



# Python Conditional Statements – Detailed Notes

## ⌚ 1. Introduction

Conditional statements allow us to make decisions in code based on certain conditions (True/False). They control program flow and work with boolean expressions.

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## ⌚ 2. The if Statement

**Syntax:**

```
if condition:  
    # code to execute if condition is True
```

**Example 1: Simple Check**

```
age = 18  
if age >= 18:  
    print("You are eligible to vote")
```

**Output:**

```
You are eligible to vote
```

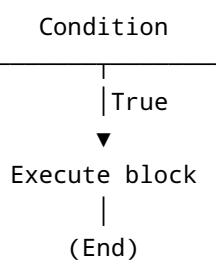
**Example 2: Using Variables**

```
num = 10  
if num > 0:  
    print("Positive number")
```

**Output:**

```
Positive number
```

**Flow Diagram:**



### 3. The if-else Statement

**Syntax:**

```

if condition:
    # code if True
else:
    # code if False

```

**Example 1: Voting Eligibility**

```

age = 16
if age >= 18:
    print("Eligible to vote")
else:
    print("Not eligible to vote")

```

**Output:**

```
Not eligible to vote
```

**Example 2: Even/Odd Check**

```

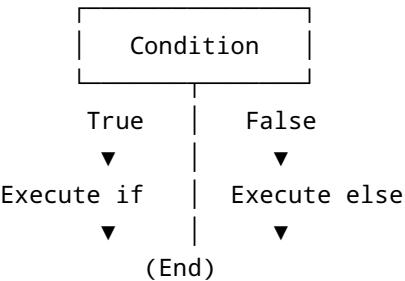
num = 7
if num % 2 == 0:
    print("Even")
else:
    print("Odd")

```

**Output:**

Odd

**Flow Diagram:**



## ⌚ 4. The if-elif-else Statement

**Syntax:**

```
if condition1:  
    # block1  
elif condition2:  
    # block2  
elif condition3:  
    # block3  
else:  
    # default block
```

**Example 1: Grading System**

```
marks = 72  
if marks >= 90:  
    print("Grade A")  
elif marks >= 75:  
    print("Grade B")  
elif marks >= 50:  
    print("Grade C")  
else:  
    print("Fail")
```

**Output:**

Grade B

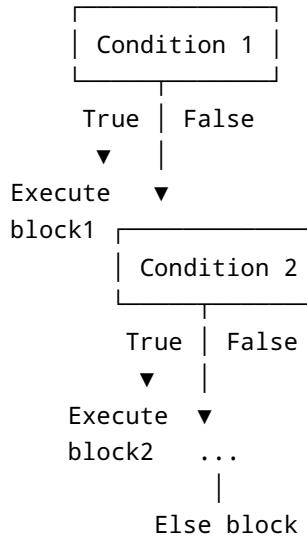
### Example 2: Ticket Pricing

```
age = 65
if age < 12:
    print("Ticket: ₹50")
elif age < 60:
    print("Ticket: ₹100")
else:
    print("Ticket: ₹70 (Senior Citizen Discount)")
```

**Output:**

```
Ticket: ₹70 (Senior Citizen Discount)
```

**Flow Diagram:**



## ⌚ 5. Nested if Statements

**Syntax:**

```
if condition1:  
    if condition2:  
        # block when both are True  
    else:  
        # block when condition1 True, condition2 False  
else:  
    # block when condition1 False
```

### Example 1: Login System

```
username = "admin"  
password = "1234"  
if username == "admin":  
    if password == "1234":  
        print("Login Successful")  
    else:  
        print("Wrong Password")  
else:  
    print("Invalid Username")
```

#### Output:

```
Login Successful
```

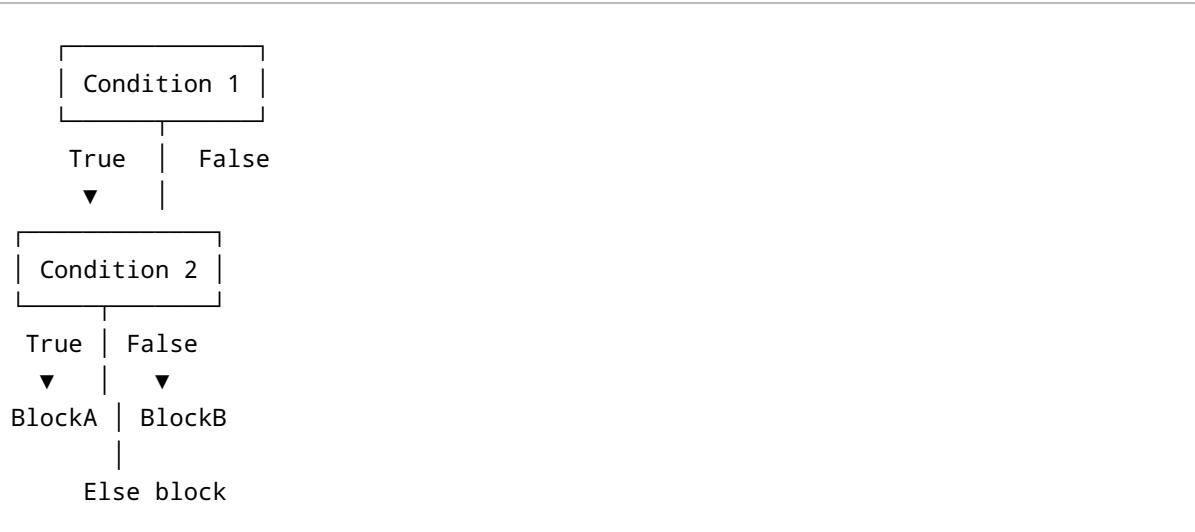
### Example 2: Shopping Discount

```
amount = 1200  
is_member = True  
if amount > 1000:  
    if is_member:  
        print("Discount: 20%")  
    else:  
        print("Discount: 10%")  
else:  
    print("No discount")
```

#### Output:

```
Discount: 20%
```

#### Flow Diagram:



## ⌚ 6. Using Logical Operators in Conditions

### Example 1: Multiple Conditions with and

```

age = 25
citizen = "India"
if age >= 18 and citizen == "India":
    print("Eligible to vote in India")
else:
    print("Not Eligible")
  
```

### Output:

Eligible to vote in India

### Example 2: Using or

```

day = "Sunday"
holiday = True
if day == "Sunday" or holiday:
    print("Holiday!")
else:
    print("Work day")
  
```

### Output:

Holiday!

### Example 3: Using not

```
is_logged_in = False
if not is_logged_in:
    print("Please login first")
```

#### Output:

Please login first

## ⌚ 7. Real-Life Scenarios

### ATM Withdrawal System

```
balance = 5000
withdraw = 2000
if withdraw <= balance:
    print("Transaction Successful")
    balance -= withdraw
    print("Remaining Balance:", balance)
else:
    print("Insufficient Balance")
```

### E-commerce Order Check

```
stock = 10
order = 5
if order <= stock:
    print("Order Placed")
else:
    print("Out of Stock")
```

### Movie Ticket Booking

```
age = 15
if age < 13:
```

```
    print("Not allowed for this movie")
elif age < 18:
    print("Allowed with parental guidance")
else:
    print("Allowed")
```

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## 8. Common Mistakes to Avoid

-  Using = instead of == inside conditions
-  Too many nested ifs → better to use elif
-  Not covering the else case when needed