DEEPHEALTH

Running pyECVL on Windows with Docker

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The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825111.

Requirements

- PyCharm (https://www.jetbrains.com/pycharm/)
  - Full-fledged or
  - Free community but installing the docker plug-in

- Docker (https://docs.docker.com/desktop/windows/install/)

- *dhealth/pylibs-toolkit* docker image

```
docker pull dhealth/pylibs-toolkit:latest
```

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PyCharm

- PyCharm is an integrated development environment (IDE) used in computer programming, specifically for the Python programming language.
- PyCharm is cross-platform, with Windows, macOS and Linux versions.
- The Community Edition is released under the Apache License; there is also Professional Edition with extra features
- PyCharm provides an API so that developers can write their own plugins to extend PyCharm features. Several plugins from other JetBrains IDE also work with PyCharm.

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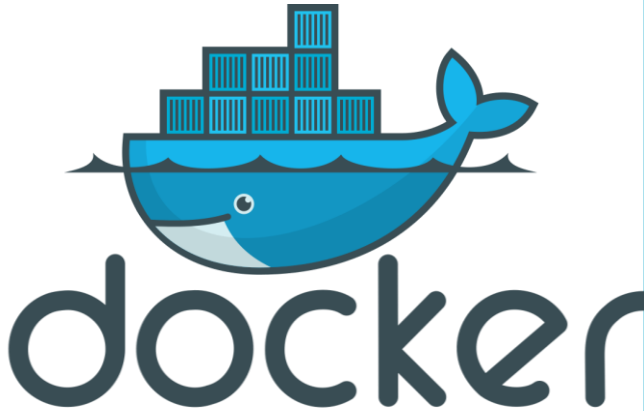
Docker

- Docker is a set of platform as a service (PaaS) products that use OS-level virtualization to deliver software in packages called containers.
- Containers are isolated from one another and bundle their own software, libraries, and configuration files.
- Containers can communicate with each.
- Because all of the containers share the services of a single operating system kernel, they use fewer resources than virtual machines.
- The service has both free and premium tiers.
- We can run PyECVL without installing it and their dependencies.



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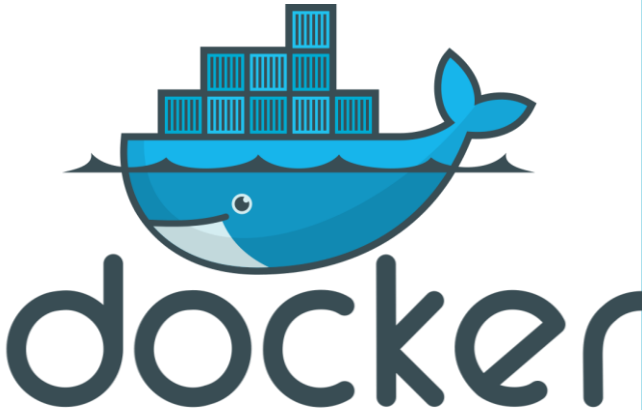

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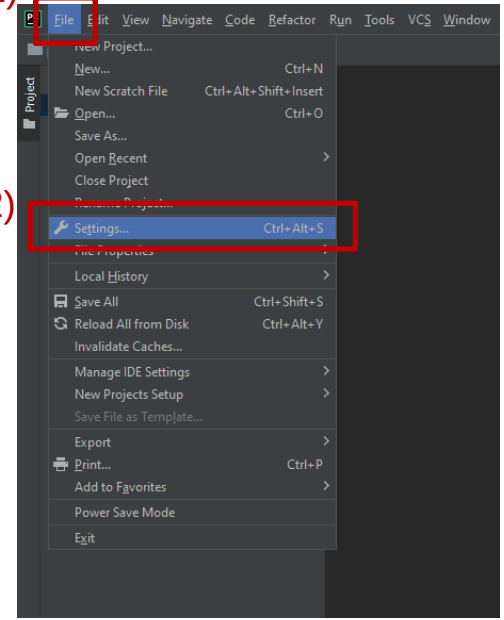
Configuring PyCharm

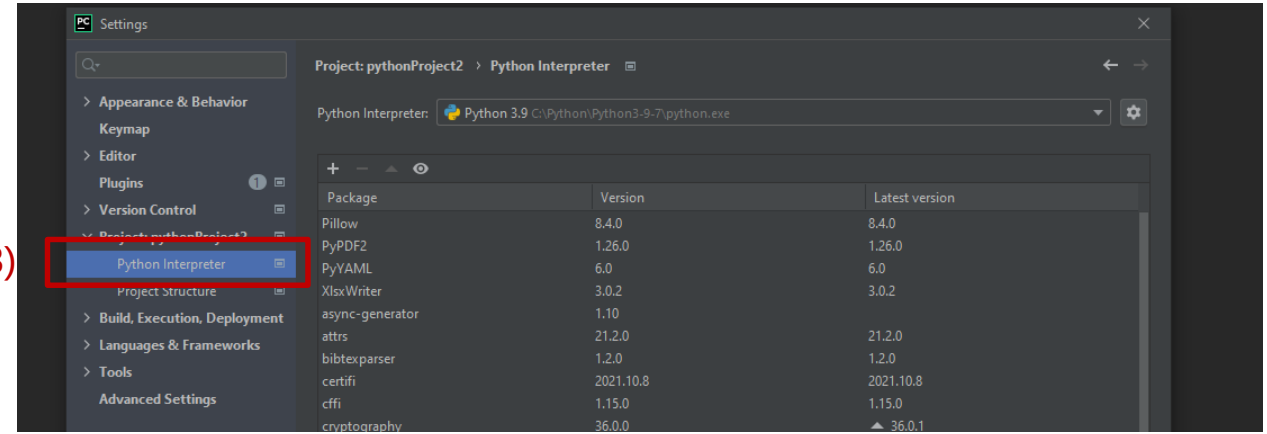
- Create a new python project and set the docker container as the remote interpreter.

(1)

(2)



(3)



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Configuring PyCharm

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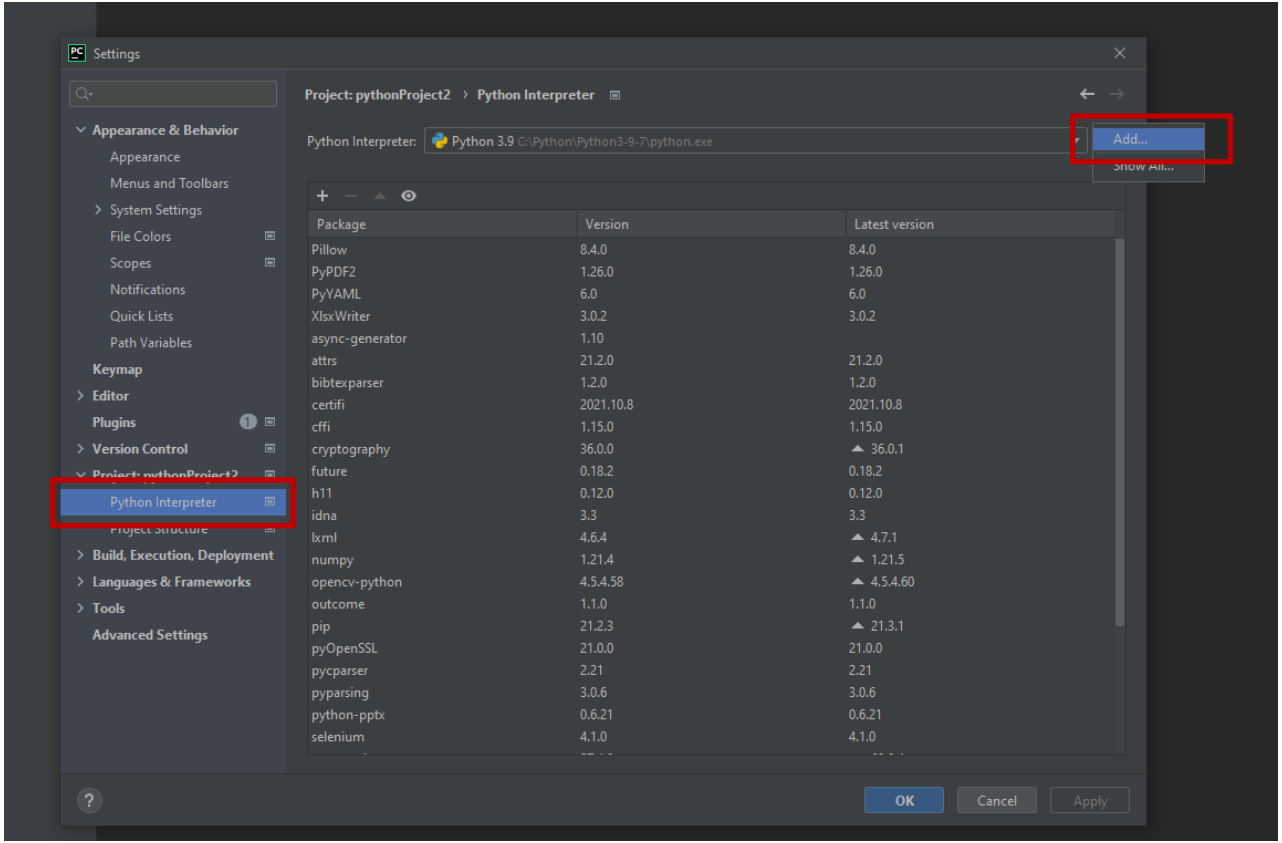
(5)



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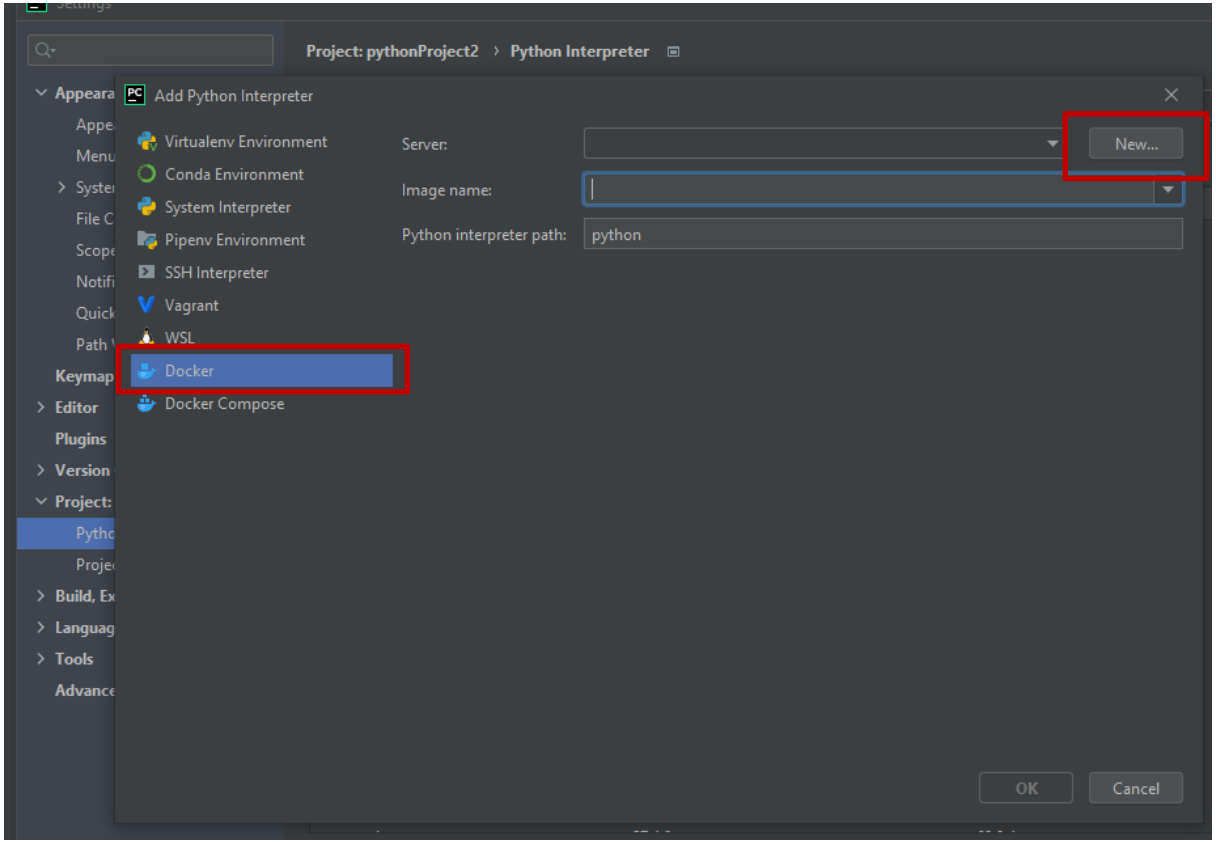
Configuring PyCharm

(6)



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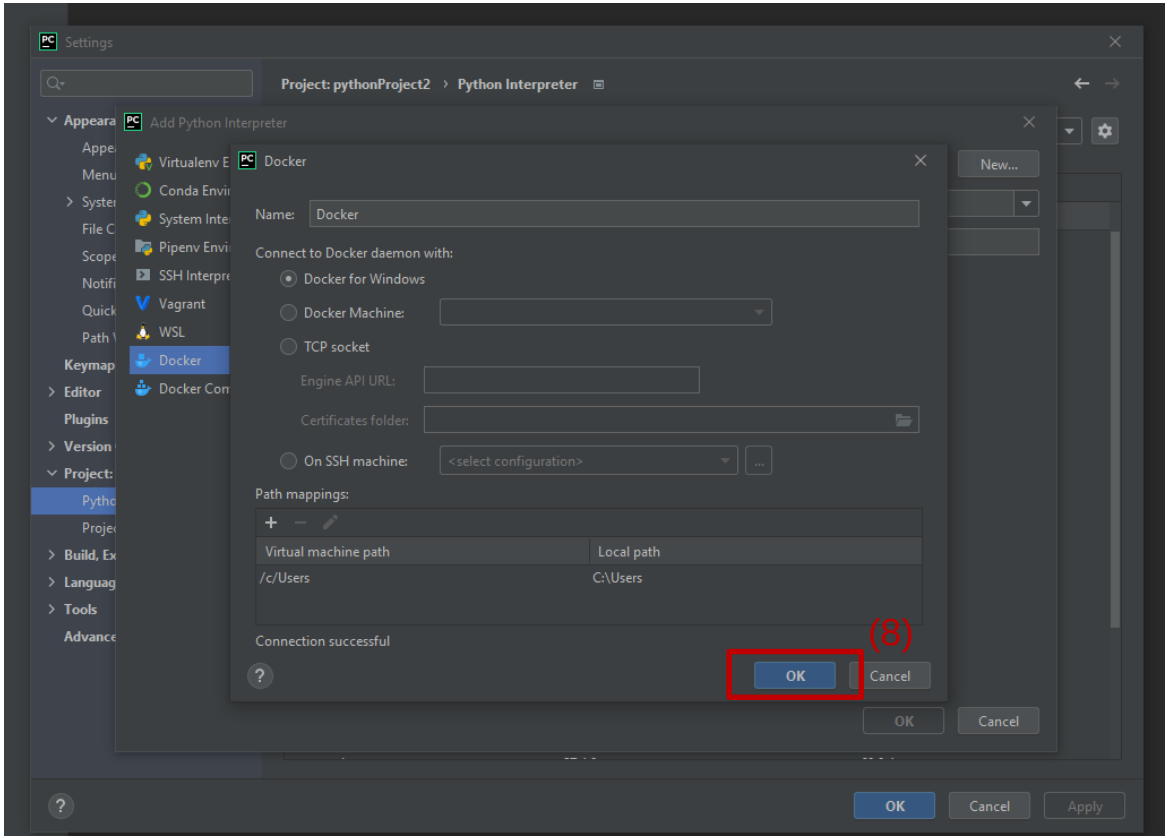
Configuring PyCharm



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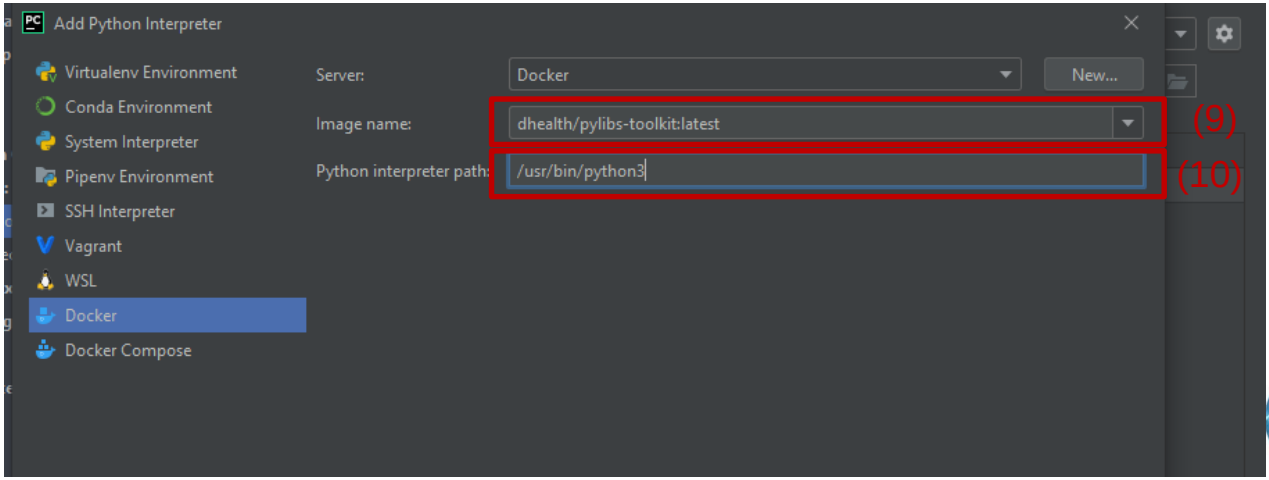
Configuring PyCharm

- If you pulled the image correctly (first slide), now you should see (and select) it in the dropdown menu.
- The path of the remote interpreter is **`/usr/bin/python3`**



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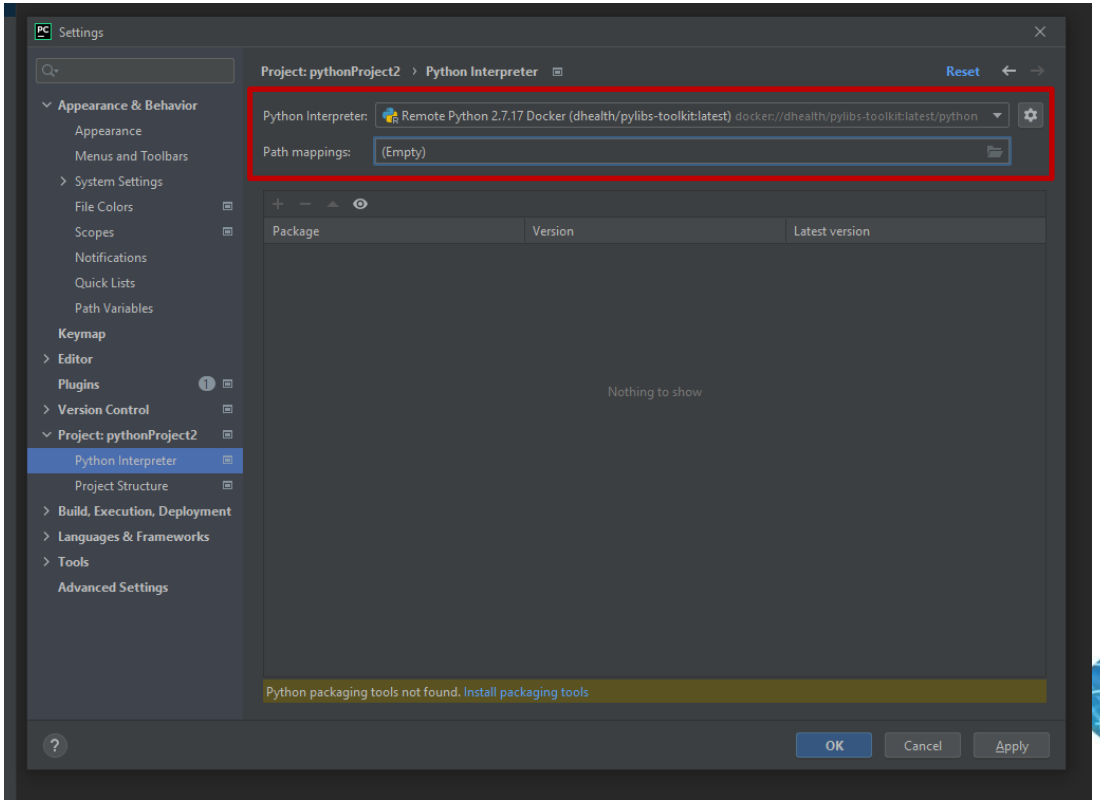
Configuring PyCharm

- If everything went well, you will see something like this



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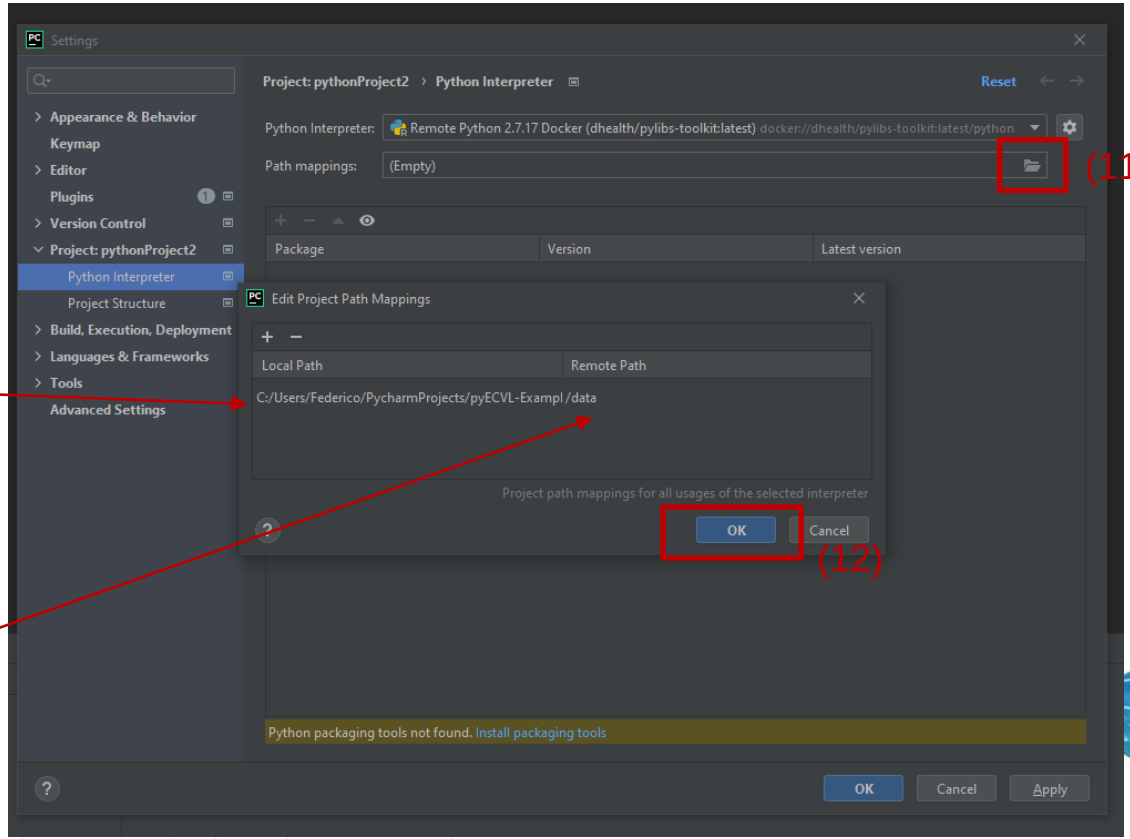
Configuring PyCharm

- Now we must set the mappings for the data

path of the current project

where to put files in the docker container



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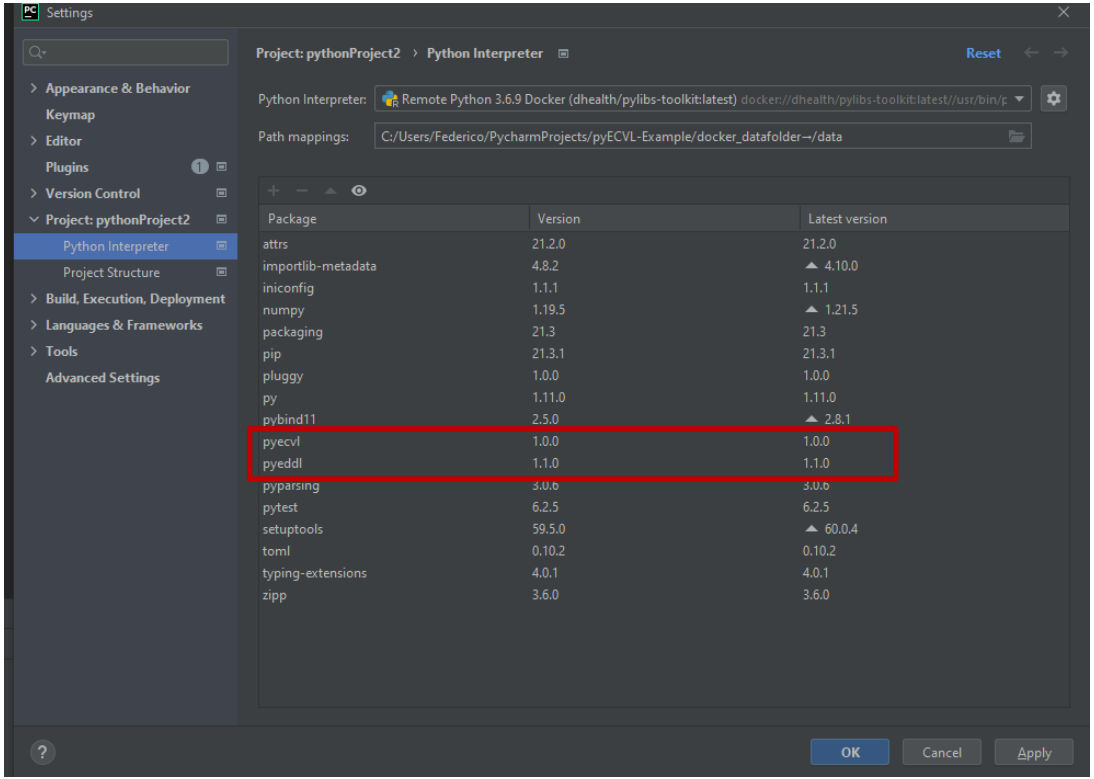
Configuring PyCharm

- If everything went well, among the other packages you will see the two python libraries, pyecvl and pyeddl



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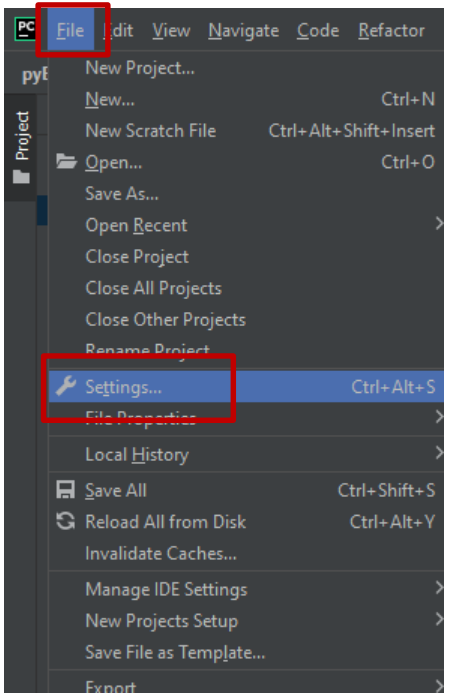
Install the OpenCV Image Viewer Plugin

(1)



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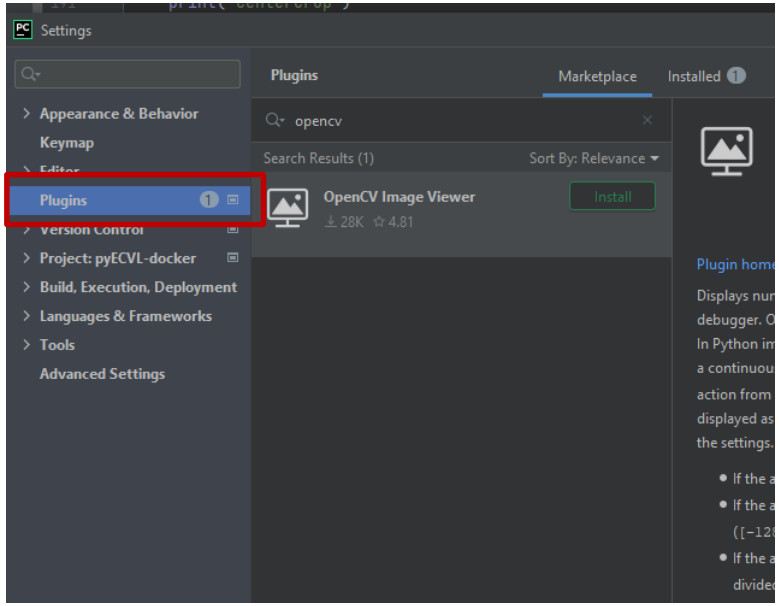

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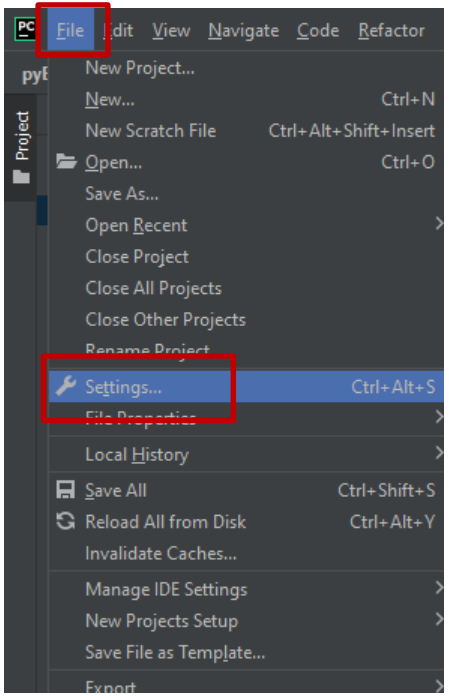

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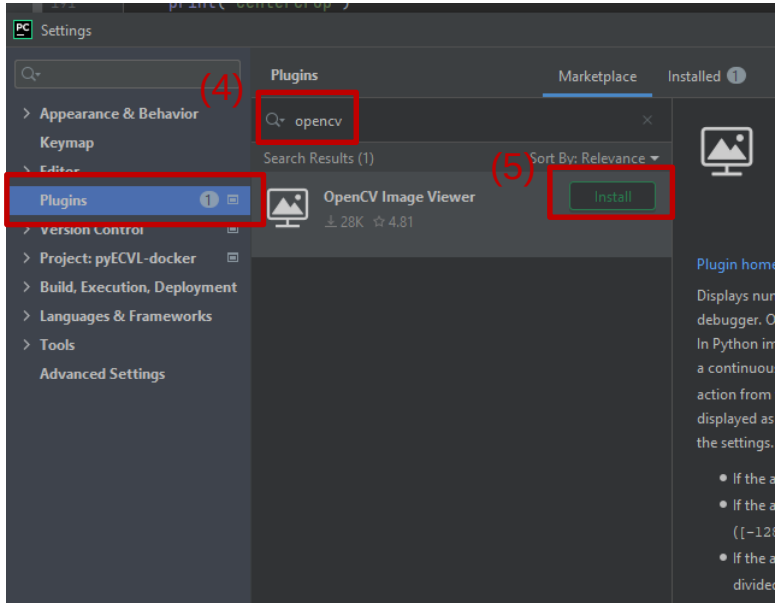

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Test Everything

- Download the *imageproc.py* example from GitHub: https://github.com/deephealthproject/pyecvl/blob/master/examples/imgproc.py
- Place the source code and the example image you want to use in the local project. Remember, the folder must match the one specified in the mapping (slide 13).
- Specify the input arguments (two image paths) and run it.
- If you want to test the viewer plugin, you can add the code

```
image_np = np.array(img, copy=False).transpose([1,0,2])
```

to convert **img** into a numpy array with «yxc» layout. Then, during debug you can view **image_np** by right clicking the object in the debbuger view and clicking «view as image» from the menu.

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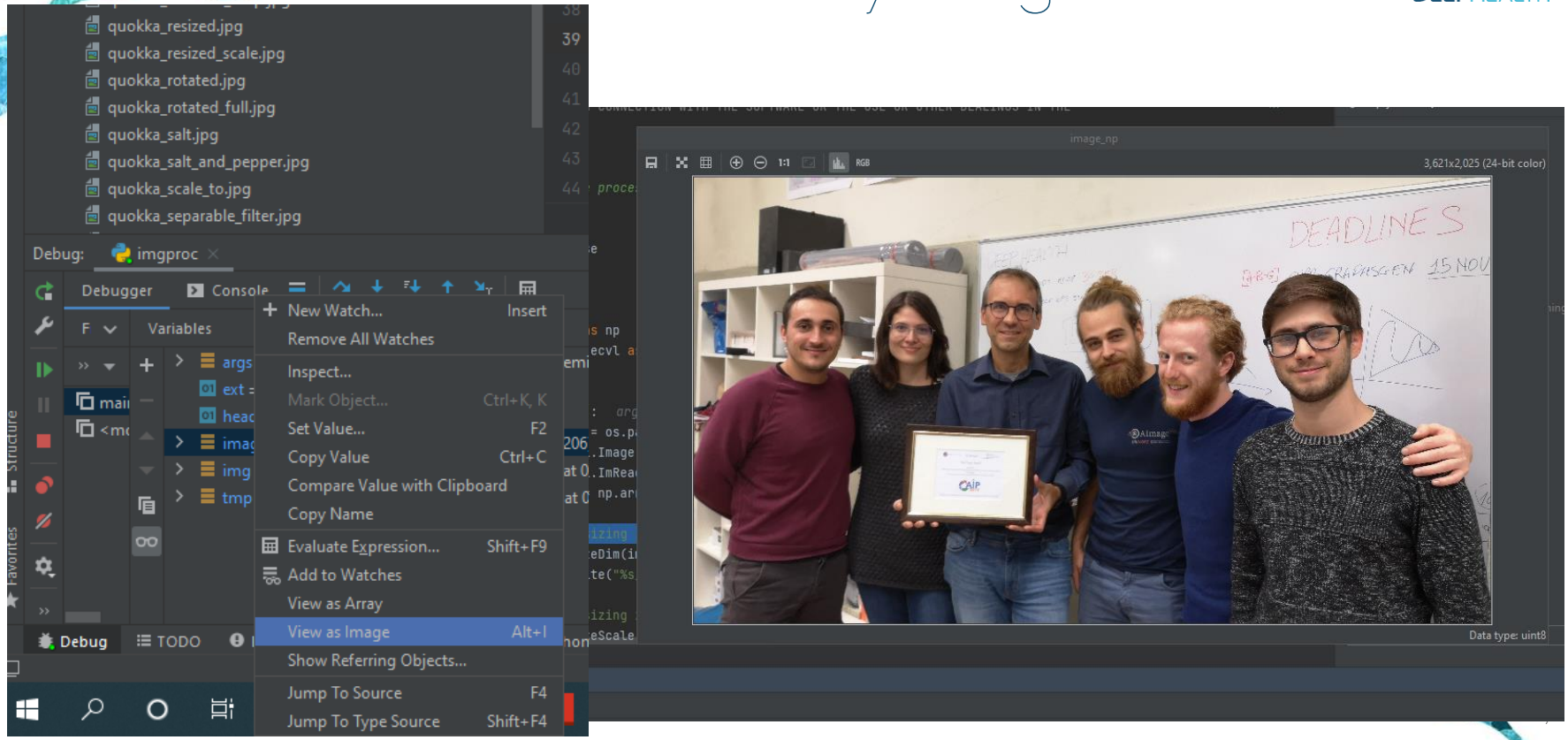

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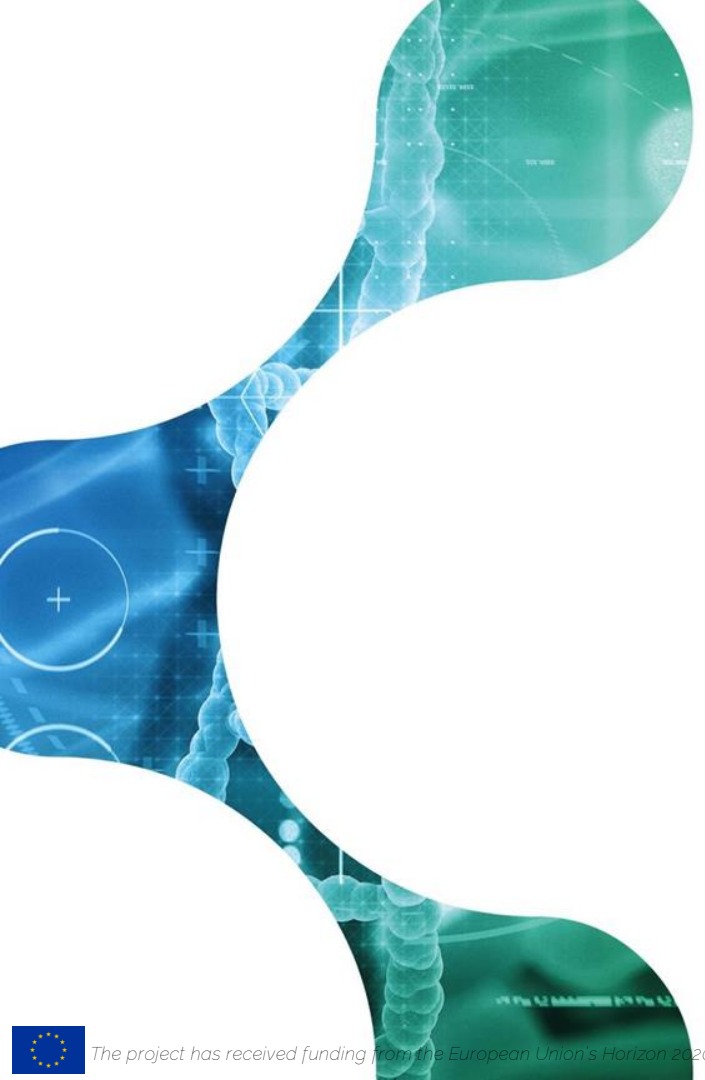

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Thank you!

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