CodeDexters

Variables, Statements , Operators and user Input

Variables And Constants

- Fixed values used in programs such as numbers, letters, and strings are called as constants.
- Values of constants never change during program execution.
- Variables are named memory location used to store data in program which keeps on changing during execution. Programmers can decide the names of the variables.

- **Example for Constant**
- **>>> print 123**
- **123**
- **>>> print 98.6**
- **98.6**
- **>>> print 'Hello world'**
- **Hello world**

Example for Variable
x = 12.2
y = 14

Later:
x = 78
y = 98

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VARIABLE DECLARATION

- Variable naming conventions
  - Must start with a letter or an underscore “_”.
  - Must consist of letters, numbers and underscores.
  - Case Sensitive.

  Example :
    - First_name
    - Age
    - Num1
    - testnum
  - You can not use reserved words for variable names and identifiers.

Python Literals

- **Python Literals**
- *The data which is being assigned to the variables are called as **Literal**.*
- *In Python, **Literals** are defined as raw data which is being assigned to the variables or constants.*
- **Numeric Literals**
- They are – Integer, Float, and Complex.

- Age = 34 #Integer
- Weight = 45.98kg #Float
- Complex = 10 + 4j

Programming Statement

- x = 2 ← Assignment Statement
- x = x + 2 ← Assignment with expression
- print x ← Print statement

- Various components of programming statements
  - Variable
  - Operator
  - Constant
  - Reserved Word

OPERATORS IN PYTHON

- Operators are used to manipulate the values of operands.
- There are various types of Operators used in program :
  - Arithmetic operators.
  - Comparison (relational) operators.
  - Assignment operators.
  - Logical operators.

Python Operators

- Arithmetic Operators :
  - Arithmetic operators are the symbols that are used to perform arithmetic operations on operands.
- Types of Arithmetic operators:

- Addition → +
- Subtraction → -
- Multiplication → *
- Division →

Python Comparism Operators

Operator	Name	Example	
==	Equal	x == y	
!=	Not equal	x != y	
>	Greater than	x > y	
<	Less than	x < y	
>=	Greater than or equal to	x >= y	
<=	Less than or equal to	x <= y	

Python Logical Operators

Operator	Description	Example
and	Returns True if both statements are true	x < 5 and x < 10
or	Returns True if one of the statements is true	x < 5 or x < 4
not	Reverse the result, returns False if the result is true	not(x < 5 and x < 10)

Assignment Operators

- Assignment operators are used to assign values to variables:

Operator	Example	Same As	
=	x = 5	x = 5	
+=	x += 3	x = x + 3	
-=	x -= 3	x = x - 3	
*=	x *= 3	x = x * 3	
/=	x /= 3	x = x / 3	
%=	x %= 3	x = x % 3	
//=	x //= 3	x = x // 3	
**=	x **= 3	x = x ** 3	
&=	x &= 3	x = x & 3	
|=	x |= 3	x = x | 3	