

Computational Intelligence for Optimization

Practical Classes



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Office Hours:

The Plan

- Parallel to the theoretical classes
- Optimization techniques/methods
- Applying them on some problems

The language: Python
IDE: PyCharm



- Most of the classes will continue on the PyCharm IDE instead of pdfs.
- The codes will be uploaded on Moodle after the classes.
- The notes written during the classes might be shared on Moodle as well.

Evaluation: Project

- Topics will be published in April
- Theory + programming
- 3 or 4 people

Deliverables: 3rd of June, 09h00 (AM)

- Source Code
- Report

Oral Defense: 5-6 June

(7th may be included depending on the scheduling, I'll inform you)

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Week I

PyCharm & Introduction

PyCharm

<https://www.jetbrains.com/pycharm/download/#section=windows>



Version: 2021.3.2
Build: 213.6777.50
31 January 2022

[System requirements](#)
[Installation instructions](#)
[Other versions](#)

Download PyCharm

[Windows](#) [macOS](#) [Linux](#)

Professional

For both Scientific and Web Python development. With HTML, JS, and SQL support.

[Download](#)

Free trial

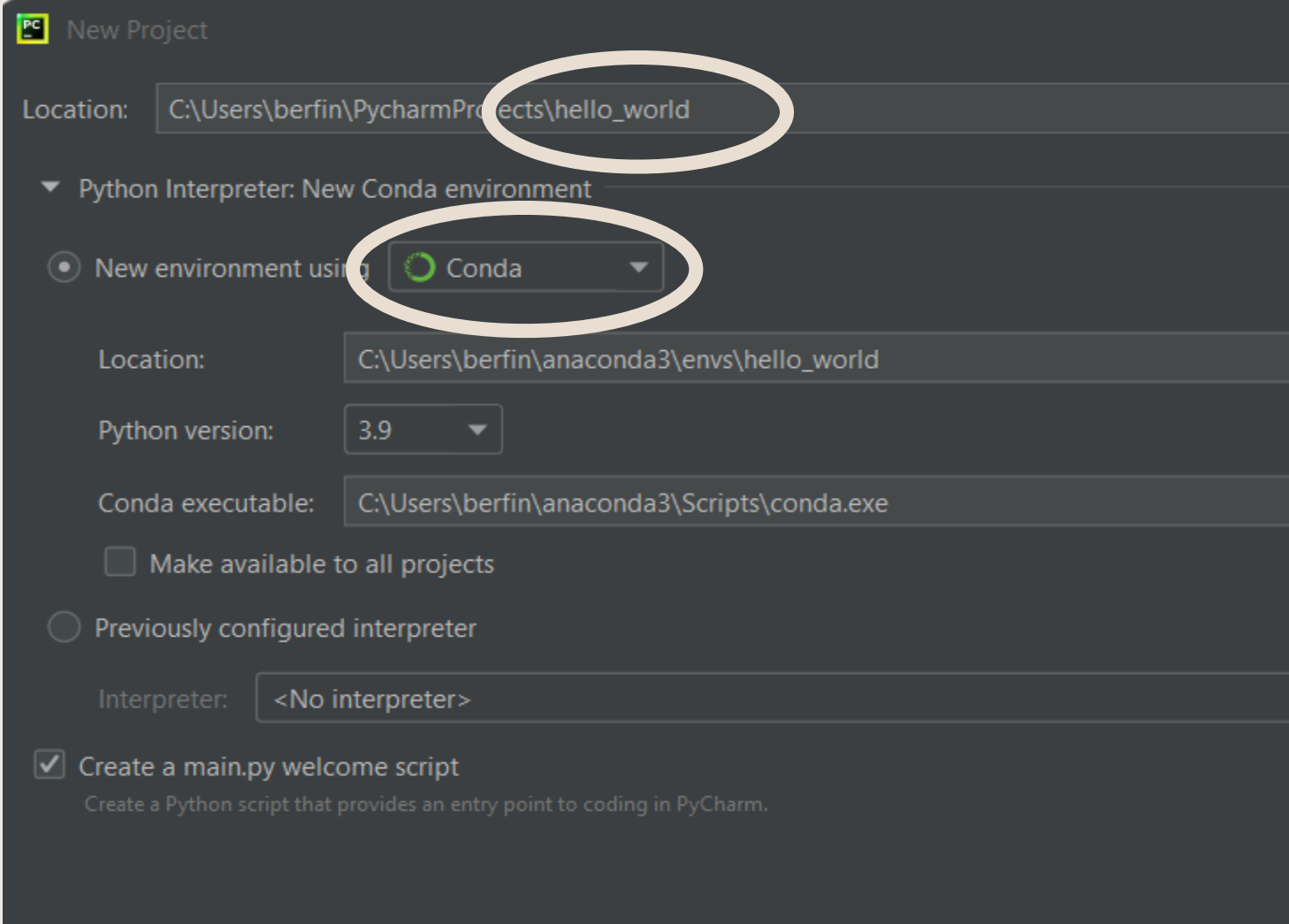
Community

For pure Python development

[Download](#)

Free, built on open-source

New Project



The image shows the 'New Project' dialog in PyCharm. Two yellow circles highlight specific fields: the 'Location' field at the top and the 'New environment using' dropdown menu. The 'Location' field contains the path 'C:\Users\berfin\PycharmProjects\hello_world'. The 'New environment using' dropdown is set to 'Conda'. Below this, the 'Location' field for the Conda environment is 'C:\Users\berfin\anaconda3\envs\hello_world', the 'Python version' is '3.9', and the 'Conda executable' is 'C:\Users\berfin\anaconda3\Scripts\conda.exe'. There are also checkboxes for 'Make available to all projects', 'Previously configured interpreter', and 'Create a main.py welcome script'.

PC New Project

Location: C:\Users\berfin\PycharmProjects\hello_world

▼ Python Interpreter: New Conda environment

☒ New environment using Conda ▼

Location: C:\Users\berfin\anaconda3\envs\hello_world

Python version: 3.9 ▼

Conda executable: C:\Users\berfin\anaconda3\Scripts\conda.exe

☐ Make available to all projects

☐ Previously configured interpreter

Interpreter: <No interpreter>

☒ Create a main.py welcome script
Create a Python script that provides an entry point to coding in PyCharm.

Discovering PyCharm & Warm-up

- First hello world
 - Different ways to run the code
 - Creating and opening folders and files
 - Python console
 - Python packages
 - Terminal
 - Debugging
-
- Importing data
 - Lists (list comprehensions, indexes, multi-dimensional lists)
 - Functions