

Arithmetic Expressions

We revisit arithmetic expressions in this notebook An arithmetic expression is a combination of numeric variables, numeric constants and arithmetic operators that produces a single numeric value.

1. If all the operands in an arithmetic expression are of type int and if the expression results in a whole number, then the result is also of type int.
2. If all the operands in an arithmetic expression are of type int but the expression results in a float number, then the result will be of type float.
3. If even one of the operands is of type float, the result is always of type float.

In [2]:

```
x = 45
y = 50
z = x + y
print(z)
# what is the type of z?
```

95

In [3]:

```
price = 20.0
qty = 18
total_amt = price * qty
print(total_amt)
# what is the type of total_amt?
```

360.0

In [4]:

```
x = 45
y = 5
z = x//y
print(z)
print(type(z))
# what is the type of z?
```

9
<class 'int'>

In [5]:

```
x = 45
y = 4
print(z)
z = x//y
print(type(z))
# what is the type of z?
```

9
<class 'int'>

In [6]:

```
x = 45.0
y = 5
z = x//y
print(z)
print(type(z))
# what is the type of z?
```

```
9.0
<class 'float'>
```

In [7]:

```
x = 45
y = 5
z = x/y
print(z)
print(type(z))
# what is the type of z?
```

```
9.0
<class 'float'>
```

In [8]:

```
x = 45
y = 4
z = x%y
print(z)
print(type(z))
# what is the type of z?
```

```
1
<class 'int'>
```

In [9]:

```
x = 45.5
y = 4
z = x%y
print(z)
print(type(z))
# what is the type of z?
```

```
1.5
<class 'float'>
```

In [10]:

```
'''
Evaluate the following expressions. What is the data type of the result in each case?
'''
i1 = 2
i2 = 5
i3 = -3
d1 = 2.0
d2 = 5.0
d3 = -0.5
r1 = 3 * (d1 + d2) * (d1 - d3)
r2 = (d1 + d2 + d3) / 3
r3 = d1 + d2 + (d3 / 3)
r4 = i1 // i2 + i3
r5 = i1 / i2 + i3
print(r1)
print(r2)
print(r3)
print(r4)
print(r5)
```

```
52.5
2.1666666666666665
6.833333333333333
-3
-2.6
```