

VARIABLES

Variable is a name that is assigned to a value. The value can be changed during execution of a program. While creating a variable, memory space is reserved in memory. Based on the data type of a variable, the interpreter allocates memory.

Syntax: variable name=value

Example: price=20

Rules for naming variables

- Variable name can be any length.
- They can contain both letters and numbers. But they cannot begin with numbers.
- Both upper case and lower case letters are used.
- Variable names are case sensitive.

Example: midname, midName, MidName are different variables.

- Variable name cannot be any one of the keywords.

Assigning values to variables

The equal (=) sign is used to assign the values to variables.

- Left of = operator is the name of the variable.
- Right of = operator is the value of variable.

Example:

```
>>>X=5
>>>name="Python"
>>>print X
5
>>>print name
Python
```

In the above program X and name are variables. The value of X is 5 and the value of name is Python.

EXPRESSIONS

Expression is a combination of values, variables, operators and operands. A value itself is considered as an expression.

Example:

17	#expression
X	#expression
x+17	#expression

Expression consists of combination of operators and operands.

Example:

5+ (8*k)	#expression
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The above expression consists of 2 sub expressions. That is 5 and (8*k).Here sub expression (8*k) is evaluated first.

Evaluation of expressions:

When expression is typed at the prompt, the interpreter evaluates it, and finds the value of expression.

Program:

>>>12+8	#expression
20	
>>>n=100	#expression
>>>print(n)	#expression
100	
>>>100	#expression
100	

STATEMENTS (or) I/O STATEMENTS

Statement is a section of code (or) instruction that represents a command (or) action.

Types of statements

- i) Assignment statements
- ii) Simultaneous assignment statements
- iii) Input statements
- iv) Print statements

i) Assignment statements

Assignment statements assigns right of = symbol to left of = symbol.

Example:

```
>>>Name='CSE'  
>>>age=100  
>>>Name  
CSE  
>>>age  
100
```

ii) Simultaneous assignment statements

Simultaneous assignment statement is used to assign more number of values to more variables simultaneously.

Example:

```
>>>x,y=10,20  
>>>x  
10  
>>>y  
20  
>>>sum, diff=x+y, y-x  
>>>sum  
30  
>>>diff  
10
```

iii) Input statements

In input statements 'input' function is used to get the input from user.

Example:

```
>>>Name=input ("Enter the Name :")  
Enter the Name: CSE  
>>>Name
```

CSE

```
>>>Age=input ("Enter the age :")
Enter the age: 100
>>> Age
100
```

iv) Print statements

Here 'print' function is used to print values to screen. It takes a series of values are separated by commas.

Example:

```
>>>Name=input ("Enter the Name :")
Enter the Name: Jovitha
>>>print ('Hello', Name)
Hello Jovitha
>>>print ('Welcome', Jovitha)
Welcome Jovitha
>>>print ('Hello \n',Name)
Hello
Jovitha
```

TUPLE ASSIGNMENT

Tuple is an immutable sequence of values. (i.e.) we cannot change the elements of tuples. Tuples are created by using parenthesis (). Tuple is an ordered collection of values of different data types. Tuple values are indexed by integers.

Example:

```
>>>t=('a','b','c')
>>>t
('a','b','c')
```

Tuple assignment is an assignment with tuple of variables on left side and tuple of expressions on right side.

```
>>> X, Y, Z=100, -45, 0
>>> print X, Y,Z
```

100 -45 0

Here left side is a tuple of variable. The right side is a tuple of expression.

Working of tuple assignment

- i) The first variable in the tuple of left side is assigned to first expression in tuple of right side.
- ii) Similarly, the second variable in the tuple of left side is assigned to second expression in tuple of right side. Number of variables on left side and the number of expressions on the right side must be same.