Installation/IDE/Debugging

Nisarag Bhatt and Qiming Bao

COMPSCI235 Lab 1

Hello

My name is Qiming and I am in 1st Year Computer Science Ph.D. student. The other tutor Nisarag who is the 4th Year Softward Engineering student.

- Ask questions on Piazza instead of emailing us so your classmates can see the question and answers
- These slides will be on Canvas, and any source code demonstrated along with TeX source code for these slides can be found on GitHub

- Make a journal and keep note of what you did for each lab in this journal. Think of it as documenting your journey across the exercises across the lab
- The journal may be digital or physical
- At the end of the week, you will submit a pdf format of your journal
- We will be checking if your journal entry of that weeks lab is done properly

Question

Who doesn't have their own device here?

Learning Outcomes

- Install Python
- Understand Integrated Development Environments (IDEs)
- Configure PyCharm IDE for software development in Python programming language
- Create a Python based project in PyCharm IDE
- Write and debug a set of basic python programs in PyCharm IDE
- Virtual Environments / `requirements.txt`

Installation

Question

Who here has installed `Python 3`?

Installation

Question

Who here has installed `Python 3`?

If you haven't, please download it from here

PyCharm

- If you prefer using another IDE, text editor then feel free to use that in the course.
- Jetbrains is a company which makes many IDE's for various languages. An IDE they have for Python is PyCharm.
- Download the Community Edition of PyCharm from here or download it from the Canvas
- If you want, you can also get the professional version by signing up to Jetbrains with your university email!
- Follow installation steps

Virtual Environments

- virtualenv (venv) is a tool to create isolated Python environments. Integrated within Python 3.
- venv allows you to essentially create a closed area/environment for you to build your program.
- This is useful because your project is completely isolated from other projects you are working on.
- PyCharm will set this up for you automatically but if you are setting it up via command line then you would need run this command: python -m venv env and then source env/bin/activate or env/Scripts/activate.
- Follow installation steps

requirements.txt

- Why is this needed? Sometimes your projects are dependent on libraries other people have made and also require specific versions of those libraries.
- Inside of requirements.txt you can specify the library and the version (i.e. python-dotenv==0.13.0)
- This is useful because your project is completely isolated from other projects you are working on.
- PyCharm can usually install this automatically if you tell it to.
- To do this via command line we use: pip3 install -r requirements.txt

Demo

- Time for a demo with PyCharm and Debugging and Virtual Environments
  - We will go over setting up a Hello World project. Trying doing the next 2 on your own.
  - Calculate and print factorial of a number
  - Print first 20 Fibonacci numbers
  - We will also go over an example of setting up a requirements.txt file and installing it.
- Code examples will be posted to Github