

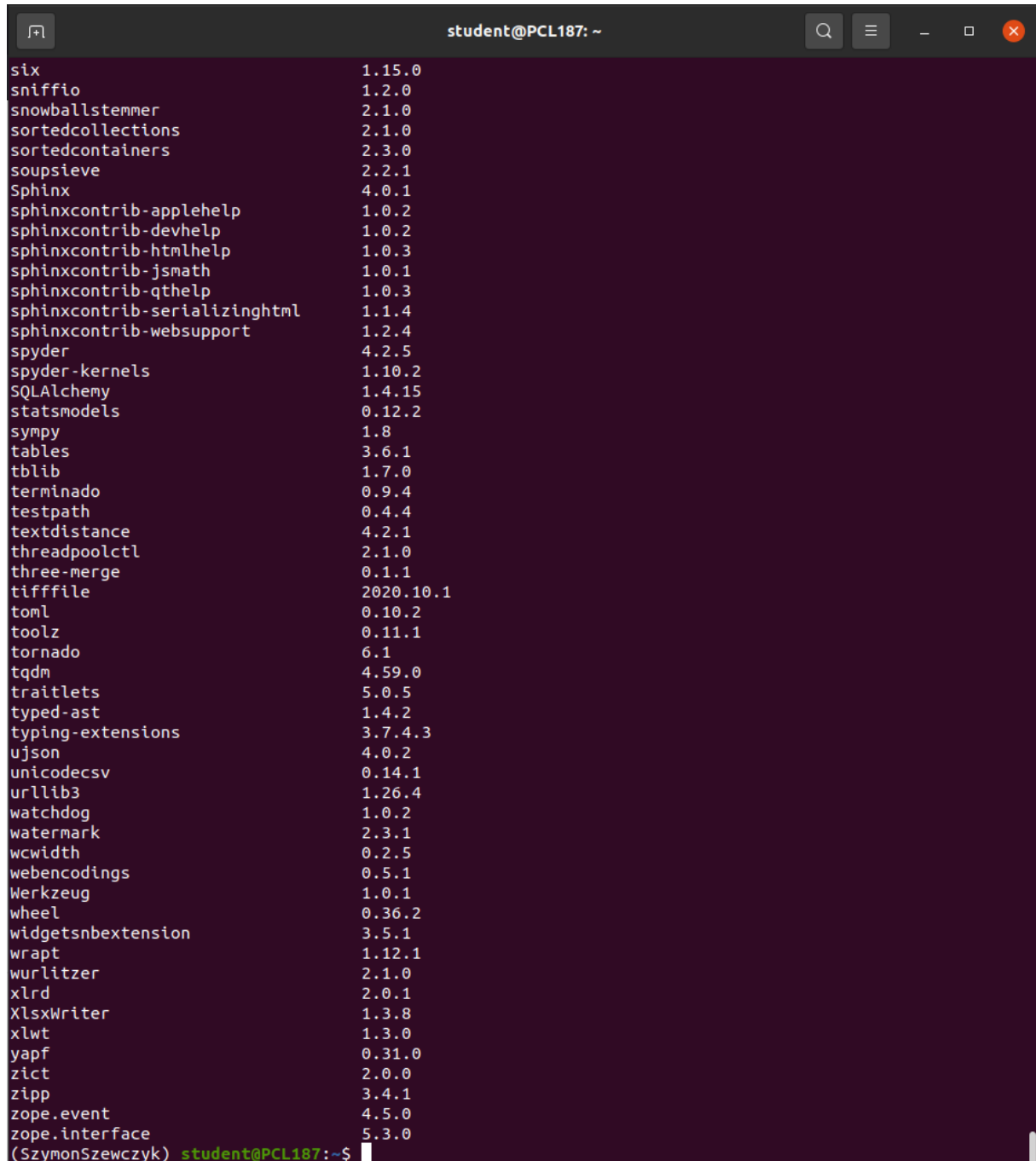
Analiza i Bazy Danych

Laboratorium 1

Szymon Szewczyk gr.7

https://github.com/SzewczykSzym/Szymon_Szewczyk_AiBD/tree/main/L1_SzymonSzewczyk

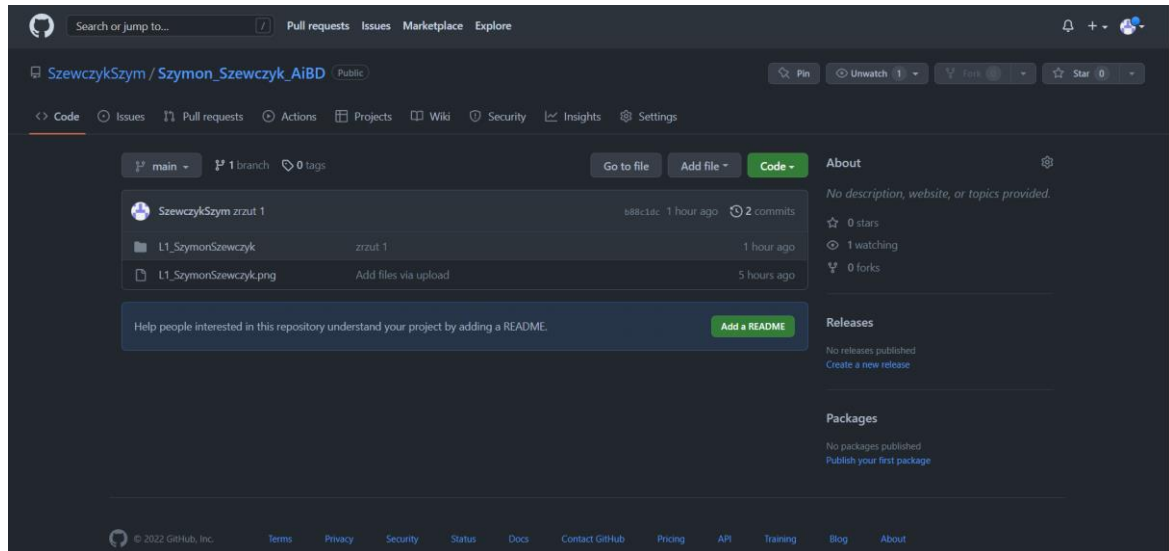
Zadanie 1.

A terminal window with a dark purple background and white text. The window title is 'student@PCL187: ~'. It displays a list of installed Python packages and their versions, sorted alphabetically. The packages include six, sniffio, snowballstemmer, sortedcollections, sortedcontainers, soupsieve, Sphinx, sphinxcontrib-applehelp, sphinxcontrib-devhelp, sphinxcontrib-htmlhelp, sphinxcontrib-jsmath, sphinxcontrib-qthelp, sphinxcontrib-serializinghtml, sphinxcontrib-websupport, spyder, spyder-kernels, SQLAlchemy, statsmodels, sympy, tables, tblib, terminado, testpath, textdistance, threadpoolctl, three-merge, tiffio, toml, toolz, tornado, tqdm, traitlets, typed-ast, typing-extensions, ujson, unicodedcsv, urllib3, watchdog, watermark, wcwidth, webencodings, Werkzeug, wheel, widgetsnbextension, wrapt, wurlitizer, xlrd, XlsxWriter, xlwt, yapf, zict, zipp, zope.event, and zope.interface. The terminal ends with the prompt '(SzymonSzewczyk) student@PCL187:~\$' and a cursor.

```
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
unicodedcsv 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
wurlitizer 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 przesłanymi 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()

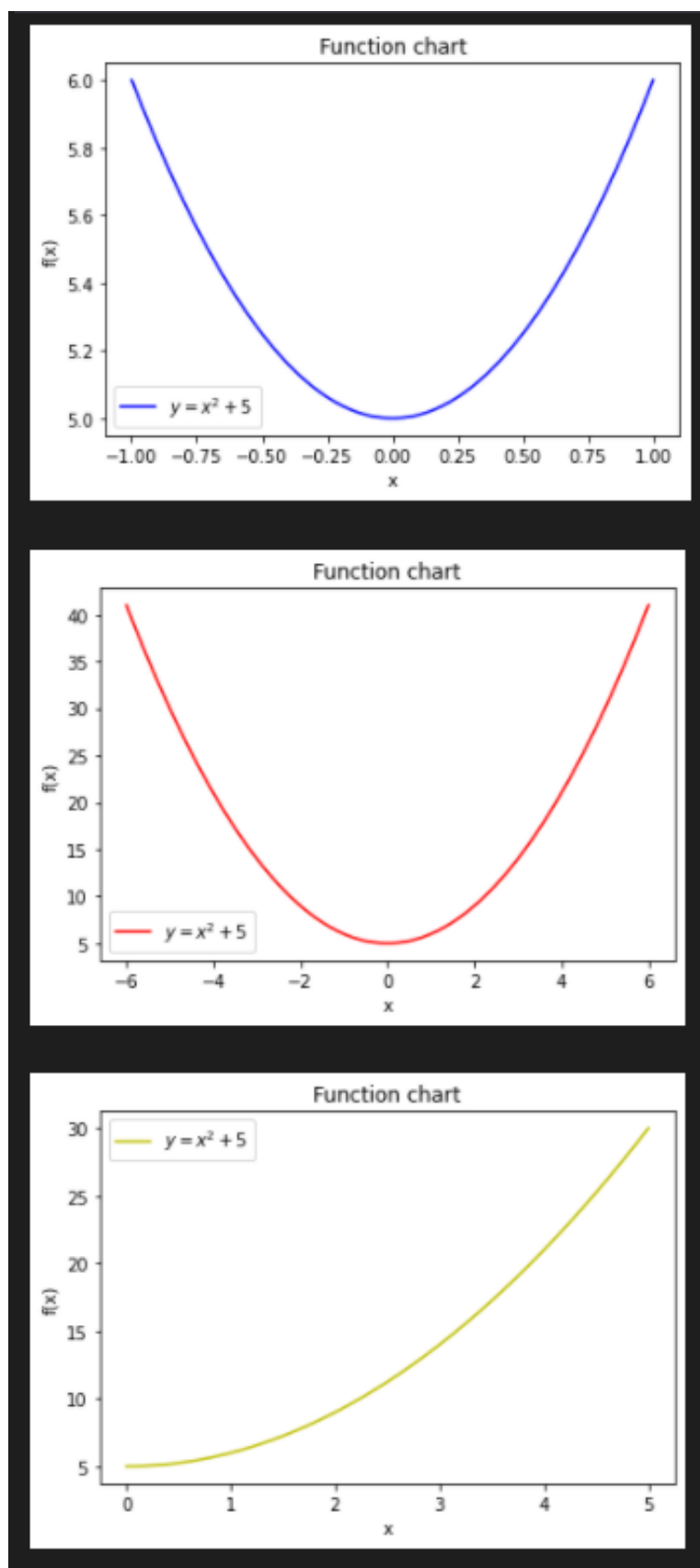
plt.plot(x_3, y_3, 'y', label = r"$y = x^2 + 5$")
plt.title("Function chart")
plt.xlabel("x")
plt.ylabel("f(x)")
plt.legend()
plt.show()

```

✓ 0.4s

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