python_variables_19th_august_23

September 2, 2023

```python
[1]: 1+2
```

```
[1]: 3
```

```python
[3]: 345+345
```

```
[3]: 690
```

python basics

python variable integer float boolean string complex

```python
[4]: a=10#integer type
```

```python
[5]: a
```

```
[5]: 10
```

```python
[6]: sham=324#integer
```

```python
[7]: sham
```

```
[7]: 324
```

```python
[8]: type(sham)
```

```
[8]: int
```

```python
[9]: s="pwskills"    #string type
```

```python
[10]: type(s)
```

```
[10]: str
```

```python
[11]: s
```

```
[11]: 'pwskills'
```

```python
[12]: s1='this is my first python lecture'
```

```python
[13]: type(s1)
```

```
[13]: str
```

```python
[14]: s1
```

```
[14]: 'this is my first python lecture'
```

```python
[15]: f=4560.332    #FLOAT TYPE
```

```python
[16]: f
```

```
[16]: 4560.332
```

```python
[17]: type(f)
```

```
[17]: float
```

```python
[18]: c=5+6j #complex type
```

```python
[19]: type(c)
```

```
[19]: complex
```

```python
[20]: c.real
```

```
[20]: 5.0
```

```python
[21]: c.imag
```

```
[21]: 6.0
```

```python
[22]: b=True
```

```python
[23]: type(b)
```

```
[23]: bool
```

```python
[24]: b1=False
```

```python
[25]: type(b1)
```

```
[25]: bool
```

```python
[26]: b1
```

[26]: False

operations in variables

[27]:
```
#addition by assigning different line
a1=45
a2=34
```

[28]: `a1+a2`

[28]: 79

[29]: `a1-a2#subtr`

[29]: 11

[30]: `a1/a2`

[30]: 1.3235294117647058

[ ]:

[31]: `a1*a2`

[31]: 1530

[32]: `45/34`

[32]: 1.3235294117647058

[33]:
```
#variable assigning same line
a1,a2=34,35
```

[34]: `a1`

[34]: 34

[35]: `a2`

[35]: 35

[36]: `a,b,c,d=32,"sha",32.2,True`

[37]: `a`

[37]: 32

[38]: `b`

[38]: 'sha'

[39]: ```
c
```

[39]: 32.2

[40]: ```
d
```

[40]: True

[41]: ```
special character not allowed before variable
%a
```

```
Cell In[41], line 1
    special character not allowed before variable
          ^
SyntaxError: invalid syntax
```

[42]: ```
0b
```

```
Cell In[42], line 1
    0b
     ^
SyntaxError: invalid binary literal
```

[44]: ```
b0=345
```

[45]: ```
@a
```

```
Cell In[45], line 1
    @a
      ^
SyntaxError: incomplete input
```

[48]: ```
_a=34#it works
```

[49]: ```
-b=2
```

```
Cell In[49], line 1
    -b=2
      ^
```

4

```
SyntaxError: cannot assign to expression here. Maybe you meant '==' instead of
 '='?
```

[50]: ```python
True =45#not works
```

```
  Cell In[50], line 1
    True =45#not works
    ^
SyntaxError: cannot assign to True
```

[51]: ```python
int=345
```

[52]: ```python
int
```

[52]: 345

[56]: ```python
b1=True #in boolean execution true means 1 false means 0
```

[54]: ```python
b2=False
```

[55]: ```python
b1+b2
```

[55]: 1

[57]: ```python
b1/b2
```

```
---------------------------------------------------------------------------
ZeroDivisionError                         Traceback (most recent call last)
Cell In[57], line 1
----> 1 b1/b2

ZeroDivisionError: division by zero
```

[58]: ```python
b1-b2
```

[58]: 1

[59]: ```python
b1*b2
```

[59]: 0

[60]: ```python
s1='my name is sha'
```

```
[61]: s1
```

[61]: 'my name is sha'

```
[62]: type(s1)
```

[62]: str

```
[63]: s2='this is master's'
```

```
  Cell In[63], line 1
    s2='this is master's'
                        ^
SyntaxError: unterminated string literal (detected at line 1)
```

```
[64]: # use single use inside and double qoute outside vise versa
      s2="this is master's"
```

```
[65]: s2
```

[65]: "this is master's"

single line comment and multiple line comments

```
[66]: #this is my first python class

      #i am trying to leran variable declaration
      #so far i have learnt int boolean string complex number declaration'''
```

[66]: 'i am trying to leran variable declaration\nso far i have learnt int boolean
      string complex number declaration'

```
[68]: '''this is my first python class
      i am trying to leran variable declaration
      so far i have learnt int boolean string complex number declaration'''
```

[68]: 'this is my first python class\ni am trying to leran variable declaration\nso
      far i have learnt int boolean string complex number declaration'

```
[69]: """this is my first python class
      i am trying to leran variable declaration
      so far i have learnt int boolean string complex number declaration"""
```

[69]: 'this is my first python class\ni am trying to leran variable declaration\nso
      far i have learnt int boolean string complex number declaration'

```python
[70]: s1="sha"
```

```python
[71]: a=10
```

```python
[73]: s1+a #diffrnt type can't to concatinate
```

```
  Cell In[73], line 1
    s1+a diffrnt type can't to concatinate
                  ^
SyntaxError: unterminated string literal (detected at line 1)
```

```python
[77]: str(a)#int change to string
```

```
[77]: '10'
```

```python
[75]: s1+a
```

```
[75]: 'sha10'
```

```python
[78]: s1+' '+a
```

```
[78]: 'sha 10'
```

```python
[79]: a=10
```

```python
[80]: a
```

```
[80]: 10
```

```python
[81]: b=str(a)
```

```python
[82]: b
```

```
[82]: '10'
```

```python
[1]: int(b)
```

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

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

```python
[1]: s="sha"
```

```python
[3]: int(s)
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
Cell In[3], line 1
----> 1 int(s)

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

```python
[1]: a=21556
```

input always string

```python
[2]: b=input()
```

```
 234
```

```python
[3]: b
```

```
[3]: '234'
```

```python
[4]: type(b)
```

```
[4]: str
```

```python
[5]: b=input()
```

```
 True
```

```python
[6]: type(b)
```

```
[6]: str
```

```python
[7]: b=bool(input())
     # if use type infront of input then
```

```
 True
```

```python
[7]: b=bool(input())# if use type infront of input then
```

```
 True
```

```python
[8]: b
```

```
[8]: True
```

```
[9]: type(b)
```

```
[9]: bool
```

```
[10]: d=int(input())
```

```
6654513
```

```
[11]: type(d)
```

```
[11]: int
```

```
[12]: d=float(input())
```

```
6454.332
```

```
[13]: type(d)
```

```
[13]: float
```

index

```
[14]: s="sha"
```

```
[15]: s[1]
```

```
[15]: 'h'
```

```
[16]: s[3]
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[16], line 1
----> 1 s[3]

IndexError: string index out of range
```

```
[19]: s[-1]
```

```
[19]: 'a'
```

```
[21]: s[-45] #index not presentinside this input
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[21], line 1
----> 1 s[-45] #index not presentinside this input
```

```
IndexError: string index out of range
```

[22]: `s1="pwskills"`

[26]:
```
#only use square brackets
s1[0:2] #slicing operation
```

[26]: `'pw'`

[27]: `s1[2:7]`

[27]: `'skill'`

[28]: `s1[2:8]`

[28]: `'skills'`

[29]: `s1[2:600]`

[29]: `'skills'`

[30]: `s1[0:7]`

[30]: `'pwskill'`

[31]: `s1[2:]`

[31]: `'skills'`

[33]: `s1[0:7:2]# jump two places from 0 to 7`

[33]: `'psil'`

[34]: `s1[7:3]#jumping always positive direction`

[34]: `''`

[35]: `s1[7:3:-1]`

[35]: `'slli'`

[38]: `s1[-1:-5:-1]`

[38]: `'slli'`

[42]: `s1[7:-9:-1]`

[42]: 'sllikswp'

[44]: `s1[::-1]`

[44]: 'sllikswp'

[45]: `s1[0]`

[45]: 'p'

[46]: `a=10`

[47]: `a=20`

[48]: `s1`

[48]: 'pwskills'

[49]: `s1[0]`

[49]: 'p'

[51]: `s1[0]='s'`*#in string reassignment is not possible(ie immutable)*

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[51], line 1
----> 1 s1[0]='s'#in string reassignment is not possible

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

[52]: `s1='swskills'`

[53]: `s1[0]='p'`*#immutable*

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[53], line 1
----> 1 s1[0]='p'

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

[ ]: