Programming for Economists

Exercise 1

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Today's program

First Hour

- 12:15 – 12:30: Introduction to the course — structure, requirements, and tips

- 12:30 – 13:00: Work on DataCamp or install Anaconda, Git and Visual Studio Code (VS Code)

- 13:00 – 13:15: Break – I am open for questions!

Second Hour

- 13:15 – 13:30: Introduction to VS Code Extensions and GitHub Desktop

- 13:30 – 14:00: Work on DataCamp or install Anaconda, Git and VS Code

- 14:00 – 14:15: Break – I am open for questions!

Third Hour

- 14:15 – 14:30: Tentative introduction to the Data Project and Model Project

- 14:15 – 15:00: Work on DataCamp or install Anaconda, Git and VS Code

Structure and requirements: Lectures and DataCamp

Lectures and exercise classes

- Psychical lectures with Jeppe or Brigitte, week 36, 39-41, 43-50. At-home lectures week 37-38

  - Installation guides, videos, problem sets, and assignments will be posted here:
    https://sites.google.com/view/numeconcph-progecon/home or here: https://github.com/NumEconCopenhagen

- Exercise classes with your TA, week 37-41, 43-51

  - My presentation slides and problem solutions will be posted on my GitHub repository:
    https://github.com/mcp656/Class-7

DataCamp

The following DataCamp courses must be completed individually by September 28

1. Introduction to Python
2. Intermediate Python
3. Introduction to Functions in Python
4. Intermediate Object-Oriented Programming in Python (chapter: Overloading and Multiple Inheritance)
5. Introduction to NumPy

- Register using your KU login at:
  https://www.datacamp.com/groups/shared_links/6217a48b85d9db0d2e4af9bb9a70401a396a3195716013e3301ddd4e0ed730f2

Structure and requirements: Data and Model Project

Submission Requirement

- You are required to hand in and have approved both a Data project and a Model project, which together account for 40% of the exam

Group Work

- **Working in groups is actively encouraged!** Projects may be completed in groups of up to 4 students, and groups may be formed across classes. If your group spans multiple exercise classes, please inform your TA. **The TAs will collectively decide who will grade your work**

Evaluation

- The requirements for acceptance are relatively relaxed; however, I will contact you if a project is acceptable for submission but not strong enough to pass the exam. **If the project is both acceptable for submission and strong enough to pass the exam, I will not contact you!**

Hand-in dates: Data Project October 29 and Model Project Dec 10

Tips!

- Do the exercises – this is primarily an applied subject!

- Join a group – the mandatory assignments are large!

- Leverage online resources — programming is about understanding concepts, not memorizing!
  - Chatbots and GitHub Copilot is allowed! Just remember to quote them. From experience, it is usually easy to tell when something has been written entirely by a bot.

- Be critical and try to understand the code. Chatbots and Copilot can be helpful, but they also make mistakes and often take the easiest route instead of the clearest one. Remember — good code is written for people, not bots!

Work on DataCamp or install Anaconda, Git and Visual Studio Code (VS Code)

Anaconda

- A distribution system that helps you manage and install Python and packages

Git

- Tracks your changes and helps you push and pull code

Visual Studio Code (VS Code)

- A coding platform that is more user-friendly than the terminal, with features like Jupyter Notebooks, PDF readers, and data viewers

Installation Guide

https://sites.google.com/view/numeconcph-progecon/guides/installation

BREAK
I am available for questions

Recommendation: Install VS Code extensions

Use Market Place in VS Code!

Python Extension Pack

- Generates docstrings automatically with AutoDocstring

- Provides language support for Python

- Helps maintain correct indentation with Python Indent

- And much more!

Data Wrangler

- Helps with data viewing, cleaning and preparation of datasets

vscode-pdf

- Lets you view PDF files in Jupyter

Recommendation: Install VS Code extensions

Use Market Place in VS Code!

GitHub Copilot

- Helps you generate code, comments, and docstrings

- Assists with fixing mistakes in your code

Create a free account with your KU login

Recommendation: Install GitHub Desktop

GitHub Desktop is…

- Easy to use – Simple buttons for commits, branches, and pull requests

- Keeps things separate – Code in VS Code, version control in GitHub Desktop

- Clear overview – Nice visuals for history and branches

Work on DataCamp or install Anaconda, Git, Visual Studio Code (VS Code) or Extensions

BREAK
I am available for questions

Tentative introduction to the Data Project and Model Project

Data Project

https://github.com/mcp656/Class-7/tree/main/2024%20-%20Introduction%20to%20Programming%20and%20Numerical%20Analysis/Former%20Assignments/Data%20Project%202023

Model Project

https://github.com/mcp656/Class-7/tree/main/2024%20-%20Introduction%20to%20Programming%20and%20Numerical%20Analysis/Former%20Assignments/Model%20Project%202023

Bear in mind that there are some issues with the Data Project, as yfinance is no longer fully robust

Furthermore, you may use https://github.com/NumEconCopenhagen to find inspiration from previous projects.

Work on DataCamp or install Anaconda, Git, Visual Studio Code (VS Code) or Extensions

Questions & comments?