intro_python_unigis / intro_python.ipynb

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3945 lines (3945 loc) · 185 KB

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Intro to python

In [2]:
```
print("Hello UNIGIS")
```

```
Hello UNIGIS
```

In [3]:
```
2+2
```

Out[3]: 4

In [4]:
```
hello + unigis #will not work!
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[4], line 1
----> 1 hello + unigis

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

In [5]:
```
"hello"+"unigis"
```

Out[5]: 'hellounigis'

VARIABLE

In [7]:
```
string1 = "hello"
string2 = "unigis"
```

In [8]:
```
string1 + " " + string2
```

Out[8]: 'hello unigis'

In [9]:
```
type(string1)
```

Out[9]: str

In [17]:
```
number1 = 2
number2 = 2
```

In [12]:
```
type(number1)
```

Out[12]: int

In [13]:
```
number1 +  number2
```

Out[13]: 3

In [14]:
```
str(number1)+ str(number2)
```

Out[14]: '12'

In [15]:
```
number1 * number2 #multiplcation
```

Out[15]: 2

In [18]:
```
number1 ** number2 #power
```

Out[18]: 4

Logical operations <, >, ==, !=, <=, >=

In [19]:
```
3 > 4
```

Out[19]: False

LISTS AND TUPLETS

In [20]:
```
numbers = [1,2,3,4,5,6,7]
numbers[1]
```

Out[20]: 2

In [21]:
```
len(numbers)
```

Out[21]: 7

In [25]:
```
for number in numbers:
    print(str(number)+"randomstring")
```

```
1randomstring
2randomstring
3randomstring
4randomstring
5randomstring
6randomstring
7randomstring
```

In [26]:
```
numbers.append(8)
print(numbers)
```

```
[1, 2, 3, 4, 5, 6, 7, 8]
```

TUPLES CANNOT BE CHANGED

In [27]:
```
a_tuple = (1,2,3,4)
```

In [28]:

```
len(a_tuple)
```

Out[28]: 4

In [29]:
```
another_tuple = ("amsterdam", "antwerp", "Lecco")
```

In [30]:
```
another_tuple
```

Out[30]: ('amsterdam', 'antwerp', 'Lecco')

DICTIONARIES

In [31]:
```
country_city = {"netherlands":"amsterdam", "belgium":"antwerp", "italia":"l
```

In [32]:
```
country_city['netherlands']
```

Out[32]: 'amsterdam'

In [33]:
```
country_city['spain'] = "madrid"
```

In [34]:
```
country_city
```

Out[34]:
```
{'netherlands': 'amsterdam',
 'belgium': 'antwerp',
 'italia': 'Lecco',
 'spain': 'madrid'}
```

FUNCTIONS

In [38]:
```
def add_function(a,b):
    result = a+b
    return result
```

In [39]:
```
add_function(2,4)
```

Out[39]: 6

DATAFRAMES PANDAS

Import a library

In [40]:
```
import pandas as pd
```

use tab to see options

In [41]:
```
pd.read_csv("trees_amsterdam_sept_2023.csv")
```

Out[41]:

	fid	id	soortnaam	soortnaamK	SoortnaamN	boomhoogte