

Python — Chapter 2: Variables & Data Types (Hinglish, No Code)

1) Variables kya hain?

Variables ek naam (label) hain jo computer ke memory mein kisi value ko store karne ke liye use hota hai. Socho jaise ek dabba jisme tum kuch rakh ke us par sticker laga dete ho — sticker = variable name, dabba ke andar jo hai = value.

2) Variable naming ke rules (aur best practices)

- Alphabets, numbers aur underscore '_' use kar sakte ho.
- Name number se start nahi hona chahiye.
- Spaces allowed nahi hain.
- Case-sensitive hota hai: age aur Age alag hain.
- Reserved words use mat karo.
- Best practice: meaningful names do, snake_case use karo.

3) Data types kya-kya hote hain

- A. Numbers — int (poore numbers), float (decimal numbers), complex (scientific use).
- B. Strings (text).
- C. Boolean — True/False.
- D. NoneType — jab value absent ho.
- E. Collections — list, tuple, set, dictionary.

4) Mutable vs Immutable

Mutable objects change ho sakte hain (jaise list). Immutable objects change nahi hote (jaise numbers, strings, tuples).

5) Type conversion

Kabhi ek type ko doosre mein convert karna padta hai. Automatic bhi hoti hai (int + float = float). Explicit conversion safer hoti hai.

6) Variables aur memory

Variable ek reference hota hai jo memory location ko point karta hai.

7) Common mistakes

- Variable names starting with number.
- Reserved keywords ka use.
- Mutable/Immutable behaviour ka confusion.
- Type conversion ka dhyaan na dena.

8) Quick tips for beginners

Meaningful names rakho, single-purpose variables banao, aur practice karo.

Practice Set — Chapter 2 (Variables & Data Types)

Q1. Variable kya hota hai? Daily life ka koi ek example do.

Q2. Kya yeh variable names valid hain? (Yes/No likho)

- 1) 2name
- 2) student_age
- 3) my name
- 4) for
- 5) roll_number

Q3. Match the following data types with their values:

- a) int — 10
- b) float — 3.14
- c) bool — True
- d) str — 'Hello'
- e) NoneType — ?

Q4. Boolean data type ke do possible values kya hote hain?

Q5. Difference explain karo (simple shabdon mein):

- a) Mutable vs Immutable
- b) int vs float
- c) List vs Tuple

Q6. Agar ek string '25' hai (text form mein), usko number banake maths mein use karne ke liye kya karna padega?

Q7. Apni life se ek example do jahan tum dictionary jaisa structure use kar sakte ho (key-value pair).