Software setup for ASA

1 General considerations

For the assignments in this course, you will need to use certain software in your own computers. This is a guide on what they are and how to install such software. We recommend you make sure the software is installed before the first practical. We want to take a moment to highlight how working on a Unix system (Linux or Mac) makes your life so much easier in bioinformatics. If you choose to stick to Windows, that's also ok, but we will be able to help you troubleshooting to a very limited extent.

2 Anaconda and Python 3

Anaconda is a Python platform for science with a free distribution that contains most packages you will ever use for research. Some of its more well-known packages are NumPy, SciPy, matplotlib and pandas, but there are many more. You can download these packages separately, so in most cases there is no need to install the distribution. Nevertheless **we strongly recommend Windows users to install Anaconda for Python 3**, since installing these packages individually on Windows usually requires more effort than on Unix systems.

To learn more about Anaconda distribution go to `https://www.anaconda.com/distribution/` and if you want to download it, click on the "Download" button and select the Python 3 version. The distribution is installed as any other program would be installed in your OS. **Very important for Windows users: please remember the click select "Add Anaconda to my PATH environment variable" during installation**. If you miss it you can still add conda and python3 to your path manually, but Google will help you with that.

To check if Python 3 in installed in your system write `python3 --version` in your terminal. If you need to install it, you can either install the Anaconda distribution or do the following:

2.1 Python 3 installation

2.1.1 Linux

```
sudo apt install python3
```
And also pretty useful to have to install new packages if you don't use anaconda:
```
sudo apt install python3-pip
```

2.1.2 Mac

```
brew install python3
```
pip should be installed if you install python 3 with Homebrew.

2.1.3 Windows

Simply install Anaconda for Python 3.

3 IDE (Integrated development environment)

An IDE is an application that helps programmers write code more easily. You probably don't want to write any script over 10 lines without one of these, since it makes programming so much easier. An IDE usually features such as coloring of the code, management of variable, auto-complete, debugging... And many more.

There are many IDEs for Python and every person has their favorite, so it's up to you to explore which one you like the most. Some of the most popular ones are PyCharm, Sublime Text or Atom. They have different features and it's a matter of personal choice to choose one, but for instance, PyCharm has a simple Git integration, can easily install packages for you and has a detailed debugger feature, whereas Sublime Text has an auto-complete that feels magical and it's more versatile to explore other types of files, such as `.csv` files without requiring to install plug-ins.

Explore their websites and get to know your IDE:

- PyCharm `https://www.jetbrains.com/pycharm/` Students get pro version for free
- Sublime Text `https://www.sublimetext.com/3` Never-ending trial version
- ATOM `https://atom.io/` Open source, highly customizable