8:30 AM -- BASIC PYTHON PROGRAMMING TODAY

In [3]:
```
import sys
sys.version
```

Out[3]:
```
'3.12.4 | packaged by Anaconda, Inc. | (main, Jun 18 2024, 15:03:56) [MSC v.1929 64 bit (AMD64)]'
```

work with numbers

In [6]:
```
3
```

Out[6]:
```
3
```

In [8]:
```
2
```

Out[8]:
```
2
```

In [10]:
```
3 + 2
```

Out[10]:
```
5
```

In [12]:
```
3 - 2
```

Out[12]:
```
1
```

In [14]:
```
3 * 2
```

Out[14]:
```
6
```

In [16]:
```
3 ** 2
```

Out[16]:
```
9
```

In [18]:
```
10 / 5
```

Out[18]:
```
2.0
```

In [20]:
```
10 // 5
```

Out[20]:
```
2
```

In [22]:
```
# work with string
```

In [24]:
```
nareshit
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[24], line 1
----> 1 nareshit

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

In [ ]:
```
'nareshit'
```

In [27]:
```
" nareshit "
```

Out[27]:
```
' nareshit '
```

In [29]:
```
''' naresh it '''
```

Out[29]:
```
' naresh it '
```

variable = object

In [32]:
```
v = 5 #v - variable & 5 for value
v
```

Out[32]:
```
5
```

In [34]:
```
type(v)
```

Out[34]: int

In [36]:
```
v1 = 'nit'
v2
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[36], line 2
      1 v1 = 'nit'
----> 2 v2

NameError: name 'v2' is not defined
```

In [38]:
```
v1
```

Out[38]: 'nit'

26 Th

In [41]:
```
a = 5.5
type(a)
```

Out[41]: float

In [43]:
```
import sys
syst.version
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[43], line 2
      1 import sys
----> 2 syst.version

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

In [45]:
```
nit = 15
NIT
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[45], line 2
      1 nit = 15
----> 2 NIT

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

In [47]:
```
nit
```

Out[47]: 15

In [49]:
```
1a = 67
1a
```

```
  Cell In[49], line 1
    1a = 67
    ^
SyntaxError: invalid decimal literal
```

In [51]:
```
a1 = 67
a1
```

Out[51]: 67

In [53]:
```
nit$ = 89
nit$
```

```
  Cell In[53], line 1
    nit$ = 89
       ^
SyntaxError: invalid syntax
```

In [55]:
```
x_train, x_test, y_train, y_test = 80, 20, 70, 30
```

In [57]:
```
x_train
x_test
y_train
y_test
```

Out[57]: 30

In [59]:
```
print(x_train)
print(x_test)
print(y_train)
print(y_test)
```

```
80
20
70
30
```

In [61]:
```
import keyword
keyword.kwlist
```

Out[61]:
```
['False',
 'None',
 'True',
 'and',
 'as',
 'assert',
 'async',
 'await',
 'break',
 'class',
 'continue',
 'def',
 'del',
 'elif',
 'else',
 'except',
 'finally',
 'for',
 'from',
 'global',
 'if',
 'import',
 'in',
 'is',
 'lambda',
 'nonlocal',
 'not',
 'or',
 'pass',
 'raise',
 'return',
 'try',
 'while',
 'with',
 'yield']
```

In [63]:
```
if = 90
if
```

```
  Cell In[63], line 1
    if = 90
       ^
SyntaxError: invalid syntax
```

In [65]:
```
a10 = 78
a9 = 89
```

In [67]:
```
print(a10)
print(a9)
```

```
78
89
```

In [69]:
```
del a10
```

In [71]:
```
a10
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[71], line 1
----> 1 a10

NameError: name 'a10' is not defined
```

In [73]:
```
for = 90
```

```
  Cell In[73], line 1
    for = 90
        ^
SyntaxError: invalid syntax
```

In [75]:
```
For = 90
For
```

Out[75]: 90

In [77]:
```
a = True
a
```

Out[77]: True

In [79]:
```
b = 'true'
b
```

Out[79]: 'true'

In [81]:
```
pi = 3.17
pi
```

Out[81]: 3.17

In [83]:
```
pi = 3.20
pi
```

Out[83]: 3.2

In [85]:
```
aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa = 90
aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa
```

Out[85]: 90

In [87]:
```
a# = 100
```

Out[87]: True

Variable are completed

27th -- DATA TYPES

INT FLOAT BOOLEAN COMPLEX STRING

In [91]:
```
i = 25 #value without decimal
i
```

Out[91]: 25

In [93]:
```
type(i)
```

Out[93]: int

In [95]:
```
print(type(i))
```

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

In [97]:
```
petrol = 109.50 #value with decimal
petrol
```

Out[97]: 109.5

In [99]:
```
type(petrol)
```

Out[99]: float

In [101…
```
b = true
b
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[101], line 1
----> 1 b = true
      2 b

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

In [103…
```
b = True
b
```

Out[103… True

In [105…
```
b1 = False
b1
```

Out[105… False

In [107…
```
True + False
```

Out[107… 1

In [109…
```
True -  True
```

Out[109… 0

In [111…
```
True * False
```

Out[111… 0

In [113…
```
False / True
```

Out[113… 0.0

In [115…
```
False // True
```

Out[115… 0

In [117…
```
True/False
```

```
---------------------------------------------------------------------------
ZeroDivisionError                         Traceback (most recent call last)
Cell In[117], line 1
----> 1 True/False

ZeroDivisionError: division by zero
```

In [119…
```
c1 = 10 + 20j
c1
```

Out[119… (10+20j)

In [121…
```
type(c1)
```

Out[121… complex

In [123…
```
c1.real
```

Out[123… 10.0

In [125…
```
c1.imaginary
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[125], line 1
----> 1 c1.imaginary

AttributeError: 'complex' object has no attribute 'imaginary'
```

In [127…
```
c1.imag
```

Out[127… 20.0

In [129…
```
c1
```

Out[129… (10+20j)

In [131…
```
c2 = 20 + 30j
```

In [133…
```
print(c1)
print(c2)
```

```
(10+20j)
(20+30j)
```

In [135…
```
c1 + c2
```

Out[135… (30+50j)

In [137…
```
c1 - c2
```

Out[137… (-10-10j)

In [139…
```
c2 - c1
```

Out[139… (10+10j)

In [141…
```
print(c1)
print(c2)
```

```
(10+20j)
(20+30j)
```

In [143…
```
c3 = 20+ 15i
```

```
  Cell In[143], line 1
    c3 = 20+ 15i
               ^
SyntaxError: invalid decimal literal
```

In [145…
```
c1 * c2
```

Out[145… (-400+700j)

In [147…
```
s = 'nareshit'
s
```

Out[147… 'nareshit'

In [149…
```
s1 = "naresh it"
s1
```

Out[149… 'naresh it'

In [151…
```
s2 = '''naresh
      it'''
s2
```

Out[151… 'naresh\n   it'

In [153…
```
s
```

Out[153… 'nareshit'

string slicing[:]

In [156…
```
s
```

Out[156… 'nareshit'

In [158…
```
s[:]
```

Out[158… 'nareshit'

In [160…
```
s[4] # forward indexin
```

Out[160… 's'

In [162…
```
s
```

Out[162… 'nareshit'

In [164…
```
s[-4] #backward indxing
```

Out[164… 's'

In [166…
```
b
```

Out[166… True

In [168…
```
int(True)
```

Out[168… 1

In [170…
```
int(False)
```

Out[170… 0

In [172…
```
True + False
```
Out[172… 1

In [174…
```
True
```
Out[174… True

In [176…
```
s
```
Out[176… 'nareshit'

In [178…
```
s[1:7]
```
Out[178… 'areshi'

In [180…
```
s
```
Out[180… 'nareshit'

In [182…
```
s[10]
```
```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[182], line 1
----> 1 s[10]

IndexError: string index out of range
```

In [184…
```
s
```
Out[184… 'nareshit'

In [186…
```
len(s)
```
Out[186… 8

python data types are completed

type casting

In [190…
```
int(2.3) #cast from float to int
```
Out[190… 2

In [192…
```
int(2.3, 3.0)
```
```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[192], line 1
----> 1 int(2.3, 3.0)

TypeError: 'float' object cannot be interpreted as an integer
```

In [194…
```
int(True) #cast from bool to int
```
Out[194… 1

In [196…
```
int(False)
```
Out[196… 0

In [198…
```
True
```
Out[198… True

In [200…
```
True + True
```
Out[200… 2

In [202…
```
int(1+2j)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[202], line 1
----> 1 int(1+2j)

TypeError: int() argument must be a string, a bytes-like object or a real number, not 'complex'
```

In [204…
```
int('10')
```

Out[204…
```
10
```

In [206…
```
int('ten')
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
Cell In[206], line 1
----> 1 int('ten')

ValueError: invalid literal for int() with base 10: 'ten'
```

In [208…
```
float(10)
```

Out[208…
```
10.0
```

In [210…
```
float(10, 20)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[210], line 1
----> 1 float(10, 20)

TypeError: float expected at most 1 argument, got 2
```

In [212…
```
float(True)
```

Out[212…
```
1.0
```

In [214…
```
float(False)
```

Out[214…
```
0.0
```

In [216…
```
float(1+2J)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[216], line 1
----> 1 float(1+2J)

TypeError: float() argument must be a string or a real number, not 'complex'
```

In [218…
```
float('10')
```

Out[218…
```
10.0
```

In [220…
```
float('ten')
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
Cell In[220], line 1
----> 1 float('ten')

ValueError: could not convert string to float: 'ten'
```

In [222…
```
True
```

Out[222…
```
True
```

In [224…
```
True + True
```

Out[224…
```
2
```

In [226…
```
complex(10)
```

Out[226…
```
(10+0j)
```

In [228…
```
complex(10, 20)
```

Out[228…
```
(10+20j)
```

In [230…
```
complex(10,20,30,40,50)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[230], line 1
----> 1 complex(10,20,30,40,50)

TypeError: complex() takes at most 2 arguments (5 given)
```

In [232…
```
complex(2.3)
```

Out[232…
```
(2.3+0j)
```

In [234…
```
complex(2.3, 4)
```

Out[234…
```
(2.3+4j)
```

In [236…
```
complex(True, True)
```

Out[236…
```
(1+1j)
```

In [238…
```
complex(False)
```

Out[238…
```
0j
```

In [240…
```
complex('10')
```

Out[240…
```
(10+0j)
```

In [242…
```
complex('10', '20')
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[242], line 1
----> 1 complex('10', '20')

TypeError: complex() can't take second arg if first is a string
```

In [ ]:

In [ ]:

In [ ]:

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