System Setup & Grader Intro.

SI100B Fall 2020 Tutorial Week 1

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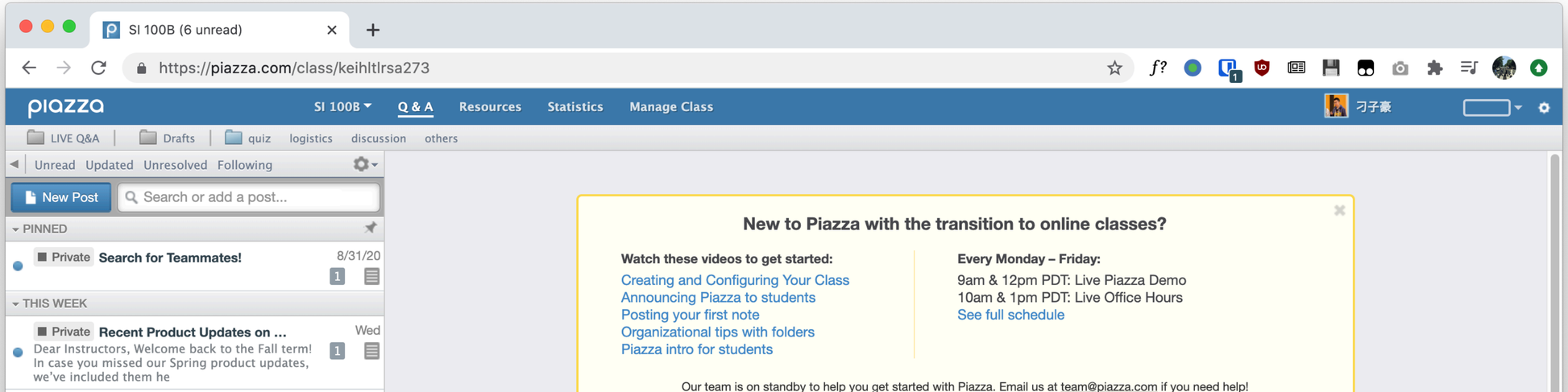
Administrivia

Tools

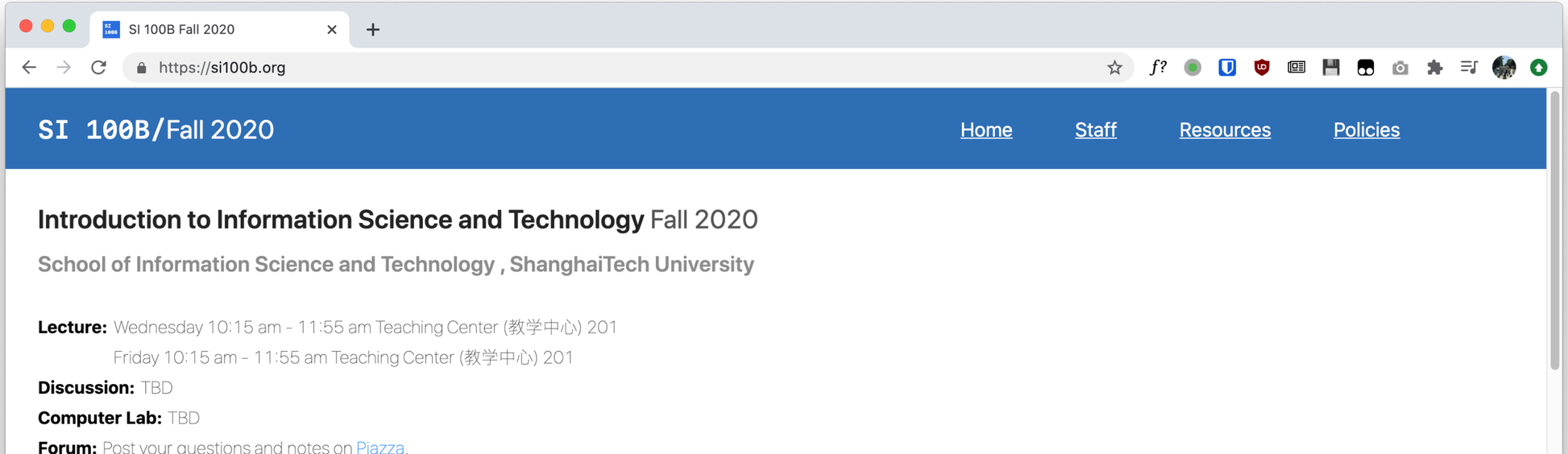
- **Piazza**:
  - Post your questions and notes on Piazza;
  - Register at http://piazza.com/shanghaitech.edu.cn/fall2020/si100b;
  - Check at least every 12 hrs for updates (new lecture slides, new assignments etc.);
  - Change your username to your Chinese name (e.g. 王大锤 or 丁<space>一)



Administrivia

Tools

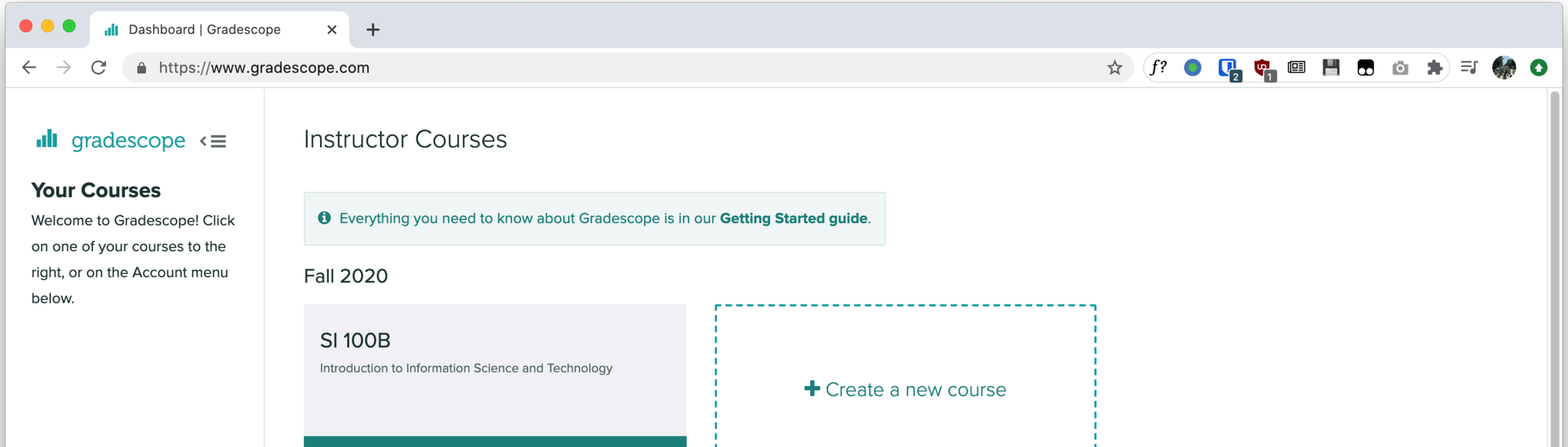
- **SI100B.org**:
  - The course homepage: general information;
  - Course syllabus, reading material, OH, policy etc.;
  - Check it for reference;



Administrivia

Tools

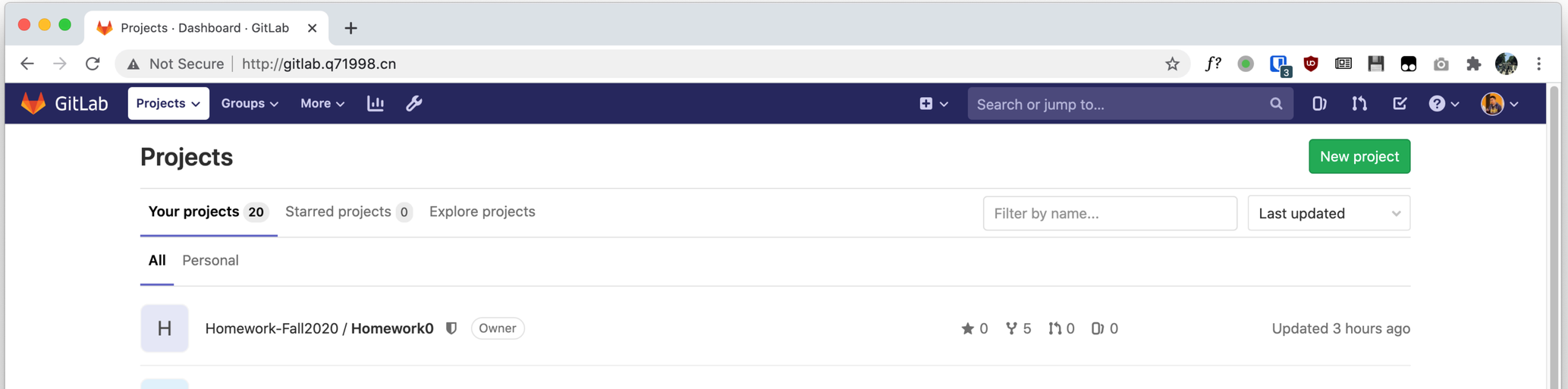
- **Gradescope**:
  - Submit your writing assignment here;
  - Register at https://www.gradescope.com with entry code 9D7J7V;
  - Fill in your Chinese name and student ID in your settings;



Administrivia

Tools

- **Auto-grader** http://gitlab.q71998.cn:
  - Submit your programming assignment here;
  - Password email has been sent to your ShanghaiTech email. Change your password ASAP;
  - User manual at https://si100b.org/content/gitlab-manual.pdf
  - Usage subject to the course code of conduct: https://si100b.org/resource-policy/#policies



Administrivia

Policy

- **Zero-tolerance towards plagiarism**
  - Fact: we have sophisticated technologies and tools to detect plagiarism and we will use them;
  - You may not:
    - Read or possess solution code written by other people;
    - Submit code derived from code written by other people;
    - Allow other people to read or possess solution code by yourself actively or passively;
  - When in doubt, ask before acting;
  - Full code of conduct: https://si100b.org/resource-policy/#policies

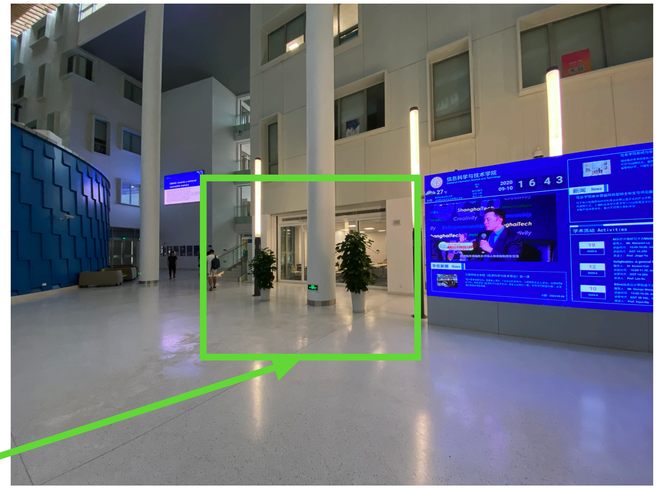
Administrivia

Assignments

- **Writing Assignment**: Logistics Assignment
  - Due: Sept. 16 23:59 (next Wed.) on Gradescope;
  - Concerning the **code of conduct (**https://si100b.org/resource-policy/#policies**)** of SI100B;
  - 1% of your final score;
- **Programming Assignment 0**: System Setup
  - Due: Sept. 16 23:59 (next Wed.) on auto-grader;
  - Dummy assignment help you to set up the Python environment on your computer;

Administrivia

Discussion & OH



- **Office Hour:**
  - Time for asking questions to TAs face to face - high efficiency;
  - Time table: https://si100b.org/, starting this Fri.;
  - Location: SIST 1B-101
- **Discussion:**
  - TAs lecture supplementary materials or introductions to PAs - just like this one;
  - Three more discussions for Python part;
  - Vote for time slot on Piazza.

System Setup

Python Interpreter

- **Installation**
  - Linux (Ubuntu Linux e.t.c.):
    - Your system should ship with Python 3;
    - Check your version: SI100B is using Python version 3.7:
      - Inconsistent version may cause problem;
    - Install with your package managers:
      - For Ubuntu Linux: `apt update && apt install python3`

System Setup

Python Interpreter

- **Installation**
  - macOS:
    - Your system should ship with Python 3;
    - macOS Catalina comes with Python version 3.8:
    - Or you can install it with `homebrew`:
      - Install `homebrew` from https://brew.sh/
      - Install Python 3.7 with `brew install python@3.7`

System Setup

Python Interpreter

- **Installation**
  - Windows:
    - Option 0 (recommended): Install a Linux distro as a dual-boot to your Windows
      - Ubuntu Linux is recommended for green hand: https://www.ubuntu.com/

System Setup

Why Linux (UNIX)?

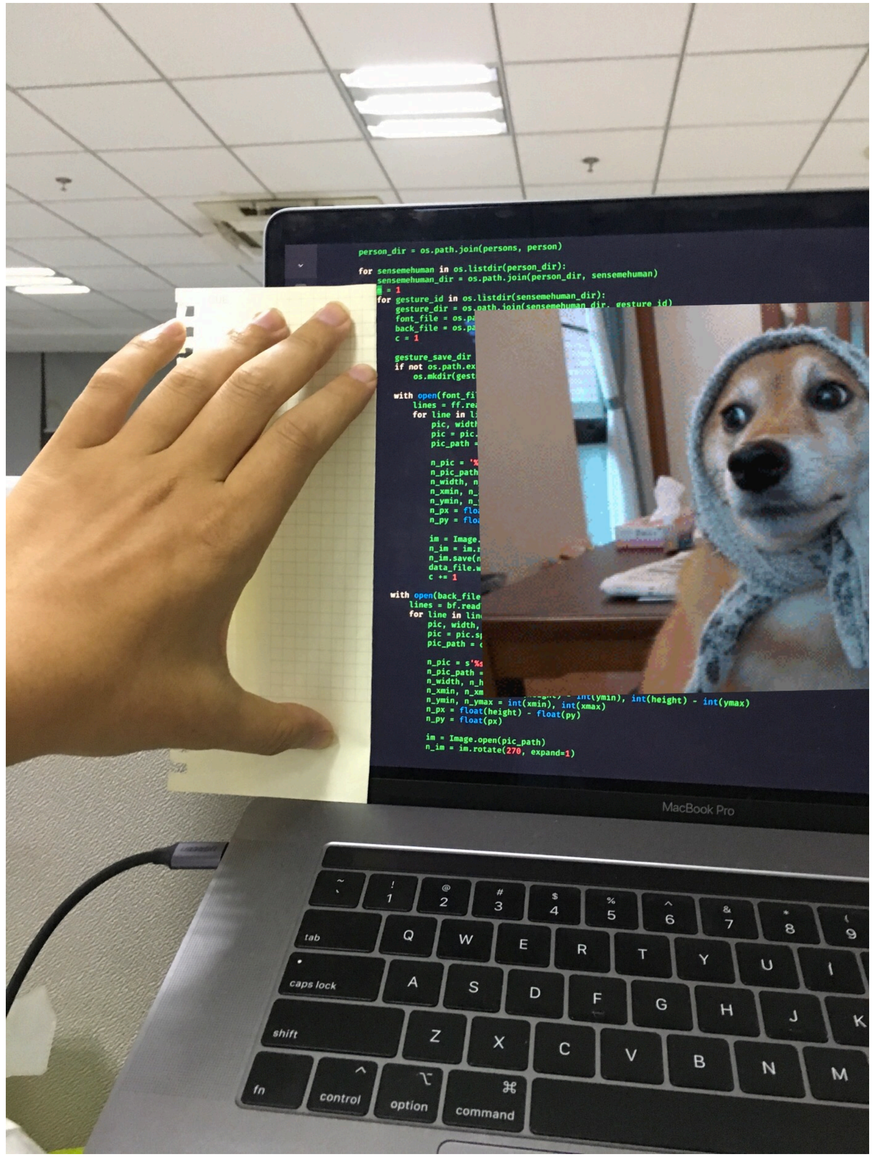
- For CS student:
  - Linux (or other UNIX) is an unavoidable topic during your whole career;
  - CA and OS course require you to use Linux;
  - Many software you will use in your research only have Linux version;
  - Your tools (like Python interpreter) is designed for UNIX — use Linux for better UX and performance;
  - Start early means you will get familiar with Linux earlier — huge advantage for yourself;
- For EE student:
  - Linux (or other UNIX) is unavoidable if you want to have a better taste in CS areas (like some of you will do)

System Setup
Python Interpreter

- **Installation**
  - Windows:
    - Option 1: Use Windows Subsystem of Linux (WSL)
      - Follow instructions in https://docs.microsoft.com/en-us/windows/wsl/install-win10;
      - Then use WSL the same way as a Linux
    - Option 2: Install Python on your Windows machine:
      - Download the setup from https://www.python.org/downloads/windows/ and install it.

System Setup
Editors & IDEs

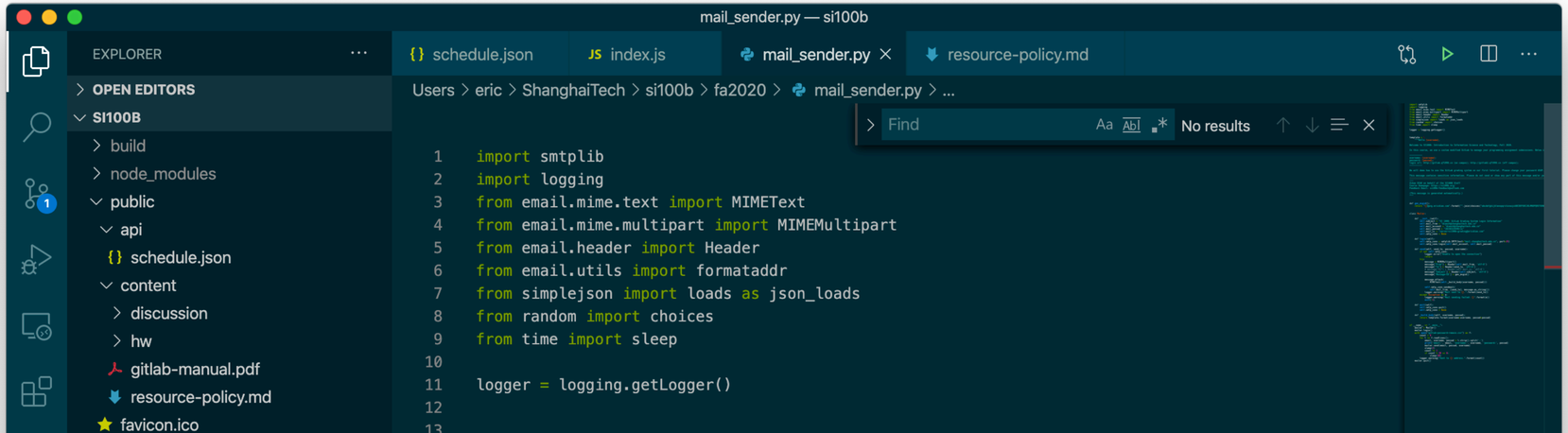
- **Editor or IDE?**
  - Fact: you can use the most basic text editors to write your Python program (e.g., 记事本 on Windows);
  - Modern editors have more functions like syntax highlight than the most basic text editors and remain somewhat lightweight;
  - IDE — Integrated Development Environment — include almost everything you need for a huge project like debugger, build system integration and so on. Thus very heavy;



System Setup

Editors & IDEs

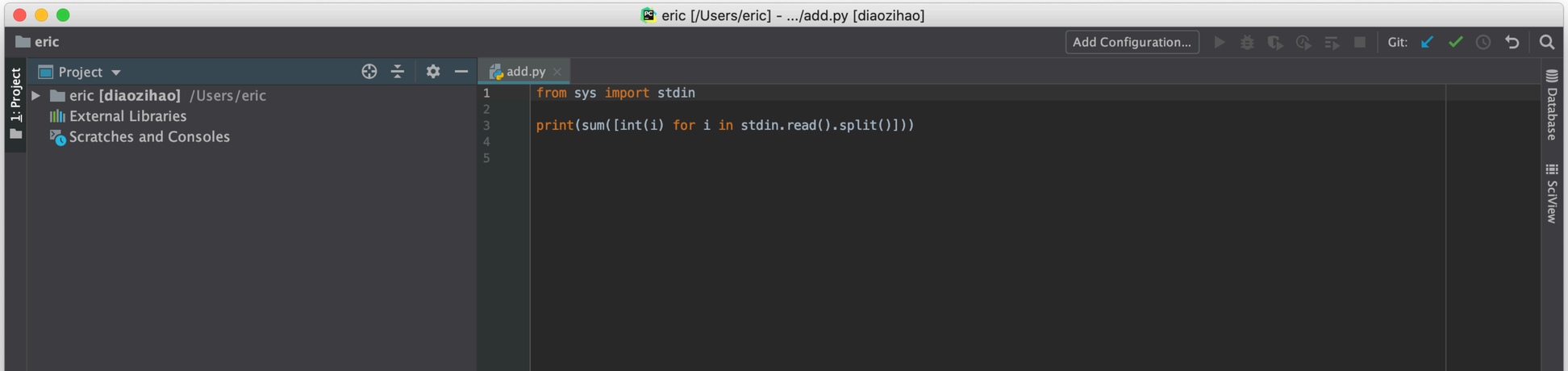
- **If you want to use an editor…**
  - You can use VS Code:
    - Developed by Microsoft, free and (mostly) open source;
    - Have some functions that historically only exists in IDEs while remain somewhat lightweight;
    - Download from https://code.visualstudio.com/ for your platform;
    - Or you can use Sublime, or use `vim` if you are power user.



System Setup

Editors & IDEs

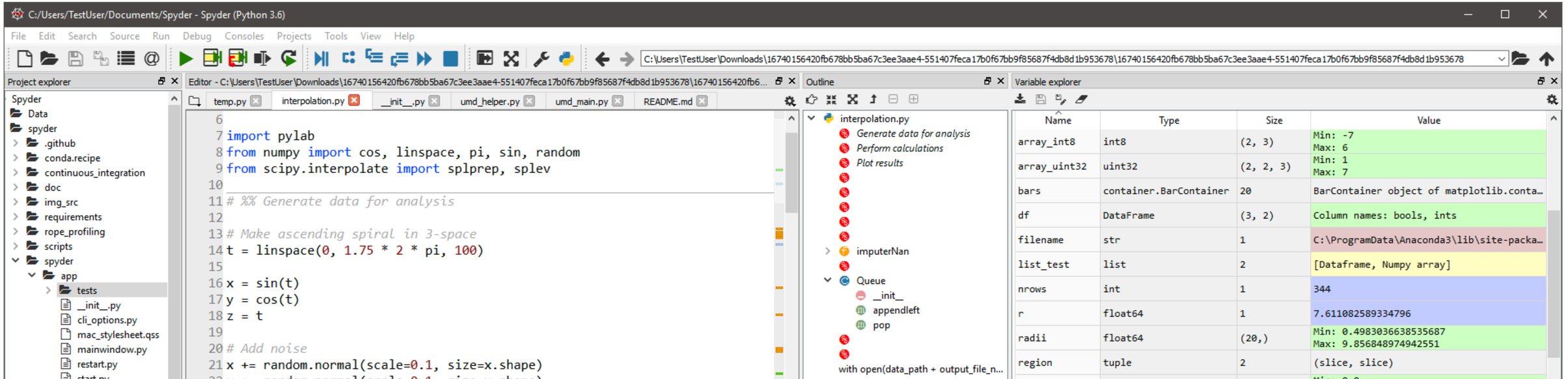
- **If you want to use an IDE…**
  - You can use PyCharm:
    - Developed by JetBrains from Czech, commercial software;
    - Full function Python IDE;
    - Free Community version with limited functions;
    - Could apply for free Professional version with your ShanghaiTech email;
    - Get from https://www.jetbrains.com/pycharm/



System Setup

Editors & IDEs

- **If you want to use an IDE…**
  - Or you can use Spyder:
    - Open source software;
    - Download from https://www.spyder-ide.org/



Basics of UNIX Shells

cd	change directory
mkdir	make directory
mvdir	move directory
rmdir	remove directory
ls	dirs and files in current dir
cp	copy file/dir
mv	move file/dir
rm	delete a file/dir
cat	display a file in terminal
diff	compare differences between files

Basics of UNIX Shells

Demo

Linux Misc.

Use Mirrors

- Many Linux package manager (i.e., *App Store* for Linux) are using website abroad — slow access;
- Solution: Setup local server that periodically download package from those server and let you download from the local server (crude CDN servers);
- Choices:
  - GeekPie Mirrors (on-campus): https://mirrors.geekpie.club/
  - Tsinghua TUNA: https://mirrors.tuna.tsinghua.edu.cn/
  - USTC Mirrors: https://mirrors.ustc.edu.cn/
  - User guide available.

System Setup

Git

- **What is git?**
  - Version control tool;
    - It tracks every lines of code you write and allow you to go back to a history version;
  - Developed by Linus Torvalds - the man behind Linux - in 10 days;
  - **Not** a homework submitting tool:
    - But we will use it for homework submission
  - **Not** a specific service or website:
    - GitHub and GitLab are 2 popular websites that provide git hosting service.

System Setup

Git

- **Installation**
  - **Linux**:
    - Your distro may ship with git, if so use it without effort;
    - Otherwise install it with your package manager.
      - E.g., For Ubuntu Linux: `apt install git`.
  - **macOS**:
    - Open your Terminal.app (终端.app), run `xcode-select —install.`
  - **Windows**:
    - Download the setup from https://git-scm.com/downloads or use WSL (last slide)

Grader Intro.

Basic Info.

- The grader is build upon git;
  - Using git is the only way of submitting your solution code.
- Full manual on the course homepage: https://si100b.org/content/gitlab-manual.pdf;
- Environment: CPython interpreter version 3.7.6 on a `amd64` machine running Ubuntu 16.04 LTS.

Grader Intro.

Regulation

- Usage of the grader is subject to the course code of conduct: https://si100b.org/resource-policy/#policies;
  - Under NO circumstance could you “borrow” your GitLab account out or “lend” other students’ GitLab account;
  - No abuse of the grader.
- 30 chances of grading (i.e. `git tag`) by default, unlimited times of syncing up your local repository with the remote one (i.e. `git push`);
- You have at most 10 chances of grading request in every 24 hour. If you reach the limit, you will not be able to make a grading request.

Grader Intro.

Start

- **Step 1**: Clone the repo from the server;
  - Copy the URL from the grader's website;
  - Clone with `git clone <URL you copied>`;
- **Step 2**: Write and debug your code
  - The specification is in `README.md`

Grader Intro.

Submit

- **Step 1**: Add your modified files to the stage area:
  - Run `git add <files to add>;`
- **Step 2**: Make a local commit:
  - Run `git commit;`
  - Fill in your commit message in the opened text editor;
- **Step 3**: Tag your current commit:
  - Run `git tag <your new tag>;`
- **Step 3**: Push your commit to the grader:
  - Run `git push;`
  - The grader with grade your submission upon a pushed tag to it;

Grader Intro.

Demo

Gradescope Intro.

Demo

Questions?