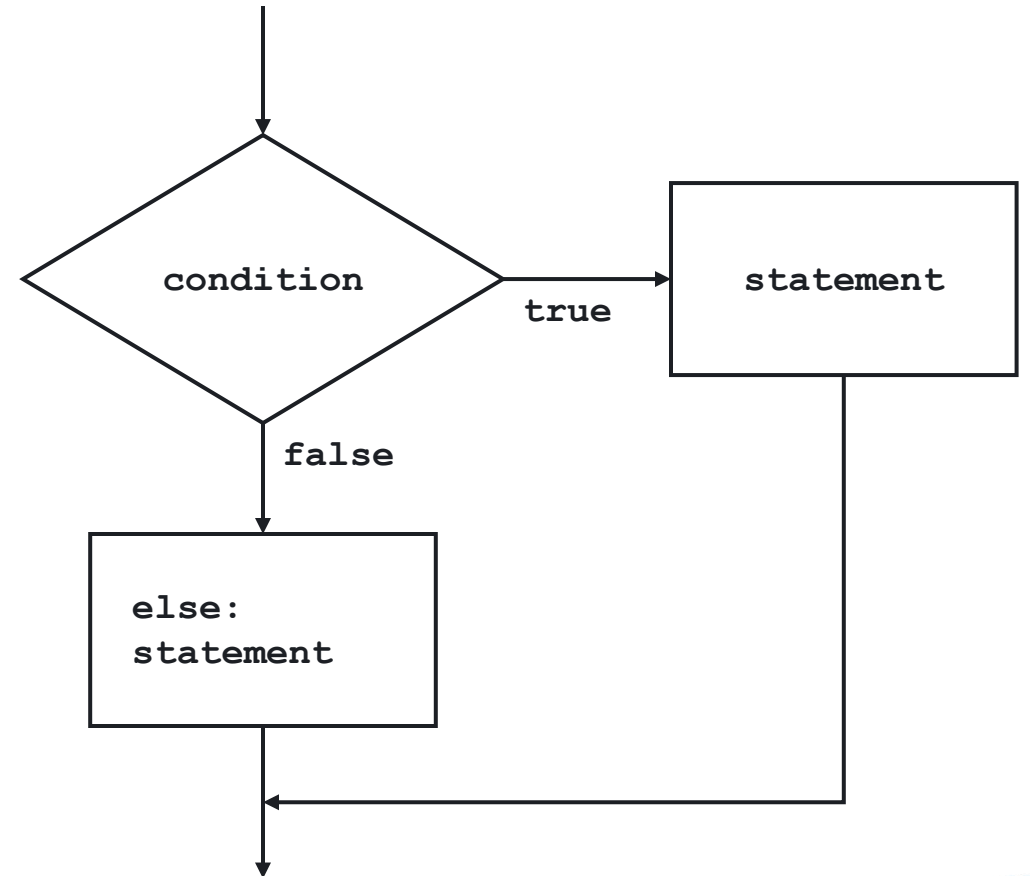
IF-ELSE STATEMENT

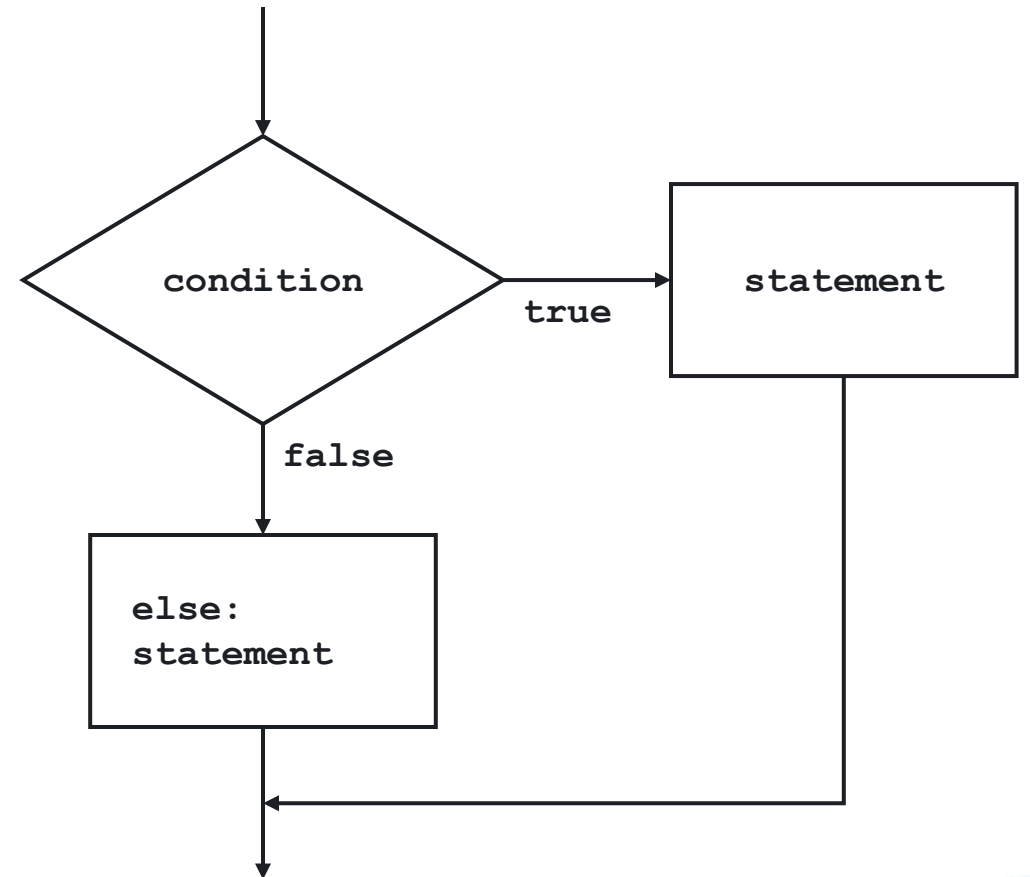syntax

```python
if condition:
    // code if the condition is true
else:
    // code if the condition is false
```
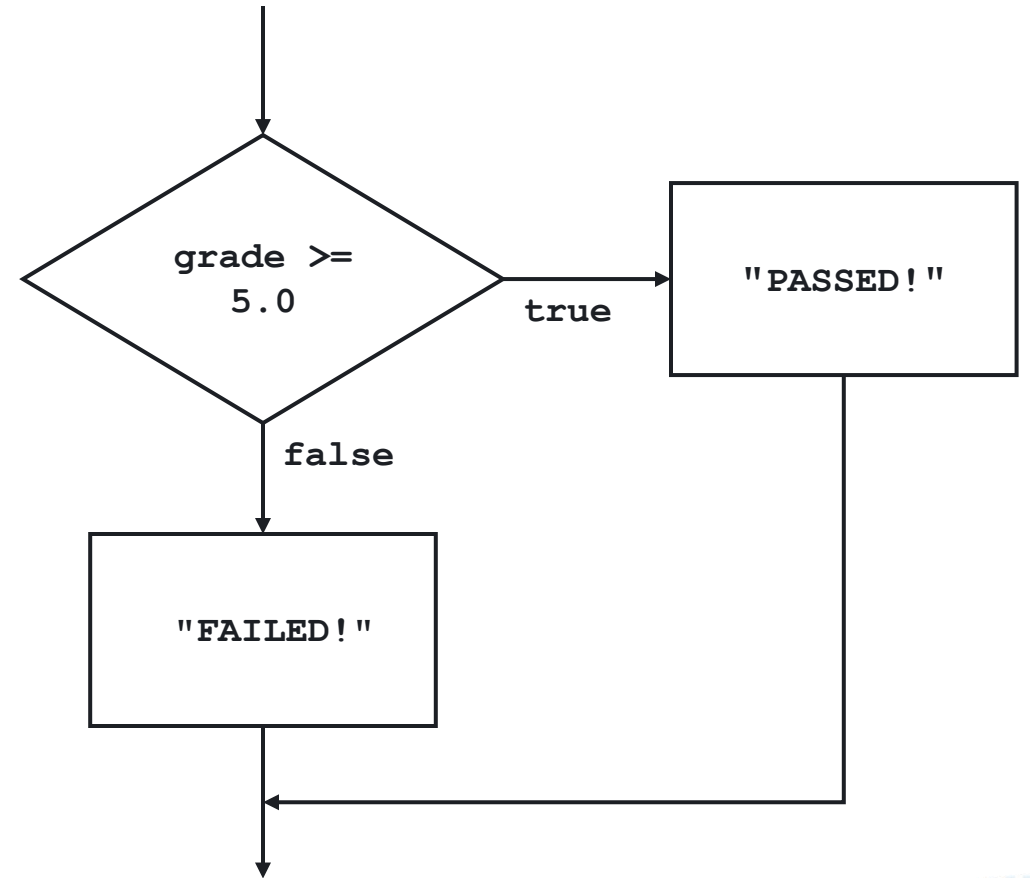
EXERCISE

```python
grade = 4.0


if grade >= 5.0:

    print("PASSED!")

else:

    print("FAILED!")
```

CASCADING IF-ELSE STATEMENT

syntax

```python
if condition 1:

    // if the condition 1 is true

elif condition 2:

    // if the condition 2 is true

else:

    // if condition 1 and 2 are false
```

```
                              │
                              ▼
                      ◇ Condition 1 ◇ ──true──→ ┌─────────────┐
                              │                  │  statement  │
                            false                └─────────────┘
                              ▼
                      ◇ Condition 2 ◇ ──true──→ ┌─────────────┐
                              │                  │  statement  │
                            false                └─────────────┘
                              ▼
                      ◇ Condition n ◇ ──true──→ ┌─────────────┐
                              │                  │  statement  │
                            false                └─────────────┘
                              ▼
                      ┌─────────────┐
                      │   else:     │
                      │  statement  │
                      └─────────────┘
                              │
                              ▼
```
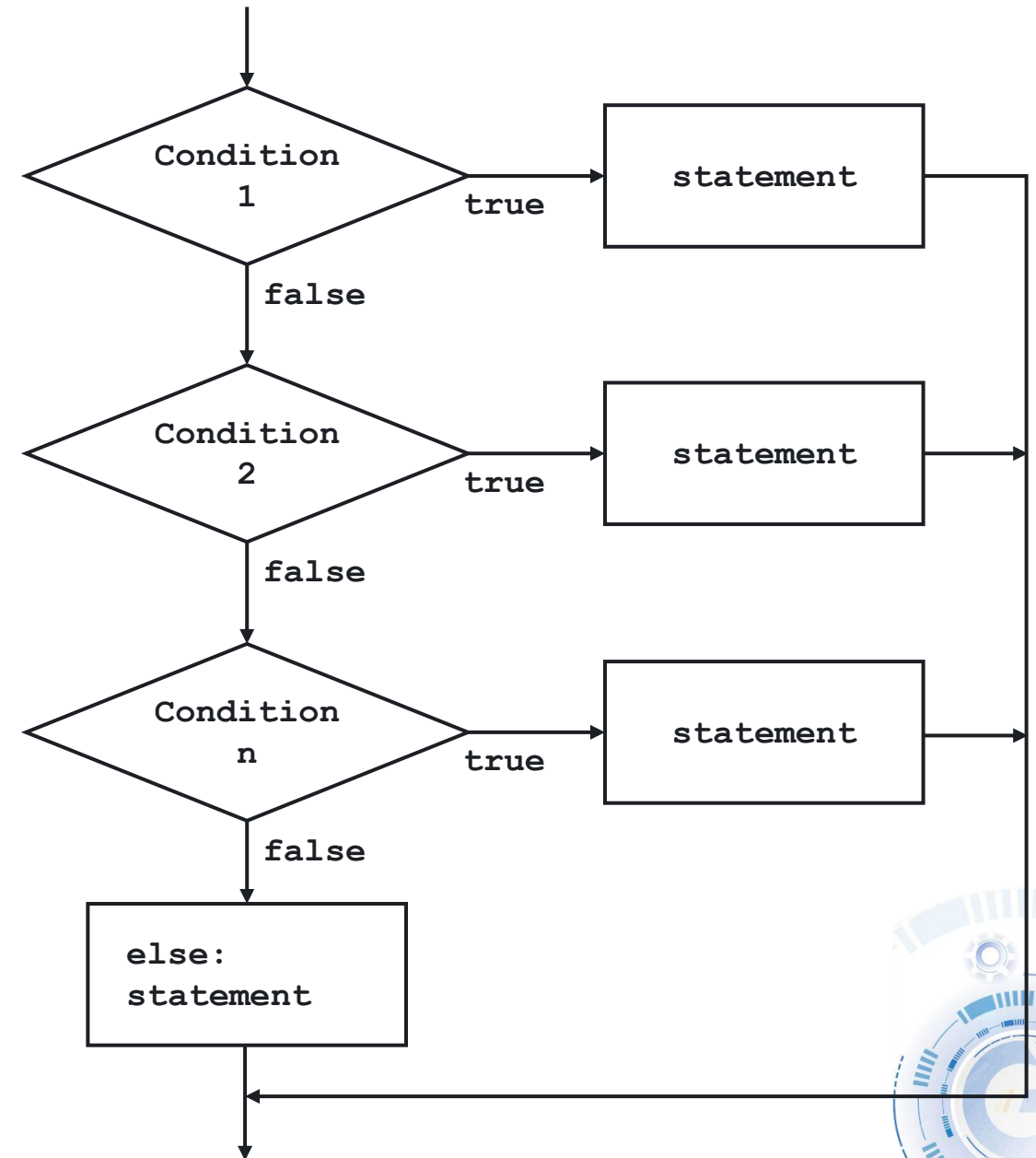
EXERCISE

```python
grade = 2.9

if grade >= 5.0:

    print("PASSED!")

elif grade < 5.0:

    print("FAILED!")

elif grade < 3.0:

    print("DISMISSED!")

else:

    print("INVALID!")
```

```
            │
            ▼
        ╱grade >=╲         true      ┌──────────────┐
       ╱  5.0     ╲ ──────────────▶  │  "PASSED!"   │
        ╲        ╱                   └──────────────┘
          false
            │
            ▼
        ╱grade < ╲          true      ┌──────────────┐
       ╱  5.0     ╲ ──────────────▶  │  "FAILED!"   │
        ╲        ╱                   └──────────────┘
          false
            │
            ▼
        ╱grade < ╲          true      ┌──────────────┐
       ╱  3.0     ╲ ──────────────▶  │ "DISMISSED!" │
        ╲        ╱                   └──────────────┘
          false
            │
            ▼
      ┌──────────────┐
      │  "INVALID!"  │
      └──────────────┘
            │
            ▼
```
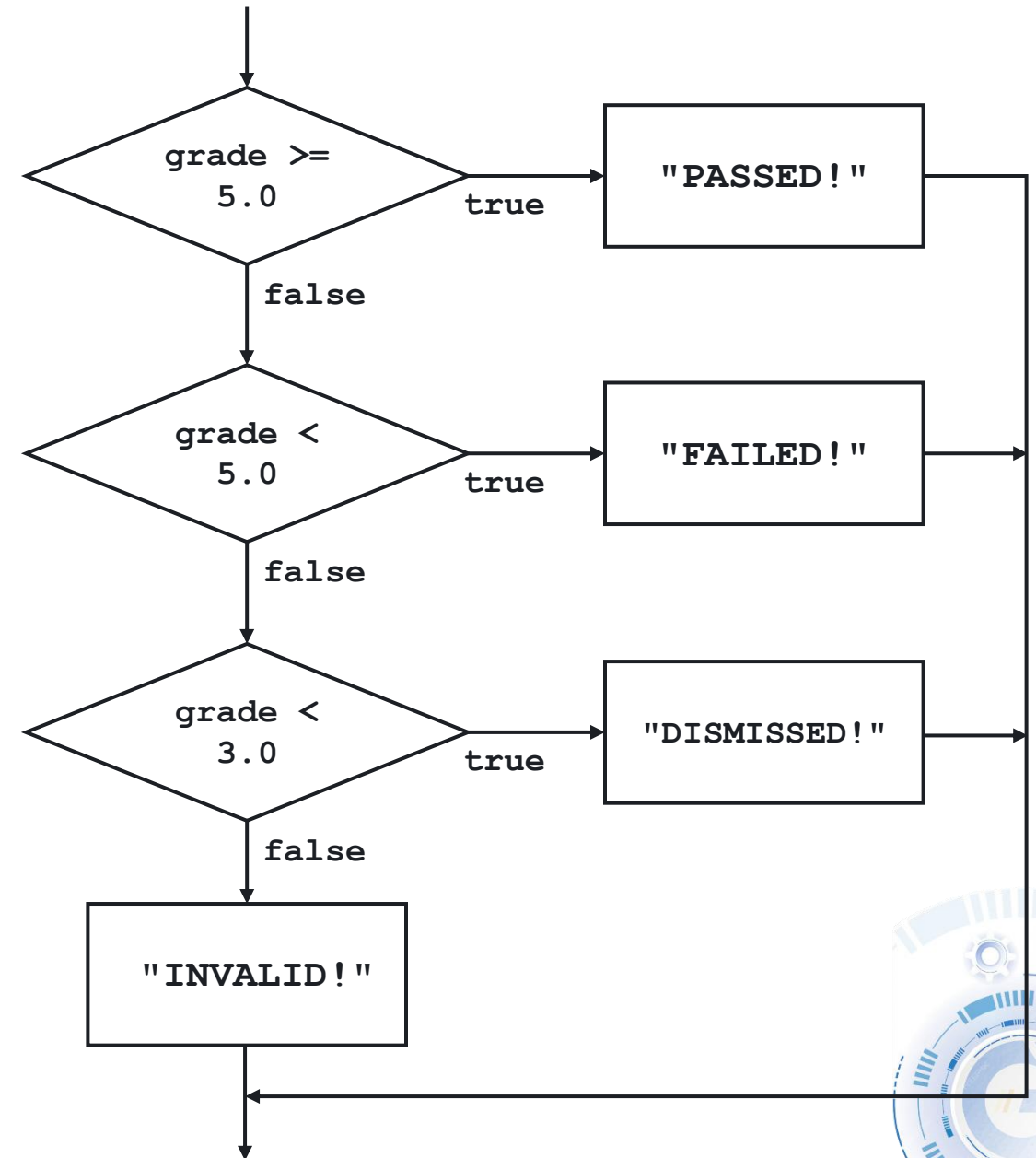
EXERCISE

```python
grade = 2.9


if grade >= 5.0:

    print("PASSED!")

elif grade < 3.0:

    print("DISMISSED")

elif grade < 5.0:

    print("FAILED!")

else:

    print("INVALID!")
```

LABORATORY