AiBD, gr. 1, Maksym Rzepka

Zadanie 1

- Otworzyłem terminal i sprawdziłem, czy jest zainstalowana conda oraz sprawdziłem aktualną wersję

```
(base) student@PCL187:~$ conda -V
conda 4.10.1
(base) student@PCL187:~$ conda update conda
Collecting package metadata (current_repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: /home/user/anaconda3

  added / updated specs:
    - conda


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    conda-22.9.0               |   py38h06a4308_0         884 KB
    conda-content-trust-0.1.3  |   py38h06a4308_0          70 KB
    conda-token-0.4.0          |     pyhd3eb1b0_0          13 KB
    ------------------------------------------------------------
                                           Total:         967 KB

The following packages will be UPDATED:

  conda                              4.10.1-py38h06a4308_1 --> 22.9.0-py38h06a4308_0
  conda-content-tru~ pkgs/main/noarch::conda-content-trust~ --> pkgs/main/linux-64::conda-content-tru
st-0.1.3-py38h06a4308_0
  conda-token                          0.3.0-pyhd3eb1b0_0 --> 0.4.0-pyhd3eb1b0_0

The following packages will be DOWNGRADED:

  xmltodict                                  0.12.0-py_0 --> 0.12.0-pyhd3eb1b0_0


Proceed ([y]/n)? y


Downloading and Extracting Packages
conda-22.9.0         | 884 KB     | ############################################################ | 100%
conda-token-0.4.0    | 13 KB      | ############################################################ | 100%
conda-content-trust- | 70 KB      | ############################################################ | 100%
Preparing transaction: done
Verifying transaction: failed

EnvironmentNotWritableError: The current user does not have write permissions to the target environme
nt.
  environment location: /home/user/anaconda3
  uid: 1001
  gid: 1001
```

- stworzyłem własne środowisko pod nazwą „maksymrzepka” oraz sprawdziłem dostępne wersje pythona

- aktywowałem moje wirtualne środowisko i sprawdziłem czy faktycznie istnieje

```
bash: /home/user/anaconda3/bin/conda: linia 6: błąd składni przy nieoczekiwanym znaczniku `sys.argv'
bash: /home/user/anaconda3/bin/conda: linia 6: `if len(sys.argv) > 1 and sys.argv[1].startswith('shel
l.') and sys.path and sys.path[0] == '':'
(base) student@PCL187:~$ conda create --name maksymrzepka
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 22.9.0

Please update conda by running

    $ conda update -n base -c defaults conda



## Package Plan ##

  environment location: /home/student/.conda/envs/maksymrzepka



Proceed ([y]/n)? y

Preparing transaction: done
Verifying transaction: done
Executing transaction: done
#
# To activate this environment, use
#
#     $ conda activate maksymrzepka
#
# To deactivate an active environment, use
#
#     $ conda deactivate

(base) student@PCL187:~$ source activate maksymrzepka
(maksymrzepka) student@PCL187:~$ conda info -e
# conda environments:
#
BartoszSroka             /home/student/.conda/envs/BartoszSroka
IgorRatajczyk            /home/student/.conda/envs/IgorRatajczyk
arkadiuszslagor          /home/student/.conda/envs/arkadiuszslagor
igiczan                  /home/student/.conda/envs/igiczan
kacpermotyka             /home/student/.conda/envs/kacpermotyka
karolinakulpa            /home/student/.conda/envs/karolinakulpa
maksymrzepka          *  /home/student/.conda/envs/maksymrzepka
mateuszkowalski          /home/student/.conda/envs/mateuszkowalski
michalantos              /home/student/.conda/envs/michalantos
test                     /home/student/.conda/envs/test
base                     /home/user/anaconda3
```

```
(base) student@PCL187:~$ conda search "^python$"
Loading channels: done
```

- zacząłem instalować po kolei pythonowskie paczki, niestety, zrobiłem to ręcznie, dlatego dużo poświęciłem na to czasu w trakcie zajęć, ale moi koledzy podpowiedzieli mi że istnieje specjalna komenda, która powoduje instalacje wszystkiego na raz. Poniżej wklejam kawałki komend z terminala

```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka ipython
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 22.9.0

Please update conda by running

    $ conda update -n base -c defaults conda



## Package Plan ##

  environment location: /home/student/.conda/envs/maksymrzepka

  added / updated specs:
    - ipython


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    _openmp_mutex-5.1          |            1_gnu          21 KB
    asttokens-2.0.5            |     pyhd3eb1b0_0          20 KB
    ca-certificates-2022.07.19 |       h06a4308_0         124 KB
    certifi-2022.9.14          |  py310h06a4308_0         155 KB
    decorator-5.1.1            |     pyhd3eb1b0_0          12 KB
    executing-0.8.3            |     pyhd3eb1b0_0          18 KB
```

```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka jupyter
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 22.9.0

Please update conda by running
```

```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka matplotlib
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 22.9.0

Please update conda by running

    $ conda update -n base -c defaults conda
```

```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka  notebook
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 22.9.0
```

```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka numpy
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 22.9.0

Please update conda by running

    $ conda update -n base -c defaults conda



# All requested packages already installed.

(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka pandas
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 22.9.0

Please update conda by running

    $ conda update -n base -c defaults conda
```

```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka seaborn
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 22.9.0

Please update conda by running

    $ conda update -n base -c defaults conda
```

```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka q
Collecting package metadata (current_repodata.json): done
Solving environment: failed with initial frozen solve. Retrying with flexible solve.
Collecting package metadata (repodata.json): done
Solving environment: failed with initial frozen solve. Retrying with flexible solve.

PackagesNotFoundError: The following packages are not available from current channels:

  - q

Current channels:

  - https://repo.anaconda.com/pkgs/main/linux-64
  - https://repo.anaconda.com/pkgs/main/noarch
  - https://repo.anaconda.com/pkgs/r/linux-64
  - https://repo.anaconda.com/pkgs/r/noarch
```

```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka python-dotenv
Collecting package metadata (current_repodata.json): done
Solving environment: failed with initial frozen solve. Retrying with flexible solve.
Collecting package metadata (repodata.json): done
Solving environment: failed with initial frozen solve. Retrying with flexible solve.

PackagesNotFoundError: The following packages are not available from current channels:

  - python-dotenv

Current channels:

  - https://repo.anaconda.com/pkgs/main/linux-64
  - https://repo.anaconda.com/pkgs/main/noarch
  - https://repo.anaconda.com/pkgs/r/linux-64
  - https://repo.anaconda.com/pkgs/r/noarch
```

```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka watermark
Collecting package metadata (current_repodata.json): done
Solving environment: failed with initial frozen solve. Retrying with flexible solve.
Collecting package metadata (repodata.json): done
Solving environment: failed with initial frozen solve. Retrying with flexible solve.

PackagesNotFoundError: The following packages are not available from current channels:

  - watermark

Current channels:

  - https://repo.anaconda.com/pkgs/main/linux-64
  - https://repo.anaconda.com/pkgs/main/noarch
  - https://repo.anaconda.com/pkgs/r/linux-64
```

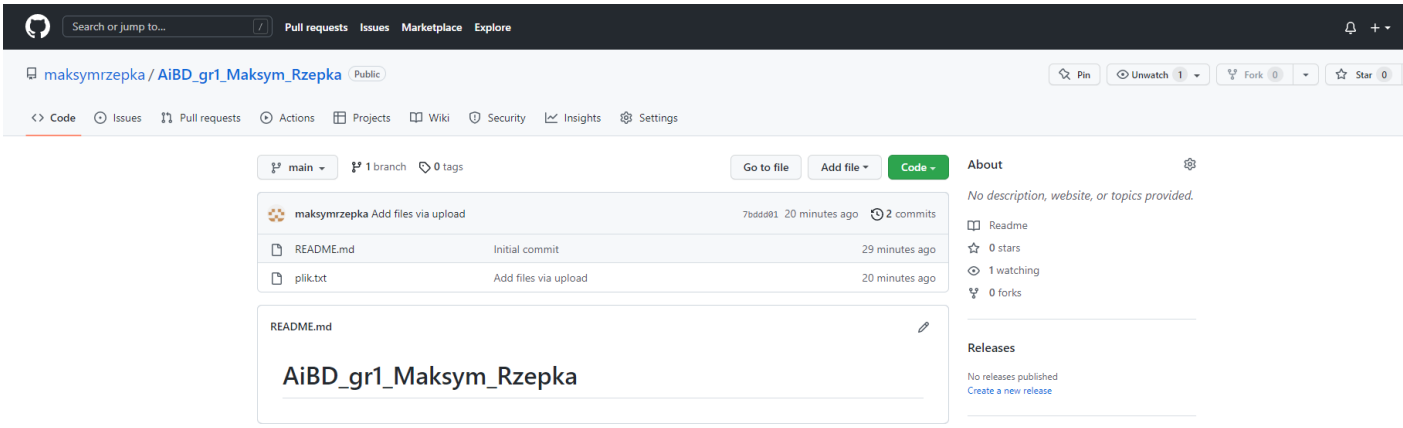
```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka pytest
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 22.9.0

Please update conda by running

    $ conda update -n base -c defaults conda



## Package Plan ##

  environment location: /home/student/.conda/envs/maksymrzepka
```

```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka scikit-learn
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 22.9.0
```

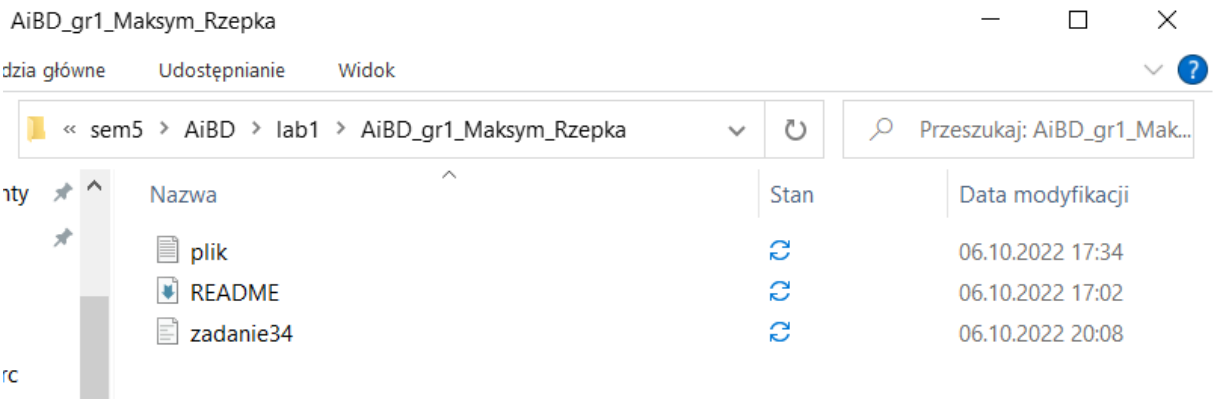
```
(maksymrzepka) student@PCL187:~$ conda install -n maksymrzepka scipy
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 22.9.0

Please update conda by running

    $ conda update -n base -c defaults conda
```

Zadanie 2

- utworzenie repozytorium na platformie GitHub oraz dodanie własnego pliku



- sklonowanie repozytorium

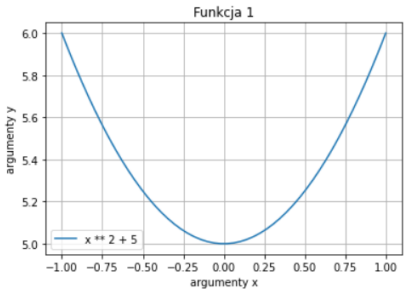


- link do mojego repozytorium

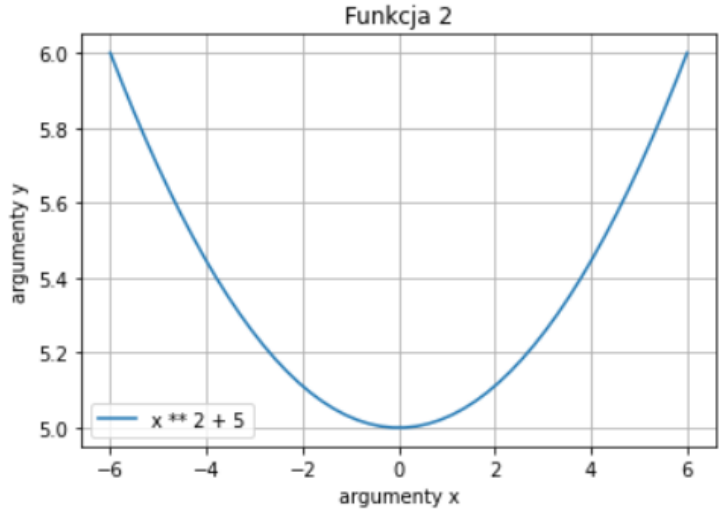
https://github.com/maksymrzepka/AiBD_gr1_Maksym_Rzepka

Zadanie 3

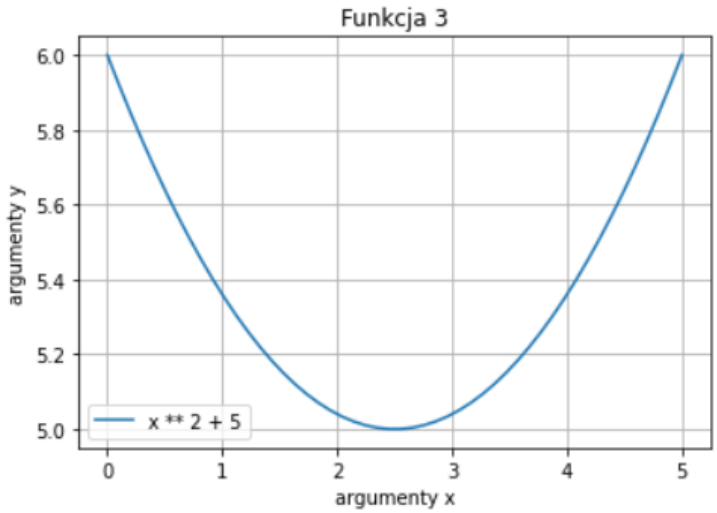
In [5]:
```
import numpy as np
import scipy
import matplotlib
import matplotlib.pyplot as plt

x_1 = np.linspace(-1, 1)
x_2 = np.linspace(-6, 6)
x_3 = np.linspace(0, 5)
y = x_1 ** 2 + 5
plt.plot(x_1, y, label ='x ** 2 + 5')
plt.xlabel("argumenty x")
plt.ylabel("argumenty y")
plt.title("Funkcja 1")
plt.grid()
plt.legend()
plt.show()
```



In [6]:
```
plt.plot(x_2, y, label ='x ** 2 + 5')
plt.xlabel("argumenty x")
plt.ylabel("argumenty y")
plt.title("Funkcja 2")
plt.grid()
plt.legend()
plt.show()
```



In [7]:
```
plt.plot(x_3, y, label ='x ** 2 + 5')
plt.xlabel("argumenty x")
plt.ylabel("argumenty y")
plt.title("Funkcja 3")
plt.grid()
plt.legend()
plt.show()
```



Zadanie 4

In [16]:
```
import pandas as pd

x = {'name':['Maksym', 'Grzegorz', 'Katarzyna', 'Barbara', 'Anna'],
    'surname':['Rzepka', 'Nowak', 'Nowakowska', 'Kowalska', 'Burnatowska'],
    'age':['20', '25', '30', '40', '37'],
    'sex':['mezczyzna', 'mezczyzna', 'kobieta', 'kobieta', 'kobieta']}
data_frame = pd.DataFrame(x, index=['1', '2', '3', '4', '5'])
data_frame
#data_frame.info() # wyswietlanie informacji
#data_frame.describe() # opis danych
#data_frame.head(3) # trzy pierwsze rekordy
```

Out[16]:

	name	surname	age	sex
1	Maksym	Rzepka	20	mezczyzna
2	Grzegorz	Nowak	25	mezczyzna
3	Katarzyna	Nowakowska	30	kobieta
4	Barbara	Kowalska	40	kobieta
5	Anna	Burnatowska	37	kobieta

In [19]:
```
import pandas as pd

x = {'name':['Maksym', 'Grzegorz', 'Katarzyna', 'Barbara', 'Anna'],
    'surname':['Rzepka', 'Nowak', 'Nowakowska', 'Kowalska', 'Burnatowska'],
    'age':['20', '25', '30', '40', '37'],
    'sex':['mezczyzna', 'mezczyzna', 'kobieta', 'kobieta', 'kobieta']}
data_frame = pd.DataFrame(x, index=['1', '2', '3', '4', '5'])
#data_frame
data_frame.info() # wyswietlanie informacji
#data_frame.describe() # opis danych
#data_frame.head(3) # trzy pierwsze rekordy
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 5 entries, 1 to 5
Data columns (total 4 columns):
 #   Column   Non-Null Count  Dtype
---  ------   --------------  -----
 0   name     5 non-null      object
 1   surname  5 non-null      object
 2   age      5 non-null      object
 3   sex      5 non-null      object
dtypes: object(4)
memory usage: 200.0+ bytes
```

In [22]:
```
import pandas as pd

x = {'name':['Maksym', 'Grzegorz', 'Katarzyna', 'Barbara', 'Anna'],
    'surname':['Rzepka', 'Nowak', 'Nowakowska', 'Kowalska', 'Burnatowska'],
    'age':['20', '25', '30', '40', '37'],
    'sex':['mezczyzna', 'mezczyzna', 'kobieta', 'kobieta', 'kobieta']}
data_frame = pd.DataFrame(x, index=['1', '2', '3', '4', '5'])
#data_frame
#data_frame.info() # wyswietlanie informacji
#data_frame.describe() # opis danych
data_frame.head(3) # trzy pierwsze rekordy
```

Out[22]:

	name	surname	age	sex
1	Maksym	Rzepka	20	mezczyzna
2	Grzegorz	Nowak	25	mezczyzna
3	Katarzyna	Nowakowska	30	kobieta

In [24]:
```
import pandas as pd

x = {'name':['Maksym', 'Grzegorz', 'Katarzyna', 'Barbara', 'Anna'],
    'surname':['Rzepka', 'Nowak', 'Nowakowska', 'Kowalska', 'Burnatowska'],
    'age':['20', '25', '30', '40', '37'],
    'sex':['mezczyzna', 'mezczyzna', 'kobieta', 'kobieta', 'kobieta']}
data_frame = pd.DataFrame(x, index=['1', '2', '3', '4', '5'])
#data_frame
#data_frame.info() # wyswietlanie informacji
data_frame.describe() # opis danych
#data_frame.head(3) # trzy pierwsze rekordy
```

Out[24]:

	name	surname	age	sex
count	5	5	5	5
unique	5	5	5	2
top	Maksym	Rzepka	20	kobieta
freq	1	1	1	3