

Installation/IDE/Debugging

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COMPSCI235 Lab 1

Hello

My name is Nisarag and I am in 4th Year Software Engineering

- ▶ Ask questions on Piazza instead of emailing me 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 [my 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](#)
- ▶ 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`

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`)
- ▶ 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, 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