Topic: Python Basic Syntax & First Program

What is Basic Syntax in Python?

- **Syntax** = Rules and structure jo Python follow karta hai code likhne ke liye.
- Agar syntax galat hua → **SyntaxError** aayega.
- Python ka syntax simple & readable hota hai (English jaise).

Why Learn Basic Syntax First?

- Har programming language ka apna syntax hota hai → `bina syntax ke code run nahi hoga.`
- Ye foundation hai — AI/ML projects me bhi ye hi base use hota hai.
- Indentation, comments, print ka sahi use samajh aa jaye to aage complex code easy ho jata hai.

Where Do We Use Basic Syntax?

- Har Python program ke start me
- Loops, conditions, and functions likhne me
- AI/ML me output display karne, data debug karne, aur code organize karne me

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How to Write Your First Python Program?

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1. Hello World (First Program)

```python
CopyEditprint("Hello, World!")
```

- **print()** = Output display karne ka function
- `"Hello, World!"` = String (text)

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2. Indentation

- Python me indentation (spaces) **compulsory** hai
- Default → **4 spaces** (tab nahi, spaces use karo)
- Indentation ka use: code block batane ke liye

```python
CopyEditif True:
    print("This is indented")  #  Correct
```

Galat Example:

```python
CopyEditif True:
print("This will cause IndentationError")
```

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3. Comments

- Comments code explain karte hain, Python inhe ignore karta hai.

Single-line comment:

```python
CopyEdit# This is a single-line comment
```

Multi-line comment:

```python
CopyEdit'''
This is a
multi-line comment
'''
```

Ya:

```python
CopyEdit"""
This is also
a multi-line comment
"""
```

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4. Print Statements

- `print()` → output show karta hai
- Multiple values print karne ke liye comma use hota hai
- f-string ka use karke variables directly likh sakte ho

```python
CopyEditname = "Rishabh"
print("Hello", name)
print(f"Hello {name}, Welcome to Python!")
```

Full Example: Basic Syntax & First Program

```python
CopyEdit# First Python Program

# Variable
name = "Rishabh"

# Print message
print("Hello, World!")
print("Welcome", name)

# Indentation Example
if True:
    print("Indentation works properly!")  # 4 spaces

'''
Multi-line comment
Explaining the program
'''
```

Output:

```
CopyEditHello, World!
Welcome Rishabh
Indentation works properly!
```

Common Errors

Error Type	Reason	Fix
SyntaxError	Brackets/quotes galat lagana	Syntax check karo
IndentationError	Indentation sahi nahi lagayi	4 spaces maintain karo
NameError	Variable define nahi kiya	Pehle value assign karo
TypeError	Galat data type ka operation	Correct type use karo

Interview Explanation (Smart Hinglish)

Q1: What is the first program in Python?

First program `"Hello, World!"` hota hai jo beginner ko output ka structure sikhata hai.

Q2: Why is indentation important in Python?

Python me indentation code blocks define karta hai. Bina indentation ke Python error dega.

Q3: How do you write comments in Python?

- Single-line → `#`
- Multi-line → `''' '''` ya `""" """`

Q4: How is `print()` function used?

Output display karne ke liye use hota hai. Variables ke saath comma ya f-string ka use karte hain.

Mini Practice Task

```python
CopyEdit# Task:
# 1. Apna naam variable me store karo
# 2. print() function se Hello message print karo
# 3. Indentation ka example do
# 4. Ek multi-line comment likho
```