iSCALE

The iScale Data Science Notes

Connect with Us

www.theeiscale.com

Whatsapp

7880-113-112

Instagram

theiscale

theiscale.founders

Lecture - 2

Variables & Data Types in Python

Creating a variable

In [1]:
```
x = 5
print(x)
```

```
5
```

In [2]:
```
x = 5
y = "apple"
z = 10.23
print(x)
print(y)
print(z)
```

```
5
apple
10.23
```

In [3]:
```
%whos
```

```
Variable   Type     Data/Info
-----------------------------------------
x          int      5
y          str      apple
z          float    10.23
```

```
# Rules for Python variables:
1)A variable name must start with a letter or the underscore character
2)A variable name cannot start with a number
3)A variable name can only contain alpha-numeric characters
and underscores (A-z, 0-9, and _ )
4)Variable names are case-sensitive
(age, Age and AGE are three different variables)
5)A variable name cannot be any of the Python keywords.
```

A variable name must start with a letter or the underscore character

In [4]:
```
a = 3
print(a)
```

```
3
```

In [5]:
```
apple_box = 2
print( apple_box)
```

```
2
```

In [6]:
```
_ =3
print(_)
```

```
3
```

In [7]:
```
_a = 6
print(_a)
```

```
6
```

A variable name cannot start with a number

In [8]:
```
1 = 23
print(1)
```

```
  Cell In[8], line 1
    1 = 23
    ^
SyntaxError: cannot assign to literal here. Maybe you meant '==' instead of
'='?
```

In [9]:
```
1 == 23
print(1)
```

```
1
```

In [10]:
```
1_apple = 23
print(1_apple)
```

```
  Cell In[10], line 1
    1_apple = 23
     ^
SyntaxError: invalid decimal literal
```

variable name can only contain alpha-numeric

In [11]:
```
a_1 = 34
print(a_1)
```

```
34
```

In [12]:
```
abc123xyz = 3.5
print(abc123xyz)
```

```
3.5
```

In [13]:
```
&$% = 3
print(&$%)
```

```
  Cell In[13], line 1
    &$% = 3
    ^
SyntaxError: invalid syntax
```

In [14]:
```
abc&$% = 3
print(&$%)
```

```
  Cell In[14], line 1
    abc&$% = 3
        ^
SyntaxError: invalid syntax
```

Variable names are case-sensitive (age, Age and AGE are three different variables)

In [15]:
```
age = 20
Age = 24
AGE = 18
print(age)
print(Age)
print(AGE)
```

```
20
24
18
```

Data Types in Python

In [16]:
```
a = 2
b = 1.5
c = " My name is swati"
print(a)
print(type(a))
print(b)
print(type(b))
print(c)
print(type(c))
```

```
2
<class 'int'>
1.5
<class 'float'>
 My name is swati
<class 'str'>
```

In [17]:
```
b = [1,2,3,4]
print(b)
print(type(b))
```

```
[1, 2, 3, 4]
<class 'list'>
```

In [18]:
```
c = (1,2,3)
print(c)
print(type(c))
```

```
(1, 2, 3)
<class 'tuple'>
```

In [19]:
```
num = 2+4j
print(num)
print(type(num))
```

```
(2+4j)
<class 'complex'>
```

In [20]:
```
num1 = True
print(num1)
print(type(num1))
```

```
True
<class 'bool'>
```

In [21]:
```
num2 = False
print(num2)
print(type(num2))
```

```
False
<class 'bool'>
```

A variable name cannot be any of the Python keywords.

In [22]:
```
print = 12
print(print)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[22], line 2
      1 print = 12
----> 2 print(print)

TypeError: 'int' object is not callable
```

In [23]:
```
int = 2
print(int)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[23], line 2
      1 int = 2
----> 2 print(int)

TypeError: 'int' object is not callable
```

Practice Questions

Question 1

Imagine you're working on a customer management system, and you have the first name and last name of a customer stored as separate variables.You're developing a customer management system for a retail store. In your database, you have the first name and last name of a customer stored as separate variables: first_name = "John" and last_name = "Doe". How would you concatenate these strings to form the full name "John Doe" for the customer's profile

```
first_name = "John"
last_name = 'Doe'

full_name = first_name + " "+ last_name
print(full_name)
```