# TASK-4 Python DataTypes

# Identifiers

In [37]:
```
import keyword
import operator
from datetime import datetime
import os
```

In [1]:
```
1var=10 # identifier can't star with digit
```

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

In [2]:
```
val@=20 # in identifiers the special char
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[2], line 1
----> 1 val@=20

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

In [3]:
```
import=20 # here there is word import that can't be used as identifier
```

```
  Cell In[3], line 1
    import=20
          ^
SyntaxError: invalid syntax
```

In [5]:
```
val1=10  """ in this only small char are used as well as numeric too.
val1
```

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

# Comments in python

In [8]:
```
# Signle line comment
val1=10
val1
```

Out[8]:
```
10
```

In [10]:
```
#muliple
#line
#comment
val2=20
val2
```

```
Out[10]: 20
```

In [11]:

```
'''
multiple
line
comment
'''
val1=10
val1
```

```
Out[11]: 10
```

# Statements

In [12]:

```
p=10
q=20
r=q
p,type(p),hex(id(q))
```

```
Out[12]: (10, int, '0x7ffd75682c18')
```

In [13]:

```
q,type(q),hex(id(q))
```

```
Out[13]: (20, int, '0x7ffd75682c18')
```

In [16]:

```
int(0x7ffd75682c18)
```

```
Out[16]: 140726573214744
```

In [17]:

```
r,type(r),hex(id(r))
```

```
Out[17]: (20, int, '0x7ffd75682c18')
```

In [18]:

```
p=20
p=p+10
p
```

```
Out[18]: 30
```

# Variable Assignment

In [19]:

```
int_var=10
float_var=10.0
str_var="cool"

print(int_var)
print(float_var)
print(str_var)
```

```
10
10.0
cool
```

In [20]:

```
int,float,string=10,2.25,"cool"
print(int)
print(float)
print(string)
```

```
10
2.25
cool
```

In [23]:

```
p1=p2=p3=40
print(p1,p2,p3)
```

```
40 40 40
```

# Data Types

### NUMERIC

In [25]:

```
val1=10     # here we are given the int value to the variable
print(val1)
print(type(val1))
```

```
10
<class 'int'>
```

In [27]:

```
v2=120.45       #this is float and it is in decimal points
print(v2)
print(type(v2))
```

```
120.45
<class 'float'>
```

In [28]:

```
v3="welcome to nit"
print(v3)
print(type(v3))
```

```
welcome to nit
<class 'str'>
```

In [29]:

```
v4=True
print(v4)
print(type(v4))
```

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

In [30]:

```
v5=False
print(v5)
print(type(v5))
```

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

In [35]:

```
import sys
sys.getsizeof(int)
```

Out[35]:

```
28
```

In [48]:

```
sys.getsizeof(float)
```

```
Out[48]: 24
```

```
In [49]: sys.getsizeof(str)
```

```
Out[49]: 432
```

```
In [45]: sys.getsizeof(complex())
```

```
Out[45]: 32
```

# Boolean

```
In [51]: bool1=True
         bool1
```

```
Out[51]: True
```

```
In [52]: print(type(bool1))
```

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

```
In [53]: bool2=False
         bool2
```

```
Out[53]: False
```

```
In [54]: print(type(bool2))
```

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

```
In [59]: print(int(False))
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[59], line 1
----> 1 print(int(False))

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

```
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 [1]: print(int(True))

        1
```

```
In [2]: print(int(False))

        0
```

```
In [3]: bool(1)

Out[3]: True
```

```
In [4]: bool(0)

Out[4]: False
```

```
In [5]: bool(None)

Out[5]: False
```

```
In [6]: bool(False)

Out[6]: False
```

```
In [7]: False+False
```

```
Out[7]: 0
```

```
In [8]: True+True
```

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

```
In [9]: True+False+True-False
```

```
Out[9]: 2
```

```
In [10]: -True+False-True
```

```
Out[10]: -2
```

# Strings :- Creation of Strings

```
In [11]: str="hello python"
         str
```

```
Out[11]: 'hello python'
```

```
In [12]: print(type(str))
```

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

```
In [14]: my_str="welcome to nit"
```

```
In [15]: print(type(my_str))
```

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

```
In [17]: print(my_str)
```

```
welcome to nit
```

```
In [18]: mystr='welcome to nit'  #sinle quotes string statement
         mystr
```

```
Out[18]: 'welcome to nit'
```

```
In [19]: mystr="welcome to nit"   # here this is Double quotes string statement
         mystr
```

```
Out[19]: 'welcome to nit'
```

```
In [22]: mystr=''' welcome
             to
                 nit'''
```

```
In [23]: mystr
```

```
Out[23]: ' welcome \n    to \n        nit'
```

```
In [25]: mystr=('happy_'
                'monday_'
                'Everyone')
         print(mystr)

         happy_monday_Everyone
```

```
In [29]: mystr1='yohh...man!! '
         mystr1=mystr1*6
         mystr1

Out[29]: 'yohh...man!! yohh...man!! yohh...man!! yohh...man!! yohh...man!! yohh...man!!
         '
```

```
In [30]: len(mystr1)     #length of string

Out[30]: 78
```

```
In [ ]: # String Indexing
```

In this String Indexing are two types 1.Forward Indexing (it starts with (0,1,2,3,4)) 2.Backward Indexing (it staring from (-1,-2,-3))

```
In [31]: str_1='hi..python!'
         str_1

Out[31]: 'hi..python!'
```

```
In [32]: len(str_1)

Out[32]: 11
```

```
In [33]: str_1[len(str_1)-1]

Out[33]: '!'
```

```
In [34]: str[-1]

Out[34]: 'n'
```

```
In [35]: str_1[-1]

Out[35]: '!'
```

```
In [38]: str_1[2]

Out[38]: '.'
```

```
In [39]: str_1[6]

Out[39]: 't'
```

```
In [40]: str_1[10]

Out[40]: '!'
```

# Slicing Index in String

```
In [42]: str_1[0:6]

Out[42]: 'hi..py'

In [43]: str_1[6:]

Out[43]: 'thon!'

In [44]: str_1[-4:]

Out[44]: 'hon!'

In [45]: str_1[:]

Out[45]: 'hi..python!'

In [46]: str_1[2:7]

Out[46]: '..pyt'

In [47]: # Update And Delete String

In [48]: str1= 'hello python'

In [49]: str1

Out[49]: 'hello python'

In [51]: str1[0:5]='AHPI' # string are immutable elements cannot be changed onece they ha
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[51], line 1
----> 1 str1[0:5]='AHPI'

TypeError: 'str' object does not support item assignment
```

```
In [56]: del str1
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[56], line 1
----> 1 del str1

NameError: name 'str1' is not defined
```

```
In [53]: print(str1)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[53], line 1
----> 1 print(str1)

NameError: name 'str1' is not defined
```

```
In [57]: # String Concatenation
```

In [59]:

```
s1='Hey There i am'
s2=' Naruto Uzumaki...!'
s3=s1+s2
print(s3)
```

```
Hey There i am Naruto Uzumaki...!
```

In [60]:

```
n='1'
n1='2'
n2='3'
N=n+n1+n2
print(N)
```

```
123
```

In [ ]: