Data Types

In [ ]:
```
x = 34 ; y = 67.89 ; z = True
print('x = ', x, '\ty = ', y, '\tz = ', z)
```

In [ ]:
```
print('Type of \nx = ', type(x), '\ty = ', type(y), '\tz = ', type(z))
```

In [ ]:
```
var = 'abc'
print('var = ', var)
print('type of var ', type(var))
```

Data Type Conversion

In [ ]:
```
x = 45.77
int(x)
```

In [ ]:
```
str(x)
```

In [ ]:
```
bool(x)
```

In [ ]:
```
y = '45.88'
```

In [ ]:
```
float(y)
```

In [ ]:
```
int(y)
```

Checking Refrences

In [ ]:
```
x = 34
y = x
print('x = ', x, ';  id of x = ', id(x))
print('y = ', y, ';  id of y = ', id(y))
```

In [ ]:
```
x = 65
print('x = ', x, ';  id of x = ', id(x))
print('y = ', y, ';  id of y = ', id(y))
```

In [ ]:
```
y = 78
print('x = ', x, ';  id of x = ', id(x))
print('y = ', y, ';  id of y = ', id(y))
```

Arithmetic Operators

In [ ]:
```
x = 50
y = 4
```

In [ ]:
```
print('Sum of x & y                    : ', x + y)
print('Difference between x & y        : ', x - y)
print('Product of x & y                : ', x * y)
print('Division of x by y              : ', x / y)
```

In [ ]:
```
print('Remainder of x divided by y     : ', x % y)
print('Floor Division x divided by y   : ', x // y)
print('Exponential value for x raised to power y : ', x ** y)
```

Arithmetic Assignment Operators

In [ ]:
```
a = 10
print('Present value of a = ', a )
```

In [ ]:
```
a += 5
print('Updated value of a = ', a )
```

In [ ]:
```
a = 10
print('Present value of a = ', a )
print('Present id of a = ', id(a))
```

In [ ]:
```
a += 15
print('Updated value of a = ', a )
print('Updated id of a = ', id(a))
```

Comparison Operator

In [ ]:
```
a = 20
b = 20
print('a = ', a, '  b = ', b)
print('a == b  : ', a == b)
```

In [ ]:
```
a = 20
b = 30
print('a = ', a, '  b = ', b)
print('a != b  : ', a != b)
```

In [ ]:
```
a = 40
b = 30
print('a = ', a, '  b = ', b)
print('a <= b  : ', a <= b)
```

In [ ]:
```
a = 30
b = 30
print('a = ', a, '  b = ', b)
print('a >= b  : ', a >= b)
```

Logical Operators

In [ ]:
```
a = 30
b = 30
print('a = ', a, '  b = ', b)
print('a < b           : ', a < b)
print('a == b          : ', a == b)
```

In [ ]:
```
print('a < b and a == b : ', a < b and a == b)
```

In [ ]:
```
a = 30
b = 30
print('a = ', a, '  b = ', b)
print('a < b           : ', a < b)
print('a == b          : ', a == b)
```

In [ ]:
```
print('a < b or a == b : ', a < b or a == b)
```

In [ ]:
```
a = 40
print('a = ', a)
print('a < 50      : ' , a < 50 )
```

In [ ]:
```
print('not a < 50  : ' , not(a < 50))
```

Miscellaneous Operators

Identity Operators

In [ ]:
```
a = ['a', 'b', 'c']
b = ['a', 'b', 'c']
print('a is b' , a is b)
```

In [ ]:
```
a = ['a', 'b', 'c']
b =  a
print('a is b' , a is b)
```

In [ ]:
```
id(a) == id(b)
```

In [ ]:
```
a = ['a', 'b', 'c']
b = ['a', 'b', 'c']
print('a is not b' , a is not b)
```

Membership Operators

In [ ]:
```
x = 'a'
y = 'Dictionary'
print(x , ' in "', y, '"')
print( x in y)
```

In [ ]:
```
x = 'a'
y = 'Dictionary'
print(x , ' in "', y, '"')
print( x not in y)
```

In [ ]:
```
a = [20, 45, 10]
10 in a
```

In [ ]:
```
a = [20, 45, 10]
10 not in a
```

Strings in Python

In [ ]:
```
message_1 = 'Hi! Welcome to Python Programming!!'
message_2 = "Hi! Welcome to Python Programming!!"
print(message_1)
print(message_2)
```

In [ ]:
```
message_1 = 'Hi! Welcome to "Python Programming"!!'
message_2 = "Hi! Welcome to 'Python Programming'!!"
print(message_1)
print(message_2)
```

String methods

In [1]:
```
string = 'She seLLs sEa SHELLS oN tHe SeA sHoRe.'
```

In [2]:
```
upper_case = string.upper()
print(upper_case)
```

```
SHE SELLS SEA SHELLS ON THE SEA SHORE.
```

In [3]:
```
lower_case = string.lower()
print(lower_case)
```

```
she sells sea shells on the sea shore.
```

In [4]:
```
sentence = string.capitalize()
print(sentence)
```

```
She sells sea shells on the sea shore.
```

In [5]:
```
word_upper = string.title()
word_upper
```

Out[5]:
```
'She Sells Sea Shells On The Sea Shore.'
```

In [ ]:
```

```