What is Python?

- **Python is an interpreted, high-level and general-purpose programming language.**
- **object-oriented approach aim to help programmers write clear**
- **dynamically typed and garbage-collected.**
- **Python was created in the late 1980s by Guido van Rossum**

In [1]:

```
print("Hello World!")
```

```
Hello World!
```

In [2]:

```
print('Hello World')
```

```
Hello World
```

In [3]:

```
print("Hello1")
print("Hello2")
print("Hello3")
print("Welcome to Our Python course")
```

```
Hello1
Hello2
Hello3
Welcome to Our Python course
```

In [4]:

```
print "Hello World"
```

```
  File "<ipython-input-4-2e860ebf713e>", line 1
    print "Hello World"
                      ^
SyntaxError: Missing parentheses in call to 'print'. Did you mean print("Hello World")?
```

In [5]:

```
print(Hello)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-5-85bf5114fa6b> in <module>
----> 1 print(Hello)

NameError: name 'Hello' is not defined
```

In [6]:

```
print("Hello')
```

```
  File "<ipython-input-6-21f0c5b97628>", line 1
    print("Hello')
                  ^
SyntaxError: EOL while scanning string literal
```

Comments

In [8]:

```
#taking some notes
```

```
#taking some notes
#take a note
```

In [9]:

```
'''Michael Irwin Jordan is an American scientist, professor at the University of Californ
ia,
Berkeley and researcher in machine learning, statistics, and artificial intelligence.
He is one of the leading figures in machine learning,
and in 2016 Science reported him as the world's most influential computer scientist.
'''.replace("\n"," ")
```

Out[9]:

```
"Michael Irwin Jordan is an American scientist, professor at the University of California
,  Berkeley and researcher in machine learning, statistics, and artificial intelligence.
He is one of the leading figures in machine learning,  and in 2016 Science reported him as
the world's most influential computer scientist. "
```

In [1]:

```
"""write something"""
```

Out[1]:

```
'write something'
```

Declaring Variables

- **variable = value**
- **n = 5**

In [11]:

```
n = 1
print(n)
```

```
1
```

In [12]:

```
p = n
print(p)
```

```
1
```

Data Types

- **Integer**
- **Float**
- **String**
- **Boolean**
- **Complex**
- **List**
- **Dictionary**
- **Tuple**
- **Set**

In [13]:

```
#String
hello = "World"
```

In [14]:

```
print(hello) #print variable
```

```
print("World") #print value
print(n)
```

```
World
World
1
```

In [15]:

```
#type()
type(hello)
```

Out[15]:

```
str
```

In [16]:

```
print(type(hello)) #print data type
```

```
<class 'str'>
```

In [17]:

```
#Integer
int_value = 5
int_value
```

Out[17]:

```
5
```

In [18]:

```
print(type(int_value))
```

```
<class 'int'>
```

In [29]:

```
t = 3.19
print(type(t))
```

```
<class 'float'>
```

In [30]:

```
type('x')
```

Out[30]:

```
str
```

In [32]:

```
#Boolean
t, f = True, False
print(type(t))
print(t)
print(f)
```

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

In [31]:

```
#swapping
data1 = 7
data2 = 12
data3 = 23
data4 = 33
```

```
data1, data2, data3 , data4 = data2 , data1, data4, data3
print(data1, data2, data3, data4)
```

```
12 7 33 23
```

In [33]:

```
print("data1:", data1, "data:", data2)
```

```
data1: 12 data: 7
```

In [34]:

```
#length ifadesi bir string değerin uzunluğunu bulmamıza yarar.
len("Pythoneer")
```

Out[34]:

```
9
```

In [35]:

```
len("Welcome to Turkish AI Hub")
```

Out[35]:

```
25
```

In [36]:

```
hello
```

Out[36]:

```
'World'
```

In [37]:

```
print(len(hello)) #print data length
```

```
5
```

In [38]:

```
p
```

Out[38]:

```
5
```

In [39]:

```
len(5)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-39-91fed648bb37> in <module>
----> 1 len(5)

TypeError: object of type 'int' has no len()
```

In [40]:

```
len(15.6)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-40-79577706af1a> in <module>
----> 1 len(15.6)

TypeError: object of type 'float' has no len()
```

In [41]:

```
data22 = "Data Science"
len(data22)
```

Out[41]:

```
12
```

In [42]:

```
len("Data Science")
```

Out[42]:

```
12
```

In [43]:

```
a = 15
b = 23

a, b = b, a
print(a)
print(b)
```

```
23
15
```

In [47]:

```
#F-string
name = "Turkey"
print(f'hello {name}')
```

```
hello Turkey
```

In [48]:

```
print("Hello", name)
```

```
Hello Turkey
```

In [50]:

```
name2 = "Aslı"
print("Hello {}".format(name2))
```

```
Hello Aslı
```

In [66]:

```
data12 = 5
data13 = 90
print("My value:{} and Your value:{}".format(data12, data13))
```

```
My value:5 and Your value:90
```

In [67]:

```
print(f'My value: {data12} and your value: {data13}')
```

```
My value: 5 and your value: 90
```

In [71]:

```
print("My value:" + str(data12) + "Your Value:" + str(data13))
```

```
My value:5Your Value:90
```

In [73]:

```
a = 50
```

In [74]:

```
type(a)
```

Out[74]:

```
int
```

In [76]:

```
type(str(a))
```

Out[76]:

```
str
```

In [81]:

```
type(a)
```

Out[81]:

```
int
```

In [82]:

```
a = str(a)
```

In [83]:

```
a
```

Out[83]:

```
'50'
```

In [84]:

```
type(a)
```

Out[84]:

```
str
```

Aritmetic Operations

In [51]:

```
#exponential numbers
5**2
```

Out[51]:

```
25
```

In [52]:

```
5**3
```

Out[52]:

```
125
```

In [53]:

```
35+67
```

Out[53]:

```
102
```

In [54]:

```
"35"+"67"
```

Out[54]:

```
'3567'
```

In [55]:

```
"Omer" + "Cengiz"
```

Out[55]:

```
'OmerCengiz'
```

In [56]:

```
"35" + 67
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-56-bb64d695b9f6> in <module>
----> 1 "35" + 67

TypeError: can only concatenate str (not "int") to str
```

In [57]:

```
"35"*3
```

Out[57]:

```
'353535'
```

In [58]:

```
"hello"*4
```

Out[58]:

```
'hellohellohellohello'
```

In [59]:

```
"hello" "world"
```

Out[59]:

```
'helloworld'
```

In [60]:

```
x = 10

print(x+2)
print(x-2)
print(x*2)
print(x**2)
print(x**4)
print(x/2)
print(x//2)
print(x%2)
```

```
12
8
20
100
10000
5.0
5
0
```

In [61]:

```
y = 13
```

```
print(y/2)
print(y//2)
print(y % 2)
```

```
6.5
6
1
```

In [62]:

```
z = 5
z+=1 # this statement equals to z= z+1 , meaning while the previous value of z is 5, the new z value becomes 6.
z
```

Out[62]:

```
6
```

In [63]:

```
z +=2 #z = z + 2
z
```

Out[63]:

```
8
```

In [64]:

```
z*=2       # z = z * 2
z
```

Out[64]:

```
16
```