

Session 3: Conditionals in Python (Extended Assignments)

◆ Assignment 1: Simple Chatbot for Fruit Orders

We will create a **fruit order chatbot** that uses `if`, `elif`, and `else`.

Students will learn:

- How to check membership (`in`)
- How to use multiple conditions
- Handling invalid input

```
# Fruit Chatbot
fruits = ["apple", "banana", "mango", "orange"]

print("Welcome to the Fruit Shop!")
print("Available fruits:", fruits)

order = input("Which fruit would you like to buy? ").lower()

if order == "apple":
    print("Great choice! Apples cost ₹100 per kg.")
elif order == "banana":
    print("Bananas are ₹40 per dozen.")
elif order == "mango":
    print("Mangoes are ₹150 per kg.")
elif order == "orange":
    print("Oranges are ₹80 per kg.")
else:
    print("Sorry, we don't have that fruit today.")
```

✓ Example Run

```
Welcome to the Fruit Shop!
Available fruits: ['apple', 'banana', 'mango', 'orange']
```

Which fruit would you like to buy? mango
Mangoes are ₹150 per kg.

⚠ Common Errors Students May Face

- Typing "Mango" instead of "mango" → fix with `.lower()`
- Asking for unavailable fruit → handled with `else`

◆ Assignment 2: Word Guessing Game

This is a **mini-game** where the program picks a secret word, and the user tries to guess it.

Students will learn:

- Using `if` conditions for game logic
- Handling correct/incorrect guesses
- Loop + conditionals together

```
# Word Guessing Game
secret_word = "python"
guess = input("Guess the secret word: ").lower()

if guess == secret_word:
    print("🎉 Correct! You guessed the word.")
elif guess in ["java", "c++", "ruby"]:
    print("Close, but not the secret word. Try again!")
else:
    print("Nope, that's not the word. Better luck next time!")
```

✅ Example Run 1

```
Guess the secret word: python
🎉 Correct! You guessed the word.
```

✅ Example Run 2

Guess the secret word: java
Close, but not the secret word. Try again!

✓ Example Run 3

Guess the secret word: banana
Nope, that's not the word. Better luck next time!

⚠ Possible Errors & Fixes

- User may type "Python" → fixed with `.lower()`
- Forgetting `==` and writing `=` → `SyntaxError`
- Indentation mistakes → remind them `if`, `elif`, `else` need consistent indentation

◆ Final Assignment Flow

1. **Number checker** (positive, negative, zero) – already given
2. **Fruit order chatbot** (`if/elif/else` + `in`)
3. **Word guessing game** (conditions + comparison)

👉 Do you want me to **expand the word guessing game** into a **multi-try game with loops** (e.g., 3 attempts to guess), or should I keep it as a single-condition check for now?

You said:

make note of all of this with easy explanation

ChatGPT said:

Alright ✨ I'll make **teaching notes** for Session 3 (Conditionals) with **easy explanations, examples, assignments, and error-handling** — like a handout you could share with students.



Session 3: Conditionals in Python

◆ 1. What are Conditionals?

Conditionals allow a program to **make decisions**.

They check whether something is **True** or **False**, and then decide what to do.

Think of it like:

👉 *If it's raining, take an umbrella. Else, don't.*

◆ 2. Types of Conditionals in Python

✅ if statement

Used when you want to check one condition.

```
x = 10
if x > 5:
    print("x is greater than 5")
```

✅ if-else statement

Used when you want two possible outcomes.

```
x = 3
if x > 5:
    print("x is greater than 5")
else:
    print("x is not greater than 5")
```

✅ if-elif-else

Used when you have **multiple conditions**.

```
score = 88
if score >= 90:
    print("Excellent!")
```

```
elif score >= 80:
    print("Good job!")
else:
    print("Keep practicing.")
```

✅ Nested if

You can put an `if` inside another `if`.

```
age = 20
if age >= 18:
    if age < 21:
        print("Adult but not yet 21")
    else:
        print("21 or older")
else:
    print("Minor")
```

✅ Shorthand (One-liner if)

```
marks = 95
print("Pass") if marks >= 40 else print("Fail")
```

◆ 3. Useful Functions & Operators

👉 `min()` and `max()`

- `min()` → returns the smallest value
- `max()` → returns the largest value

```
a, b, c = 15, 25, 10
print("Minimum:", min(a, b, c)) # 10
print("Maximum:", max(a, b, c)) # 25
```

👉 **in operator**

Checks membership (whether something exists).

```
fruits = ["apple", "banana", "cherry"]
if "banana" in fruits:
    print("Banana is available!")
```

👉 **and / or**

- **and** → both conditions must be true
- **or** → at least one condition must be true

```
age = 19
country = "India"
```

```
if age >= 18 and country == "India":
    print("You can vote in India")
```

```
if age < 18 or country != "India":
    print("Condition with OR is True")
```

◆ **4. Common Errors and Fixes**

✗ **Indentation Error**

```
if 5 > 3:
print("Hello")    # ✗ Wrong
```

✅ **Fix:**

```
if 5 > 3:
    print("Hello")    # Correct
```

✗ **Using = instead of ==**

```
if x = 5: # ❌ Error
```

✅ Fix:

```
if x == 5: # Correct
```

❌ **Type Error** (comparing int and str)

```
if "10" > 5: # ❌ Error
```

✅ Fix:

```
if int("10") > 5: # Correct
```

◆ 5. Assignments

Assignment 1: Number Checker

Write a program that checks if a number is **positive**, **negative**, or **zero**.

```
num = int(input("Enter a number: "))

if num > 0:
    print("Positive number")
elif num < 0:
    print("Negative number")
else:
    print("Zero")
```

Assignment 2: Fruit Order Chatbot

A chatbot that tells the price of fruits using **if-elif-else**.

```
fruits = ["apple", "banana", "mango", "orange"]

print("Welcome to the Fruit Shop!")
print("Available fruits:", fruits)
```

```
order = input("Which fruit would you like to buy? ").lower()

if order == "apple":
    print("Apples cost ₹100 per kg")
elif order == "banana":
    print("Bananas cost ₹40 per dozen")
elif order == "mango":
    print("Mangoes cost ₹150 per kg")
elif order == "orange":
    print("Oranges cost ₹80 per kg")
else:
    print("Sorry, we don't have that fruit.")
```

Assignment 3: Word Guessing Game

Guess the secret word.

```
secret_word = "python"
guess = input("Guess the secret word: ").lower()

if guess == secret_word:
    print("🎉 Correct! You guessed the word.")
elif guess in ["java", "c++", "ruby"]:
    print("Close, but not the secret word. Try again!")
else:
    print("Nope, better luck next time!")
```

◆ **6. Practice Problems**

- LeetCode: Detect Capital
 - LeetCode: Valid Palindrome
-

✨ **Key Takeaway:**

Conditionals let your program **think and decide**.

- Use `if` for one condition
- Use `if-else` for two paths
- Use `if-elif-else` for multiple choices
- Use operators (`and`, `or`, `in`) to combine conditions
- Always check for **indentation** and **data types** to avoid errors