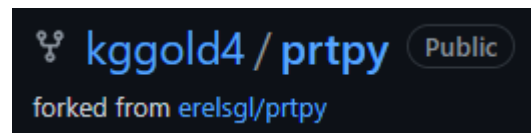# מטלה 5 - מחקר

קורס: תכנות אלגוריתמים מחקריים

מגיש: כפיר גולדפרב

משימות הכנה:

1. בוצע fork לספרייה prtpy:

2. בוצע clone לספריה:

```
PS D:\Projects\Development\Courses\Python\Programming Research Algorithms\Research\Ex5\clone prtpy> git clone https://github.com/kggold4/prtpy.git
Cloning into 'prtpy'...
remote: Enumerating objects: 440, done.
remote: Counting objects: 100% (72/72), done.
remote: Compressing objects: 100% (14/14), done.
remote: Total 440 (delta 67), reused 58 (delta 58), pack-reused 368
Receiving objects: 100% (440/440), 92.17 KiB | 646.00 KiB/s, done.
Resolving deltas: 100% (276/276), done.
```

3. כניסה לתיקייה:

```
PS D:\Projects\Development\Courses\Python\Programming Research Algorithms\Research\Ex5\clone prtpy> cd prtpy
```

4. יצירת סביבה וירטואלית:

```
PS D:\Projects\Development\Courses\Python\Programming Research Algorithms\Research\Ex5\myvenv> virtual
env .myvenv
created virtual environment CPython3.8.8.final.0-64 in 762ms
  creator CPython3Windows(dest=D:\Projects\Development\Courses\Python\Programming Research Algorithms\
Research\Ex5\myvenv\.myvenv, clear=False, no_vcs_ignore=False, global=False)
  seeder FromAppData(download=False, pip=bundle, setuptools=bundle, wheel=bundle, via=copy, app_data_d
ir=C:\Users\Kfir Goldfarb\AppData\Local\pypa\virtualenv)
    added seed packages: pip==22.0.4, setuptools==62.1.0, wheel==0.37.1
  activators BashActivator,BatchActivator,FishActivator,NushellActivator,PowerShellActivator,PythonAct
ivator
```

(יש הרבה פקודות שעשיתי אחסוך את מכאן)

5. התקנה של הספרייה:

```
PS D:\Projects\Development\Courses\Python\Programming Research Algorithms\Research\Ex5\clone prtpy\prtpy> pip install -e .




Obtaining file:///D:/Projects/Development/Courses/Python/Programming%20Research%20Algorithms/Research/Ex5/clone%20prtpy/prtpy
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
    Preparing wheel metadata ... done
Requirement already satisfied: mip in c:\programdata\anaconda3\lib\site-packages (from prtpy==0.7.0) (1.13.0)
Requirement already satisfied: numpy>=1.21.3 in c:\programdata\anaconda3\lib\site-packages (from prtpy==0.7.0) (1.22.3)
Requirement already satisfied: scipy>=1.6.1 in c:\programdata\anaconda3\lib\site-packages (from prtpy==0.7.0) (1.8.0)
Requirement already satisfied: cffi in c:\programdata\anaconda3\lib\site-packages (from mip->prtpy==0.7.0) (1.14.5)
Requirement already satisfied: pycparser in c:\programdata\anaconda3\lib\site-packages (from cffi->mip->prtpy==0.7.0) (2.20)
Installing collected packages: prtpy
  Running setup.py develop for prtpy
Successfully installed prtpy
```

```
PS D:\Projects\Development\Courses\Python\Programming Research Algorithms\Research\Ex5\clone prtpy\prtpy> pip install -r requirements.txt
Requirement already satisfied: numpy>=1.21.3 in c:\programdata\anaconda3\lib\site-packages (from -r requirements.txt (line 1)) (1.22.3)
Requirement already satisfied: scipy>=1.6.1 in c:\programdata\anaconda3\lib\site-packages (from -r requirements.txt (line 2)) (1.8.0)
Requirement already satisfied: mip in c:\programdata\anaconda3\lib\site-packages (from -r requirements.txt (line 3)) (1.13.0)
Requirement already satisfied: cffi in c:\programdata\anaconda3\lib\site-packages (from mip->-r requirements.txt (line 3)) (1.14.5)
Requirement already satisfied: pycparser in c:\programdata\anaconda3\lib\site-packages (from cffi->mip->-r requirements.txt (line 3)) (2.20)
```

6. בדיקות:

```
PS D:\Projects\Development\Courses\Python\Programming Research Algorithms\Research\Ex5\clone prtpy\prtpy> pytest
============================= test session starts =============================
platform win32 -- Python 3.8.8, pytest-6.2.3, py-1.10.0, pluggy-0.13.1
rootdir: D:\Projects\Development\Courses\Python\Programming Research Algorithms\Research\Ex5\clone prtpy\prtpy, configfile: pyproject.toml
plugins: anyio-2.2.0
collected 22 items

examples\maximin_share_demo.py .                                         [  4%]
prtpy\bins.py ..                                                         [ 13%]
prtpy\objectives.py .                                                    [ 18%]
prtpy\packing\__init__.py .                                              [ 22%]
prtpy\packing\cflz_covering.py ..                                        [ 31%]
prtpy\packing\first_fit.py .                                             [ 40%]
prtpy\packing\greedy_covering.py .                                       [ 45%]
prtpy\partitioning\__init__.py .                                         [ 50%]
prtpy\partitioning\balanced.py .                                         [ 54%]
prtpy\partitioning\complete_greedy.py .                                  [ 59%]
prtpy\partitioning\dp.py .                                               [ 63%]
prtpy\partitioning\greedy.py .                                           [ 68%]
prtpy\partitioning\ilp.py .                                              [ 72%]
prtpy\partitioning\multifit.py .                                         [ 77%]
prtpy\partitioning\roundrobin.py .                                       [ 81%]
tests\test_packing_algorithms.py ..                                      [ 90%]
tests\test_partition_algorithms.py ..                                    [100%]

============================== warnings summary ===============================
C:\ProgramData\Anaconda3\lib\site-packages\pyreadline\py3k_compat.py:8
  C:\ProgramData\Anaconda3\lib\site-packages\pyreadline\py3k_compat.py:8: DeprecationWarning: Using or importing the ABCs from 'collections' instead of from 'collections.abc' is deprecated since Python
 d in 3.9 it will stop working
    return isinstance(x, collections.Callable)

-- Docs: https://docs.pytest.org/en/stable/warnings.html
========================= 22 passed, 1 warning in 39.83s ======================
PS D:\Projects\Development\Courses\Python\Programming Research Algorithms\Research\Ex5\clone prtpy\prtpy>
```

קישורים:

קישור ל fork שעשיתי – https://github.com/kggold4/prtpy

קישור ל clone שעשיתי – https://github.com/kggold4/programming-research-algorithms-assignments/tree/main/Research/Ex5/clone%20prtpy

קישור לסביבה שיצרתי - https://github.com/kggold4/programming-research-algorithms-assignments/tree/main/Research/Ex5/myvenv/.myvenv

כותרות:

הכל נמצא בקובץ test_algorithms.py