Day 2

Variabes & Operators in Python

Creating a variable

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

```
5
apple
```

many values to multiple variables

In [2]:
```
x, y, z = "Orange", "Banana", "Cherry"
print(x)
print(y)
print(z)
```

```
Orange
Banana
Cherry
```

In [3]:
```
x = y = z = "Orange"
print(x)
print(y)
print(z)
```

```
Orange
Orange
Orange
```

Python Output variables

The Python print() function is often used to output variables.

In [4]:
```
x = "Python"
y = "is"
z = "awesome"
print(x, y, z)
```

```
Python is awesome
```

data Types in python

In [8]:
```
x = 2
print(x)
print(type(x))
```

```
2
<class 'int'>
```

In [9]:
```
y = 2.5
print(y)
print(type(y))
```

```
2.5
<class 'float'>
```

In [10]:
```
z = "hello students"
print(z)
print(type(z))
```

```
hello students
<class 'str'>
```

In [11]:
```
a = 2+4j
print(a)
print(type(a))
```

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

In [12]:
```
b = [1,2,3,4]
print(b)
print(type(b))
```

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

In [13]:
```
c = (1,2,3)
print(c)
print(type(c))
```

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

In [14]:
```
d = {1,2,3}
print(d)
print(type(d))
```

```
{1, 2, 3}
<class 'set'>
```

In [15]:
```
e = {"a":1,"b":2}
print(e)
print(type(e))
```

```
{'a': 1, 'b': 2}
<class 'dict'>
```

In [16]:
```
%whos
```

```
Variable   Type       Data/Info
------------------------------
a          complex    (2+4j)
b          list       n=4
c          tuple      n=3
d          set        {1, 2, 3}
e          dict       n=2
x          int        2
y          float      2.5
z          str        hello students
```

Operators in python

addition

In [17]:
```
a = 5
b = 3
print(a+b)
```

```
8
```

In [18]:
```
a = 5
b = 3.4
print(a+b)
```

```
8.4
```

In [19]:
```
a = 3+5j
c = 3
print(a+c)
```

```
(6+5j)
```

In [20]:
```
a = "hello"
b = " students"
print(a+b)
```

```
hello students
```

In [22]:
```
a= 2.34
b = 3.456
c = 2+7j
d = 3
e = a+b+c+d
print(e)
print(type(e))
```

```
(10.796+7j)
<class 'complex'>
```

Subtraction

In [23]:
```
a = 12
b = 10
print(a-b)
```

```
2
```

In [24]:
```
a = 6
b = 18
c = a-b
print(c)
print(type(c))
```

```
-12
<class 'int'>
```

In [25]:
```
x = 12.345
y = 890.12
print(y-x)
```

```
877.775
```

In [27]:
```
a = 12+5j
b = 8+3j
print(a-b)
```

```
(4+2j)
```

In [28]:
```
a = 112.34
b = 2
c = 5+2j
print((a+b)-c)
```

```
(109.34-2j)
```

In [29]:
```
a = "hello"
b = "world"
print(a-b)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_39268\754520366.py in <module>
      1 a = "hello"
      2 b = "world"
----> 3 print(a-b)

TypeError: unsupported operand type(s) for -: 'str' and 'str'
```

Multiplication

In [30]:
```
a = 10
b = 5
print(a*b)
```

```
50
```

In [31]:
```
c = 2.345
a = 345.678
print(c*a)
```

```
810.61491
```

In [32]:
```
x = 2+3j
y = 4+5j
print(x*y)
```

```
(-7+22j)
```

In [36]:
```
a = 12
b = 3.467
c = 2+5j
e = a*b*c
print(e)
print(type(e))
```

```
(83.208+208.01999999999998j)
<class 'complex'>
```

Divison

In [37]:
```
a = 12
b = 4
print(a/b)
```

```
3.0
```

In [38]:
```
a = 12.5689
b = 2.35684
print(a/b)
```

```
5.332945808794826
```

In [39]:
```
a = 6+9j
c = 3
print(a/c)
```

```
(2+3j)
```

In [40]:
```
a = 12
b = 3
c = 12+15j
d = a/b
print(c/d)
```

```
(3+3.75j)
```

Modulous

In [41]:
```
a = 12
b = 3
print(a%b)
```

```
0
```

In [42]:
```
a = 19
b = 3
print(a%b)
```

```
1
```

In [43]:
```
b = 5.36
c = 2.8
print(b%c)
```

```
2.5600000000000005
```

In [44]:
```
b = 12+36j
c = 3
print(b%c)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_39268\2449413162.py in <module>
      1 b = 12+36j
      2 c = 3
----> 3 print(b%c)

TypeError: can't mod complex numbers.
```

In [45]:
```
%whos
```

```
Variable   Type       Data/Info
------------------------------
a          int        19
b          complex    (12+36j)
c          int        3
d          float      4.0
e          complex    (83.208+208.01999999999998j)
x          complex    (2+3j)
y          complex    (4+5j)
z          str        hello students
```

Exponent

In [46]:
```
a = 4
print(a**3)
```

```
64
```

In [47]:
```
a = 12.56
print(a**6)
```

```
3925887.3741833675
```

In [2]:
```
a = True
b = False
print(type(a))
print(type(b))
```

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

In [3]:
```
print(a and b)
```

```
False
```

In [4]:
```
print(a or b)
```

```
True
```

In [5]:
```
print(not(a))
```

```
False
```

In [51]:
```
#find the area of rectable with length 12 cm  and breadth 6 cm
a = 12
print("the length of the rectancle is 12 cm")
b = 6
print("the length of the rectangle is 6 cm")
area = a*b
print("the area of the rectancgle is ", area)
```

```
the length of the rectancle is 12 cm
the length of the rectangle is 6 cm
the area of the rectancgle is  72
```

In [52]:
```
#solve the equation
x =( (234.678*56 + 89/6)-(745.23**2)+(87.23**45.6))
print(x)
```

```
3.1215032029794266e+88
```

In [ ]: