

Reflection on "Programming with Python", for CDT-ReNU, 30/11/2020

20 students / 1 helper (Cai) and 1 unofficial helper (Ewan)

What worked?

- Most students (all but one) had their systems prepared with the necessary installs: the setup instructions and drop-ins had clearly worked.
- The pace seemed about right. I covered the planned content a little quicker than expected (with half an hour to spare). I asked via an anonymous poll whether the speed was too fast, too slow, or just right. 12 students voted just right, 4 voted too fast.
- In the break there were several good questions: about python syntax (quote marks, underscores)
- Break out rooms via Jitsi seemed to work smoothly enough - students found their break out room and seemed to use them ok.
- The "problem solving" Jitsi was well used and Cai did an excellent job catching some people up - I was very pleased to have had a pre workshop discussion with him
- The etherpad was used for questions and somewhat for notes.
- Students were more willing to share their screen and give explanations to the task when they had been working in pairs.
- One student didn't have a chrome book so I setup an empty notebook using the "Binder" service. She accessed this through her web browser - good solution it seems.

What didn't work?

- There was not the same level of interaction as in an in-person class. For the first 1.5 hours (before the break) I was pretty much the only person who had talked! (though SW Carpentry lessons do tend to be teacher-heavy from the style of teaching). Online there is less chance for unplanned informal interactions, it needs to be planned in more explicitly.
- Teams doesn't have some useful features: blackboard next time?
 - It doesn't have break out rooms for pairs tasks (disabled in the Northumbria version for some reason). Instead I used Jitsi (see above).
 - You can't "freeze screen" during presentations. This was really annoying. It meant I was juggling multiple versions of tabs.
- Not all of the registered participants seemed to be actively taking part. There were 20 people in the call but ~14 seemed to be voting, fewer still giving "thumbs up" when asked. Perhaps use the Teams "Together" mode?
- I found not being able to sketch things real time restrictive. Ideally there would be an ipad+pencil setup so that I can sketch and explain? Or perhaps a web-cam centred on a piece of paper for the lower-tech version?
- I kept on messing up my screenshare / mute / unmute options.

- during the second day people were having problems that indicated they hadn't really understood the points I was making. Not closing brackets, or closing speech marks. Not understanding the dot notation for method calls.

Next time?

- Definitely include more A-board work next time: explaining what a method is (with brackets), how this differs from a variable (without brackets). The second session felt a bit "just copy me" rather than "understand what we are doing". If doing this online, I will need an ipad and pen, or similar.
- emphasise in the variable names section to not choose a name that clashes with an in-built function. For examples, someone used "list" for a list which makes perfect sense, but caused problems later on
- have quick cheat-sheets for people to refer to if they are stuck (one suggestion was a notebook with comments in it - this could be hosted on binder for instance)
- change the names of the files, so that there is no confusion on filename (all lower case, no underscores or dashes - something like "datafile.csv")
- change the binder repo so that the data is in desktop and everyone can follow along.
- reduce the "cleaning data" section, this took up too much time. Include an additional slide with the dataframe on it, and the changes I'd like to do to clean it up. Include an additional slide on slicing data frames (including the index=0, index=1 that is used in the next section)
- include an additional task at the end: writing a function that takes a dataframe and produces a plot, with the user specifying whether it is a "max", "min" or "average" plot.
- I need to update the website - at the moment it has the old numpy stuff on it.
- Try and get all the building blocks done in the first day (up to and including variable scope). Then libraries and plotting in the second day.
- Make it very clear in any communication that this is an **absolute beginners** course, so it's sets appropriate expectations.
- Emphasise that typos often cause problems - double and triple check filenames.
- I think I need to discuss methods (in the first half of the workshop) more clearly next time.

Yongtao Feedback

YQ: I liked the interactive activities, and will adapt the strategies you used for future teaching. LW: Vote or the pair activity? YQ: Voting was a better approach as not interaction with the other person in my pair. I think this is because I am a staff member. (LW: note that this is something else lost moving to online teaching. Can't take the visual cues from people - who is shy, who is outgoing, who is a good person to pair with a staff member?) YQ: The highlight for me was the interactive elements.

YQ: Because there were two screens, one with your typing and one with my code, I sometimes missed important information. YQ: Do more repetitions of the important information. YQ: More summary of the knowledge after the task. Why we did the task and what was the knowledge point. Repetition of the point.

YQ: Do more summarising - at the start of the second section, summarise previous day esp. what will be used again.

YQ: Timing - split into 2*2hour each day. RENU: 10-12, 2-4 . Especially for online, need to focus for four hours and it is difficult when online.

YQ: Perhaps record the teaching next time. Use Panopto or similar. At the university all teaching is recorded.

YQ: Etherpad was good as all the information was in one place. Jitsi easy as a single click.

YQ: knowledge was in pieces rather than linked together

(LW: Some of this might be because of the move to online. Whiteboard is missing and that is why didn't have so much summary information. I also didn't have the opportunity to sketch out ideas and link it all together.)

YQ: Really useful training for the students students and me.