🐍Python Basics Course

Topic: Data Types, Variables, Input, Output & Comments

This course is designed for **absolute beginners**. The explanations are **simple**, **clear**, and **exam-friendly**, so students can easily understand and remember the concepts.

🐥1. Introduction to Python

Python is a **high-level**, **easy-to-read**, and **beginner-friendly** programming language.

Why Python?

- Simple English-like syntax
- Easy to learn and write
- Used in web development, AI, ML, data science, automation, etc.

🐥2. Variables in Python

What is a Variable?

A **variable** is a name used to store data (values) in memory.

Example:

```
age = 20
name = "Ram"
```

Here: - `age` is a variable storing number `20` - `name` is a variable storing text `"Ram"`

Rules for Naming Variables

✅Can start with a letter or underscore (`_`) ✅Can contain letters, numbers, underscore ❌Cannot start with a number ❌Cannot use keywords (like `if`, `for`, `class`)

Valid Examples:

```
student_name = "Sita"
_marks = 80
age1 = 18
```

Invalid Examples:

```
1age = 20    # ❌
class = 10   # ❌
```

♌**Important Note:** Python does **not** require declaring variable types.

🐥3. Basic Data Types in Python

🐓Integer (`int`)

Used to store whole numbers.

Example:

```
age = 21
marks = 90
```

🐕 Float (`float`)

Used to store decimal numbers.

Example:

```
price = 99.99
height = 5.6
```

🦔String (`str`)

Used to store text. Text is written inside quotes (`" "` or `' '`).

Example:

```
name = "Abiskar"
city = 'Kathmandu'
```

🐚Boolean (`bool`)

Stores only **True** or **False**.

Example:

```
is_student = True
has_passed = False
```

♌**Important Note:** - `True` and `False` must start with capital letters

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🐥4. Checking Data Type

We use `type()` function to check the data type.

Example:

```
x = 10
print(type(x))
```

Output:

```
<class 'int'>
```

🐥5. Taking Input from User

What is Input?

Input means taking data from the user during program execution.

Syntax:

```
variable = input("message")
```

Example:

```
name = input("Enter your name: ")
print(name)
```

♌**Important Note:** - `input()` always takes input as **string**

Converting Input Data Type

If we want numbers, we must convert input.

Example (Integer Input):

```
age = int(input("Enter your age: "))
print(age)
```

Example (Float Input):

```
price = float(input("Enter price: "))
print(price)
```

🐥6. Printing Output

`print()` Function

Used to display output on the screen.

Simple Example:

```
print("Hello World")
```

Printing Variables:

```
name = "Sita"
print(name)
```

Using f-string (Recommended)

Example:

```
name = "Ram"
age = 20
print(f"My name is {name} and my age is {age}")
```

♌**Important Note:** - f-strings are easy and readable

🐥7. Comments in Python

What are Comments?

Comments are used to **explain code**. Python **ignores** comments while running.

Single-Line Comment

Uses `#`

Example:

```
# This is a comment
age = 20
```

Multi-Line Comment

Uses triple quotes (`'''` or `"""`)

Example:

```
"""
This program takes input
and prints the output
"""
```

♌**Why Comments are Important?** - Makes code easy to understand - Helpful for beginners - Useful for exams and projects

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🐥8. Complete Beginner Example Program

```
# Student Information Program

name = input("Enter your name: ")
age = int(input("Enter your age: "))
is_student = True

print("\n--- Student Details ---")
print(f"Name: {name}")
print(f"Age: {age}")
print(f"Student Status: {is_student}")
```

⭐Important Points to Remember (Exam Notes)

✔️Python is case-sensitive ✔️No need to declare variable types ✔️ `input()` gives string by default ✔️Use `int()` and `float()` for conversion ✔️Use comments for explanation ✔️ `print()` is used for output

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🌀Conclusion

This lesson covers: - Variables - Basic Data Types - Input & Output - Comments

These are the **foundation of Python programming**. Once students understand this, learning Python becomes very easy.

Practice daily and try small programs to build confidence!