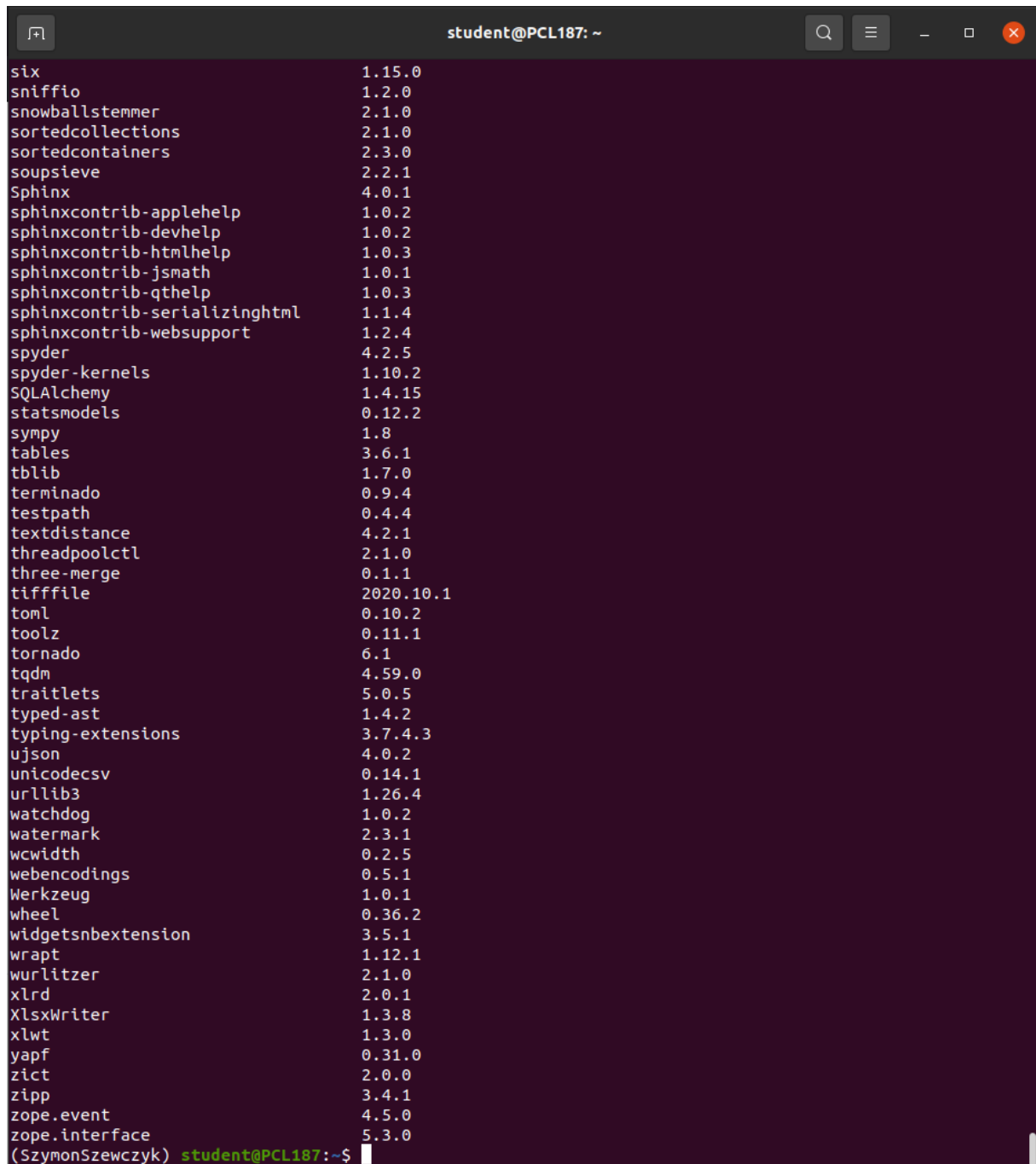


Analiza i Bazy Danych

Laboratorium 1

Szymon Szewczyk gr.7

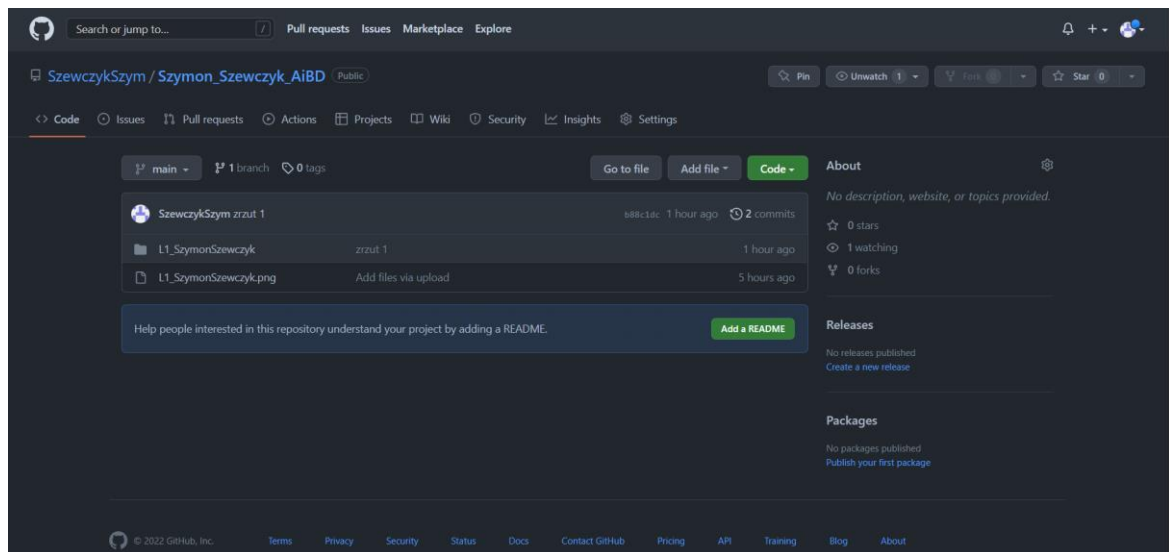
Zadanie 1.



```
student@PCL187: ~  
six 1.15.0  
sniffio 1.2.0  
snowballstemmer 2.1.0  
sortedcollections 2.1.0  
sortedcontainers 2.3.0  
soupsieve 2.2.1  
Sphinx 4.0.1  
sphinxcontrib-applehelp 1.0.2  
sphinxcontrib-devhelp 1.0.2  
sphinxcontrib-htmlhelp 1.0.3  
sphinxcontrib-jsmath 1.0.1  
sphinxcontrib-qthelp 1.0.3  
sphinxcontrib-serializinghtml 1.1.4  
sphinxcontrib-websupport 1.2.4  
spyder 4.2.5  
spyder-kernels 1.10.2  
SQLAlchemy 1.4.15  
statsmodels 0.12.2  
sympy 1.8  
tables 3.6.1  
tblib 1.7.0  
terminado 0.9.4  
testpath 0.4.4  
textdistance 4.2.1  
threadpoolctl 2.1.0  
three-merge 0.1.1  
tiffio 2020.10.1  
toml 0.10.2  
toolz 0.11.1  
tornado 6.1  
tqdm 4.59.0  
traitlets 5.0.5  
typed-ast 1.4.2  
typing-extensions 3.7.4.3  
ujson 4.0.2  
unicodcsv 0.14.1  
urllib3 1.26.4  
watchdog 1.0.2  
watermark 2.3.1  
wcwidth 0.2.5  
webencodings 0.5.1  
Werkzeug 1.0.1  
wheel 0.36.2  
widgetsnbextension 3.5.1  
wrapt 1.12.1  
wurlitzer 2.1.0  
xlrd 2.0.1  
XlsxWriter 1.3.8  
xlwt 1.3.0  
yapf 0.31.0  
zict 2.0.0  
zipp 3.4.1  
zope.event 4.5.0  
zope.interface 5.3.0  
(SzymonSzewczyk) student@PCL187:~$
```

Rysunek 1 Wszystkie zainstalowane pakiety

Zadanie 2.



Rysunek 2 Repozytorium na githubie z przestanyimi plikami

Zadanie 3.

Wykonałem kod przedstawiony na rysunku 3.

```
import numpy as np
import matplotlib.pyplot as plt

def function(x):
    return x**2 + 5

x_1 = np.linspace(-1, 1, 100)
x_2 = np.linspace(-6, 6, 100)
x_3 = np.linspace(0, 5, 100)
y_1 = function(x_1)
y_2 = function(x_2)
y_3 = function(x_3)

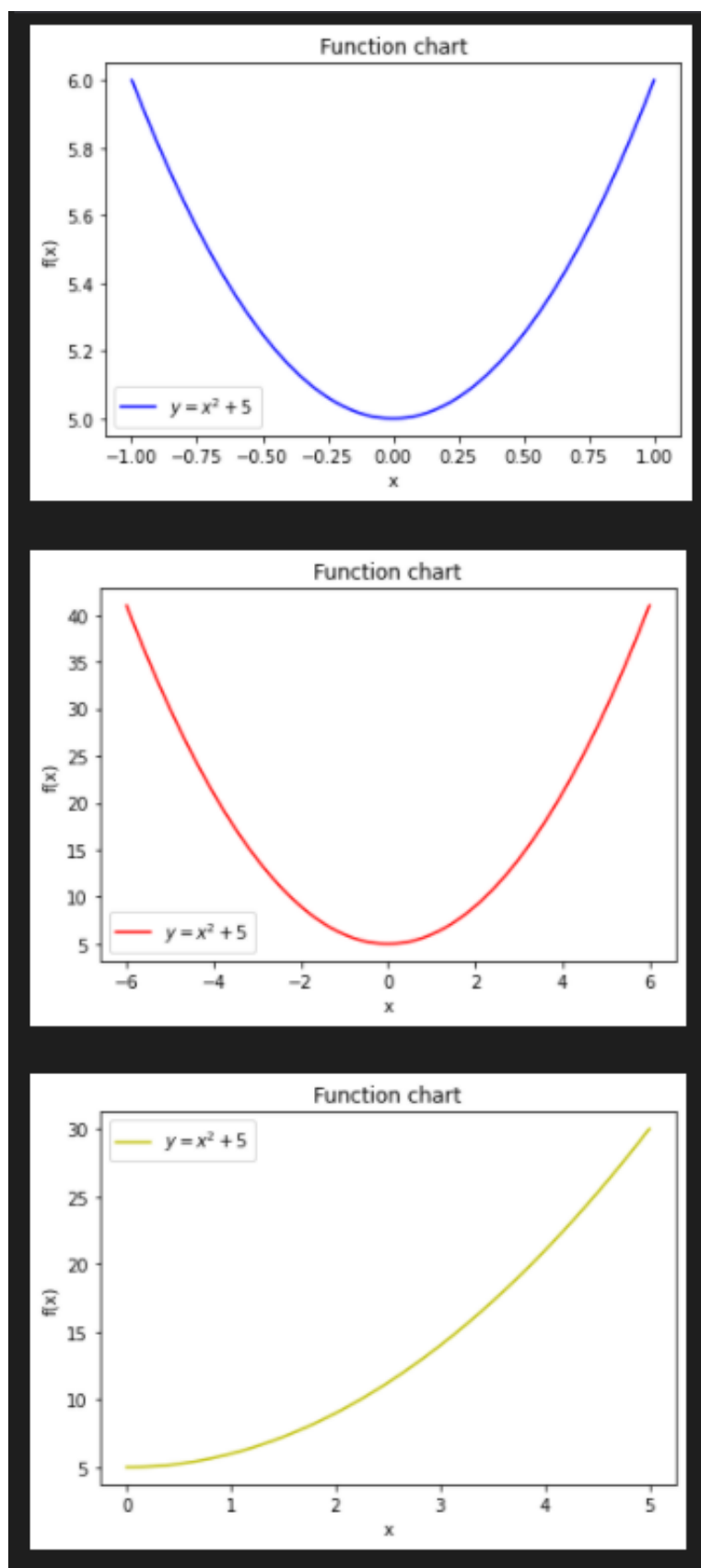
plt.plot(x_1, y_1, 'b', label = r"$y = x^2 + 5$")
plt.title("Function chart")
plt.xlabel("x")
plt.ylabel("f(x)")
plt.legend()
plt.show()

plt.plot(x_2, y_2, 'r', label = r"$y = x^2 + 5$")
plt.title("Function chart")
plt.xlabel("x")
plt.ylabel("f(x)")
plt.legend()
plt.show()

plt.plot(x_3, y_3, 'y', label = r"$y = x^2 + 5$")
plt.title("Function chart")
plt.xlabel("x")
plt.ylabel("f(x)")
plt.legend()
plt.show()
```

Rysunek 3 kod zadania 3

Wyniki zostały przedstawione na rysunku 4



Rysunek 4 Wykresy funkcji z zadania 3

Zadanie 4

```
data = pd.DataFrame(np.array([['Steve', 'Jobs', 61, 'male'], ['Elon', 'Musk', 51, 'male'], ['Kanye', 'West', 45, 'male'],
                              ['Angela', 'Merkel', 68, 'female'], ['Barack', 'Obama', 61, 'male']]), columns=['name', 'surname', 'age', 'sex'])

data.info(verbose=True)
```

✓ 0.8s

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 5 entries, 0 to 4
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: 288.0+ bytes
```

```
data.describe()
```

✓ 0.7s

	name	surname	age	sex
count	5	5	5	5
unique	5	5	4	2
top	Steve	Jobs	61	male
freq	1	1	2	4

```
data.head(3)
```

✓ 0.8s

	name	surname	age	sex
0	Steve	Jobs	61	male
1	Elon	Musk	51	male
2	Kanye	West	45	male

Rysunek 5 Kod wraz z wynikami