

Variable and Types



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Agenda

- **Comments**
- **Data**
- **Variable**
- **Data Types**
- **print()**
- **Dynamic Type**
- **Memory Management**

Comments

In Python, Comment are two types :-

- **Single line comment :-**
 - Use # symbol write anything that is comment
 - Syntax :- # TasiNCoder Here
- **Multi line comment :-**
 - Syntax :-

```
"""  
Hello there  
"""
```

Data

- **Data is any piece of information which is used by the program to accomplish a task.**

Variety of Data

- **Age = 21** —————→ **Integers**
- **Price = 540.99** —————→ **Real**
- **City_Name = "Bhopal"** —————→ **String**

Variable

- **Variable are used to hold data during execution of the program.**
- **Variables are the names of memory locations where we store Data.**
- **In Python you don't declare variables.**
- **But, Python में जब variable में data को रखते हैं तब variable declare होता है**
- **Variable Automatic declare होता है**

Variable Name

- **Variables name is any combination of** Alphabet (a to z or A to Z), **Underscore(_)** **and** **Digit(0 to 9).**
- **No other symbol is allowed**
- **Variable name are case sensitive.**
- **A valid variable name cannot start with a Digit.**
- **Variable name cannot be a keyword.**

Valid variable Name	Invalid variable Name
A, a, AA, aa,	A-8, x@, m k,
A2, a2, x145, xyzzzy,	82, 59ad, a.b,
q_56, as25_, _assd45,	All Keywords Name

Data Types

- **In, Python Three types of data.**
 - **Numbers :- int, float, complex.**
 - **Boolean :- bool.**
 - **String :- str.**
 - **double is not there in Python**
 - **char is not there in Python**

Data Types

- **int** :- **30**
- **float** :- **30.0**
- **complex** :- **3+4j**
- **bool** :- **True or False**
- **str** :- **'TasiNCoder'**
"TasiNCoder"
""TasiNCoder""
""""TasiNCoder""""

print()

- **print() is a predefine function**
- **sep = ' '**
- **end = '\n'**

Few Methods

- **del is a keyword**
- **type() is predefine function**
- **id() is a predefine function**

Dynamic Type

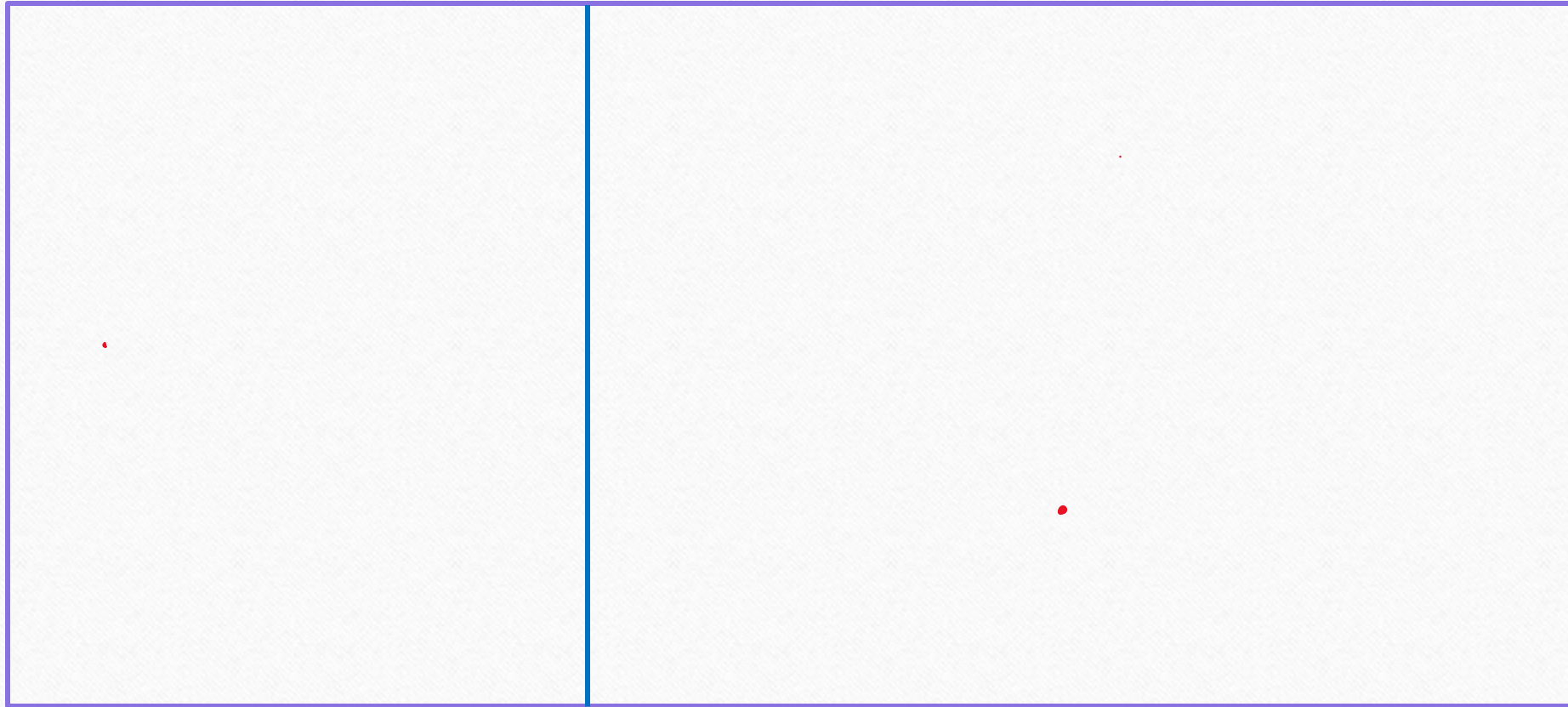
- **During program execution, not only the value of a variable can change but also its type.**
- **Example :-**

I. A = 10	#type of A is int
II. A = 10.0	#type of A is float
III. A = True	#type of A is bool
IV. A = 'Coder'	#type of A is str

Memory Management

Namespace(Stack)

Private Heap Space




Garbage Collection

- **It is a program, invoked by python itself, whenever required, whose job is to release memory of garbage blocks.**
- **Object which is not referenced by any name.**

What is an object

- **Object is a real world entity**
- **Object is an instance of a class**
- **Object is a proper noun**
- **Class is a common noun**

Name किसका होता हैं

- **Name in namespace is a variable which is used to contain `id(reference)` of** 
 - 1. Instance object**
 - 2. Function object**
 - 3. Class object**

In, Python everything is an object.