Metode Numerik: Kuliah ke 3

1. Variables and Objects

x = 2

x = 2.0

x = "This is a string"

Python thinks of x as an object.

```
In [13]:  x=2
          y=x+0.5
          print(y)

          2.5
```

```
In [14]:  x=2.0
          z=x*6
          print(z)

          12.0
```

2. Integer division

x= 8/4 results in float.

y=8/3 results in float

```
In [16]:  a=8/4
          print(a)

          2.0
```

```
In [17]:  b=8/3
          print(b)

          2.6666666666666665
```

3. Arrays

h = zeros(4) instructs Python to reserve (allocate) space in memory for an array h with four elemets and inital values set to 0.

The zeros is a function in numpy library so to call it use:

import numpy as np

h = np.zeros(4)

```
In [19]:  import numpy as np
          h=np.zeros(4)
          print(h)

          [0. 0. 0. 0.]
```

```
In [21]:  h[3]=1
          print(h)

          [0. 0. 0. 1.]
```

```
In [22]: h[0]=7
         h[1]=5
         h[2]=3
         print(h)
```

```
[7. 5. 3. 1.]
```

```
In [23]: z=h[0]*h[2]
         print(z)
```

```
21.0
```

Contoh: Jarak rumah mahasiswa ke kampus

a. Mengumpulkan data jarak rumah mahasiswa ke kampus

b. Menghitung rata-rata jarak rumah mahasiswa ke kampus

```
In [30]: d = np.zeros(10)
         d[0]=2
         d[1]=1
         d[2]=10
         d[3]=9
         d[4]=8
         d[5]=12
         d[6]=9
         d[7]=9
         d[8]=15
         d[9]=8
         print('Data jarak rumah mahasiswa ke kampus :\n', d)

         dr = (d[0]+d[1]+d[2]+d[3]+d[4]+d[5]+d[6]+d[7]+d[8]+d[9])/10
         print('Rata-rata jarak rumah mahasiswa ke kampus:\n',dr)
```

```
Data jarak rumah mahasiswa ke kampus :
 [ 2.  1. 10.  9.  8. 12.  9.  9. 15.  8.]
Rata-rata jarak rumah mahasiswa ke kampus:
 8.3
```

4. Build a Function

```
In [34]: def pytha(a,b):
             c=(a**2+b**2)**(0.5)
             return c
```

```
In [35]: pytha(3,4)
```

```
Out[35]: 5.0
```