Some in-class exercises

What is the present value of 100 EUR paid in 4 years if the discount rate is 5%? Round the output to 4 decimals.

In [1]:
```
fv=100
rate=.05
n=4
pv=round(fv/(1+rate)**n,4)
pv
```

Out[1]:
```
82.2702
```

In [2]:
```
round(100/(1.05)**4,4)
```

Out[2]:
```
82.2702
```

Create a list named `fruits` containing the following fruits:

- apple
- banana
- cherry
- kiwi
- mango

In [3]:

```
fruits = ['apple', 'banana', 'cherry', 'kiwi', 'mango']
```

Now create a new list that contains only those fruits with letter "a" in them. Use Python code to make the selection.

In [4]:

```
"a" in fruits[0]
```

Out[4]:

```
True
```

In [5]:

```
fruits[2].find("a")
```

Out[5]:

```
-1
```

In [6]:

```
newlist = [] # creates empty list

for x in fruits:
    if "a" in x:
        newlist.append(x)

print(newlist)
```

```
['apple', 'banana', 'mango']
```

In [7]:

```
nl = [i for i in fruits if i.find("a")>-1]
nl
```

Out[7]:

```
['apple', 'banana', 'mango']
```

Use the function `range` to create a range (named `numbers`) of numbers from 0 to 5.

In [15]:

```
numbers = range(6)
[print(i) for i in numbers];
```

```
0
1
2
3
4
5
```

Using the function `zip`, print the fruits and numbers. The output should look similar to this:

`('apple', 0)`
`('banana', 1)`
`('kiwi', 2)`
`('cherry', 3)`

In [17]:

```
[print(i) for i in zip(fruits, numbers)];
```

```
('apple', 0)
('banana', 1)
('cherry', 2)
('kiwi', 3)
('mango', 4)
```

Create a `DataFrame` with the data in `dax_spx.csv`. What can you say about the data?

In [33]:

```
import pandas as pd
```

In [35]:

```
df=pd.read_csv("./data/dax_spx.csv");
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 266 entries, 0 to 265
Data columns (total 3 columns):
 #   Column     Non-Null Count  Dtype  
---  ------     --------------  -----  
 0   Date       266 non-null    object 
 1   SPX Index  266 non-null    float64
 2   DAX Index  266 non-null    float64
dtypes: float64(2), object(1)
memory usage: 6.4+ KB
```

In [36]:

```
df.head()
```

Out[36]:

	Date	SPX Index	DAX Index
0	02/04/2018	2581.88	12096.73
1	03/04/2018	2614.45	12002.45

	Date	SPX Index	DAX Index
2	04/04/2018	2644.69	11957.90
3	05/04/2018	2662.84	12305.19
4	06/04/2018	2604.47	12241.27

In [37]:

```
df.tail()
```

Out[37]:

	Date	SPX Index	DAX Index
261	02/04/2019	2867.24	11754.79
262	03/04/2019	2873.40	11954.40
263	04/04/2019	2879.39	11988.01
264	05/04/2019	2892.74	12009.75
265	08/04/2019	2884.94	11958.79