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 README.md

Ubuntu Installation


Instructions

Today, we will install everything you need for the program. Follow carefully the steps below.

Basics

First, let's install some required packages (such as zsh, git, etc.):

```
sudo apt update
sudo apt install -y make git zsh curl vim wget xclip
```

 **Hint:** `sudo` is a prefix for running a command as `root` (admin), so you don't have permission issues

Oh-my-zsh

Previously, you just installed a new improved shell `zsh` (that will replace the per default `bash`).

We install `oh-my-zsh` in order to improve it even more (it comes with lot of features, such as intuitive color, code alias, autocompletion, etc.).

To install `oh-my-zsh` , run the following command:

```
sh -c "$(curl -fsSL https://raw.githubusercontent.com/robbyrussell/oh-my-zsh/master/tools/install.sh)"
```

Now quit the terminal (`CTRL + D` on Ubuntu) and relaunch it.

Ressources: [oh-my-zsh Cheatsheet](#)


Github

Go to the [GitHub](#) homepage with your favorite browser (we recommend Firefox).

You will now need to generate SSH keys (in order to safely link your computer to your GitHub account).

Open a terminal and run this command (you need to replace the email with the one you used to create your GitHub account). It should ask you to enter a passphrase.

```
mkdir -p ~/.ssh && ssh-keygen -t rsa -b 4096 -f ~/.ssh/id_rsa -C "your_email@example.com"
```

Enter a password (and remember it ) , it will protect your private key. **It's normal** that nothing appears on the screen while you type. Finish by pressing Enter and you're done.

You can now verify that all went well. This command should display your private key: a long string starting by "ssh-rsa" and finishing with your email address.

 **Hint** In your `~/.ssh` directory you should have 2 files:

- `id_rsa` : This is your **private key**. It **MUST BE KEPT STRICTLY PRIVATE**. Never share it to anyone or any services!
- `id_rsa.pub` : This is your **public key**. It is paired with the 1st one, and this is the one you copy paste when authorizing your computer. For example now we are going to upload it into Github.

Now let's add pair our computer to our Github account by copy pasting our public key. Run:

```
cat < ~/.ssh/id_rsa.pub
```

Then copy the result and go paste it into this page: <https://github.com/settings/ssh/new> . To add your SSH key:

- Click on `Add SSH key`
 - Title: Your Computer Name
 - Key: CTRL + V (Paste key that you just copied)
- Confirm by clicking on the `Add key` green button

Check that the connection with github is now effective. Run:

```
ssh -T git@github.com
```

You should be aksed if you want to trust the host `github.com` . Write `yes` , and press Enter. You should then see:

```
Hi {YOUR_GITHUB_USERNAME}! You've successfully authenticated, but GitHub does not provide shell access
```

You're done with GitHub pairing, let's continue.

Python (with Anaconda)

Python is the main software language you will learn in this program. In order to run Python code, you need to install a Python distribution (you can have several).

Anaconda is a software that makes it easy to install and manage Python distribution(s) and also useful Python libraries for Data Science (ex: `Scikit-Learn` , `Pandas` , `Matplotlib` , etc.).

Install Anaconda by running these commands:

```
wget https://repo.anaconda.com/archive/Anaconda3-5.3.0-Linux-x86_64.sh -O ~/anaconda.sh
mkdir ~/bin
bash ~/anaconda.sh -b -p $HOME/bin/anaconda
rm ~/anaconda.sh
echo "export PATH=\"$HOME/bin/anaconda/bin:$PATH\"" >> ~/.zshrc
```

Now restart your terminal, and launch a Python console:

```
python
```

Does it work properly? The first line should mention `Anaconda, Inc.` .

You can now exit the Python console (enter `exit()` or press `CTRL + D`)

Resources: [useful Conda cheatsheet](#) summing up most useful commands for Conda

In this program, you will learn a lot about coding.

So you need a proper code text editor to write clear and concise code.

You have many options in terms of text editors (or IDE), we choose [Atom](#) because it's free, open source, very popular and you can tune with various plugins/packages.

This will allow you to become more productive and efficient (ex: automated code completion, highlighting syntax errors, connection with git, etc.).

Download [Atom](#) (the .deb version) and, extract and install it. You can now open it.

If you want to open a complete directory in Atom from the command line you can run:

```
atom /path/to/your/directory
```

For better convenience, install the plugin [Platformio-IDE-Terminal](#) for adding live terminal in Atom:

```
apm install platformio-ide-terminal
```

Vivadata Repository

Now that you have installed every tools you need, you can **clone** the repository (download it to your computer).

To do so, in the terminal go to an appropriate folder where you want to store it and run:

```
git clone git@github.com:vivadata/vivadata-student.git
```

Add the following remotes:

```
git remote add upstream git@github.com:vivadata/vivadata-student.git
git remote add origin git@github.com:YOUR_GITHUB_USERNAME/vivadata-student.git
```

Then move to this newly created directory:

```
cd vivadata-student
```

Finish line

Congratulations! You're all set! If you didn't succeed installing the various required softwares, don't hesitate to ask teachers for help.

Good luck!