How to collaborate on a computing project

The first step is to make sure that you have a shared drive that is accessible to all members of your team, for example by creating a shared folder on Onedrive. Then create your Jupyter notebook for the project, and edit it. A key issue is **version control**, i.e. that there is only one current version of the project (and not, say, five different branches that five different people are working on). At the same time, you will want to keep the previous versions of the notebook, so that potentially important pieces are not overwritten or lost and you can always undo changes that were a mistake.

The simplest (though not the most efficient) form of version control is to save a copy of the Jupyter notebook with the current date and your name each time you make an edit, and to always, always start from the most recently modified file.

A second very important point: the projects generally start from a basic idea and then develop this through several stages. It is crucial that you do the beginning pieces first. It is also crucial that you work on **one** version of it **together**. For example, to figure out energy conservation in planetary motion, you need to have a working integrator of the four ODEs first, etc. Please do not try to develop pieces of the project individually and then merge them, as this is almost impossible to do due people's different choices for the structure of the code. You should begin by having an online group meeting where you work through the project and set up the code structure, followed by regular meetings.

Setting up python on your own computer.

For collaboration using a shared folder on oneDrive you will need to use Python and Jupyter either on a workstation in the Computer Lab or on your own computer. In order to use your own computer for this we recommend that you install the appropriate version of the Anaconda package manager from: https://docs.anaconda.com/anaconda/install/ . Once set up, run Anaconda Navigator. From there launch Jupyter Notebook of Jupyter Lab.

Alternative ways of collaborating on a computing project

- **GitHub** If you are keen to explore more formal options for working on a coding project as a team, please consider using the **git software**, and optionally the github online code sharing platform (https://github.com/).
- **Noteable** provides an option for collaborative editing. Instructions for this can be found here: https://noteable.edina.ac.uk/documentation/collab-editing/. However (as noted in the instructions) "When inviting someone to collaboratively edit a notebook, you are bypassing all other login/authentication processes, and inviting them to access your personal workspace." Moreover access to the shared file(s) is revoked when the person sharing shuts down their server. So, although this is an option we do not recommend using Noteable for collaboration at present.