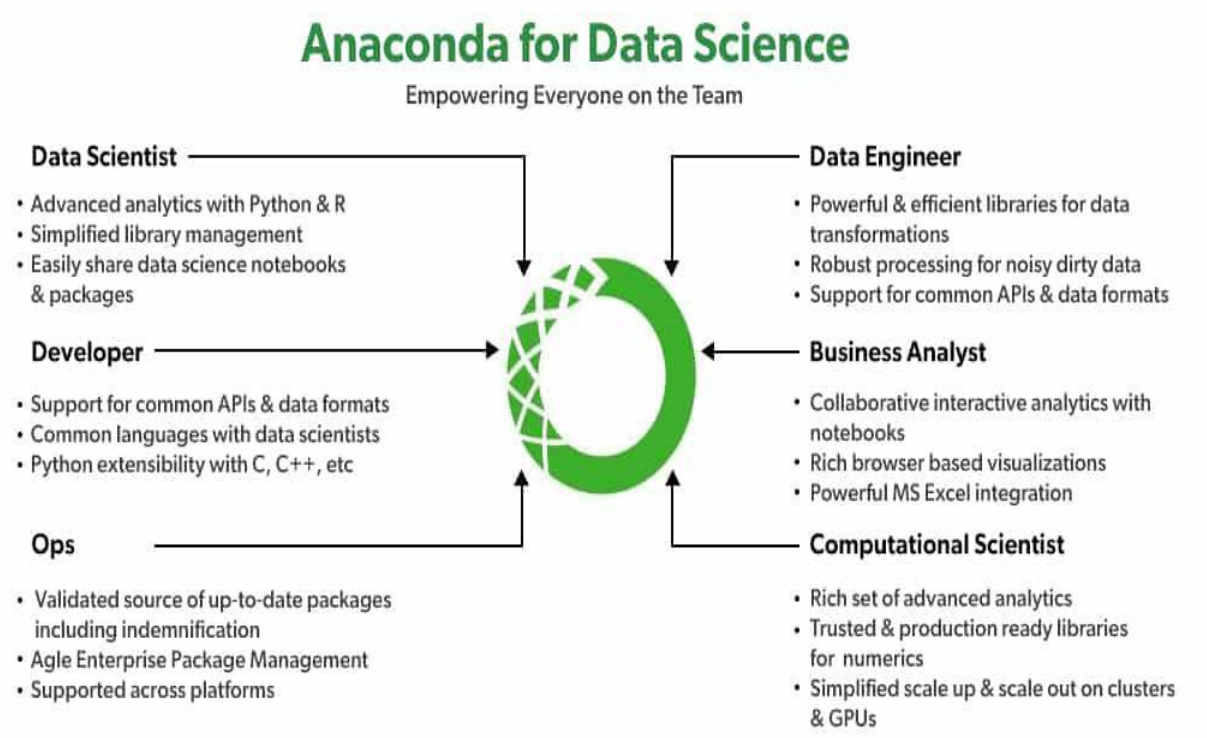
How to Setup Anaconda For Data Science?

Why Anaconda for Data Science?

Here are some important reasons why you should choose Anaconda for your next Data Science project:

- Ease of **Installation**,
- More than **1000** data science packages are available,
- Anaconda installs the latest Python 2 or 3 version in an isolated and activated environment so any installed Python version doesn't cause any issues for your projects,
- It's **noob-friendly!!** Yes, You don't need any prior coding/programming knowledge about the usual nerdy stuff that scares noobs away.



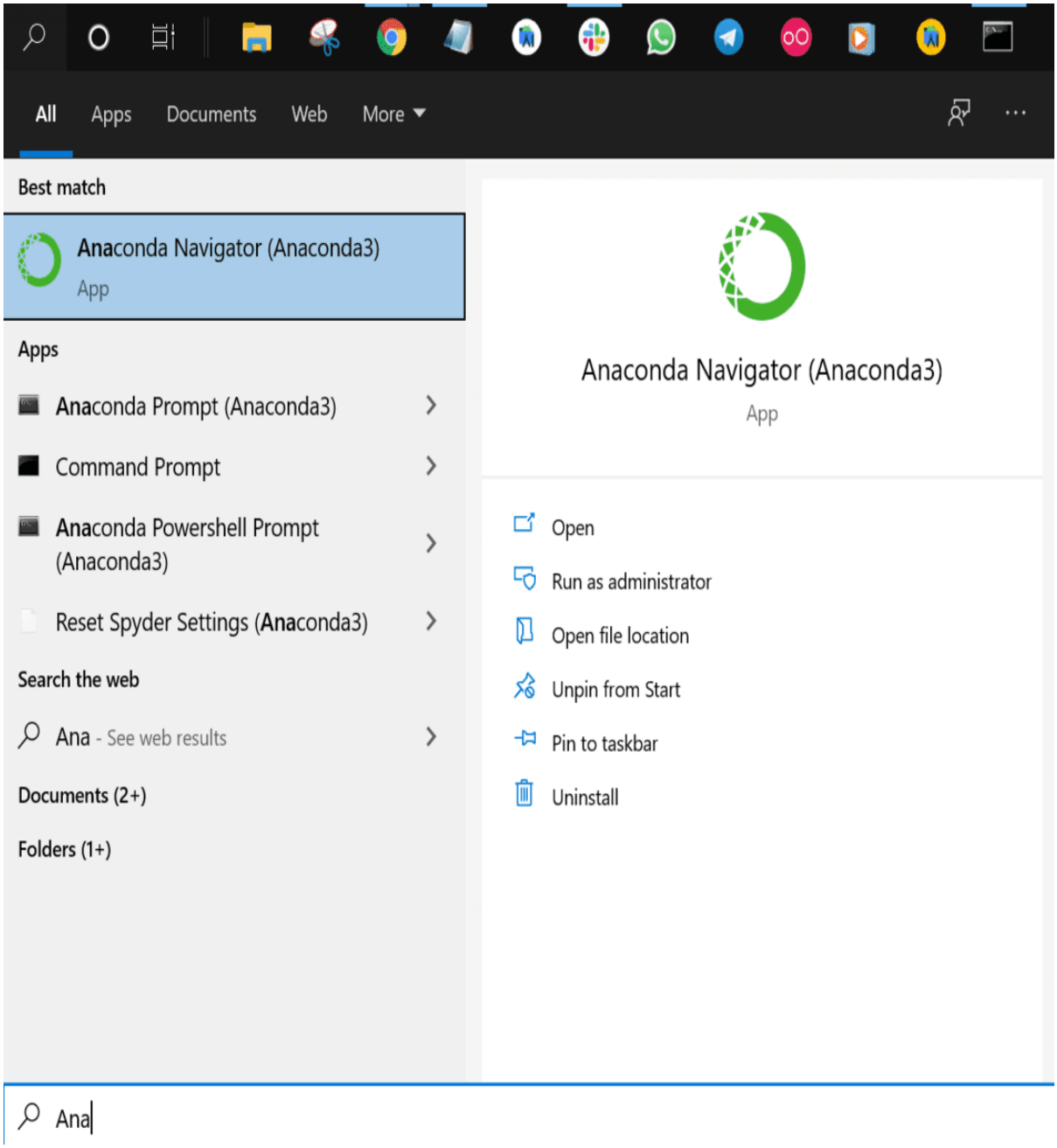
Installation Process

- To install Anaconda on Windows please refer to How to install Anaconda on Windows?
- To install Anaconda on Linux please refer to How to install Anaconda on Linux?

After successfully completing the installation process you are here now, the **Anaconda Navigator**.

Anaconda Navigator

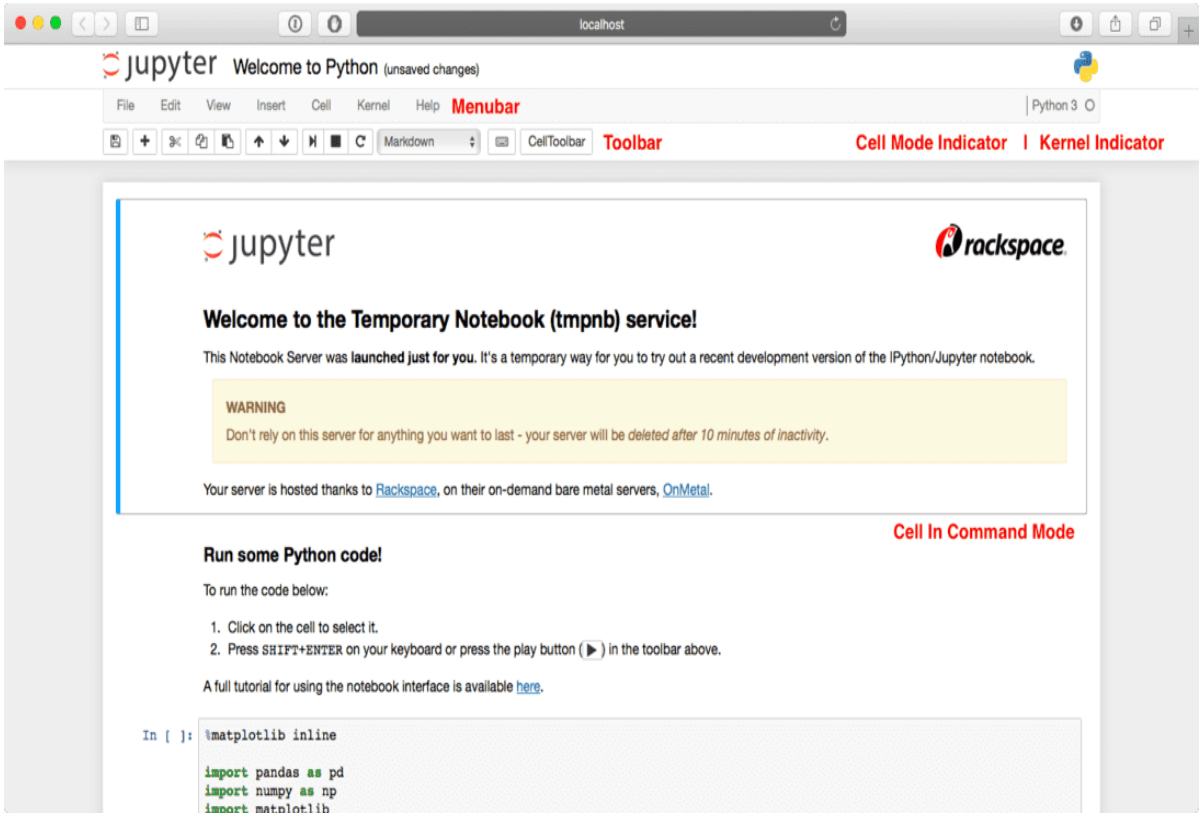
Anaconda Navigator is a graphical UI that is automatically installed with Anaconda. Navigator will open if the installation was successful. For Windows users, click Start, search, or select Anaconda Navigator from the menu as shown in the below image:



Anaconda Navigator contains lots of stuff inside it. So let's understand which stuff we need for our next data science project.

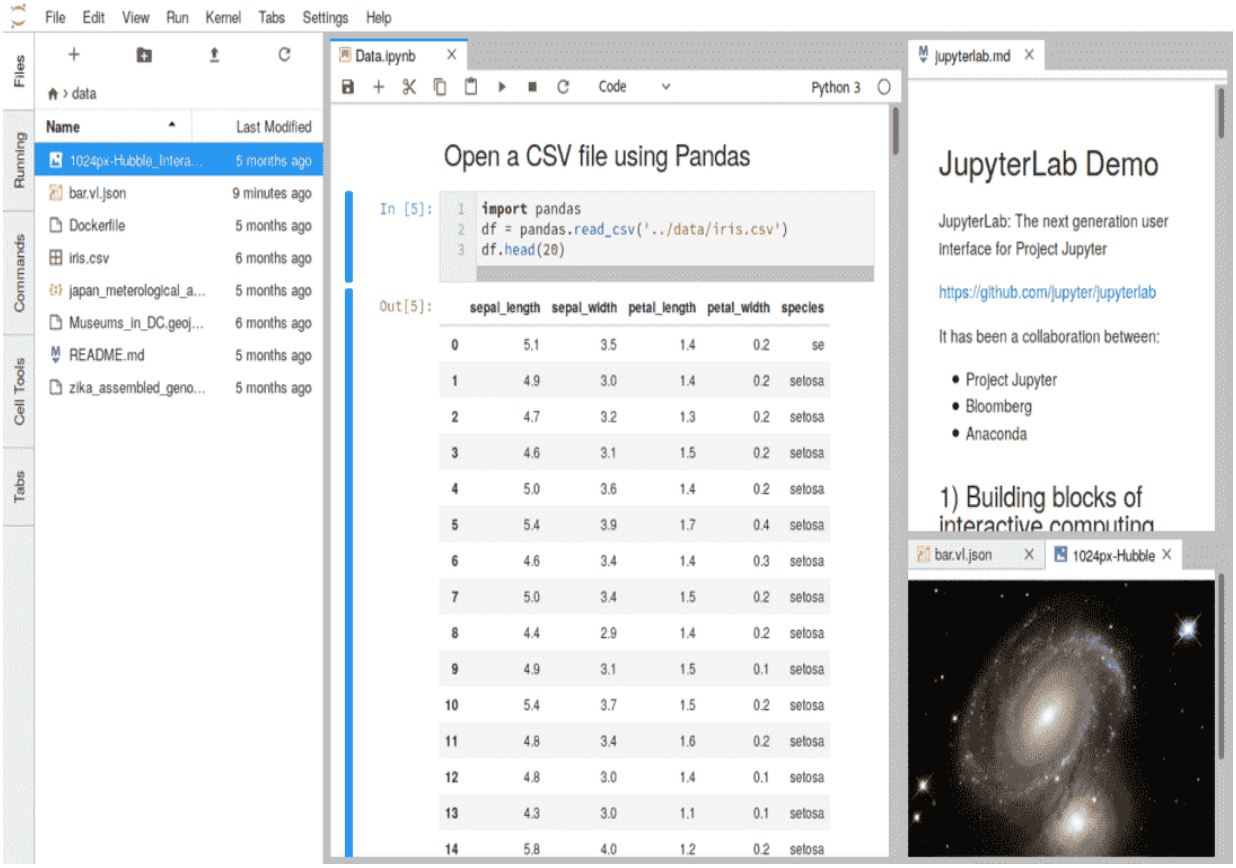
1. Jupyter Notebook

Jupyter Notebook is a web-based, interactive competing notebook environment. You can edit and run human-readable docs while describing the data analysis. The Jupyter Notebook is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations, and narrative text. Uses include data cleaning and transformation, numerical simulation, statistical modeling, data visualization, machine learning, and much more. Below is a demo image to demonstrate how Jupyter Notebook UI looks like:



2. JupyterLab

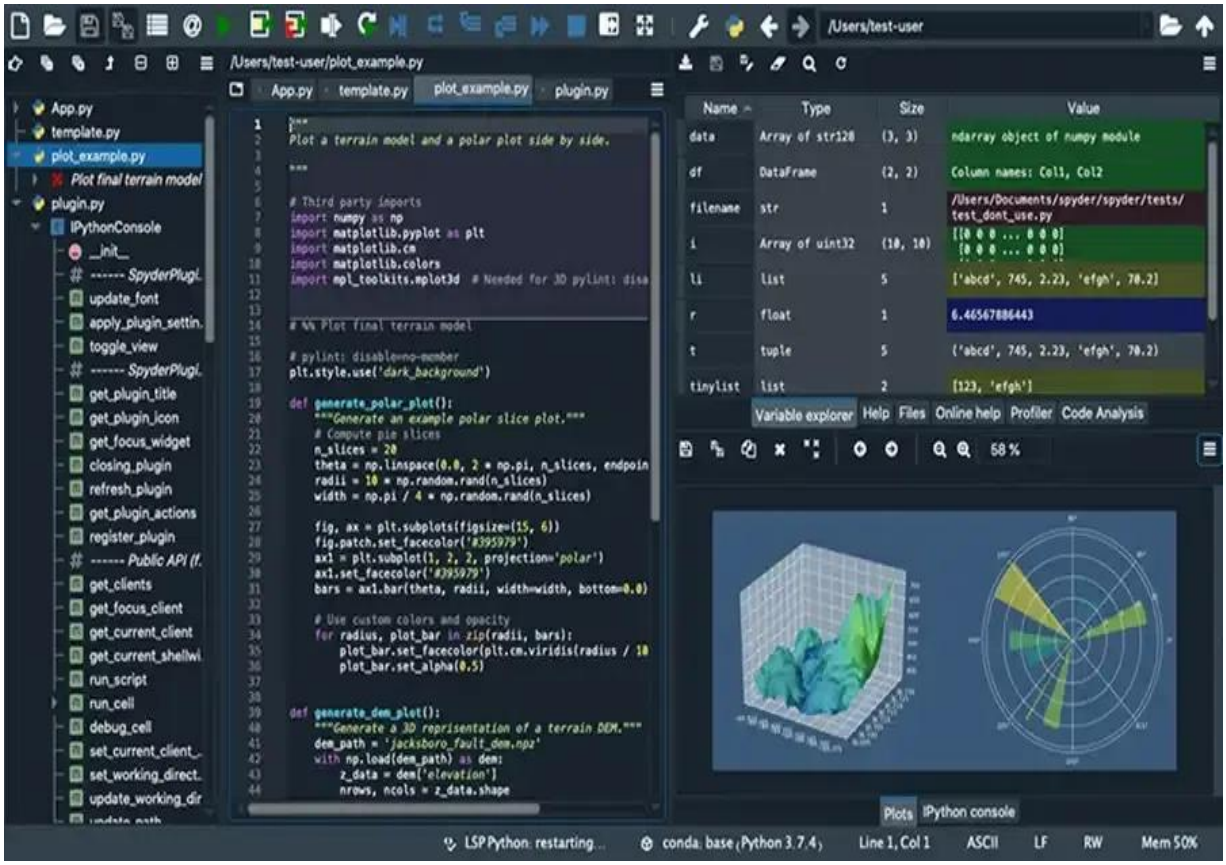
It's an extensible environment for interactive and reproducible computing, based on the Jupyter Notebook and Architecture. JupyterLab enables to work with documents and activities such as Jupyter notebooks, text editors, terminals, and custom components in a flexible, integrated, and extensible manner. Below is a demo image to demonstrate how JupyterLab UI looks like:



Jupyterlab in anaconda

3. Spyder

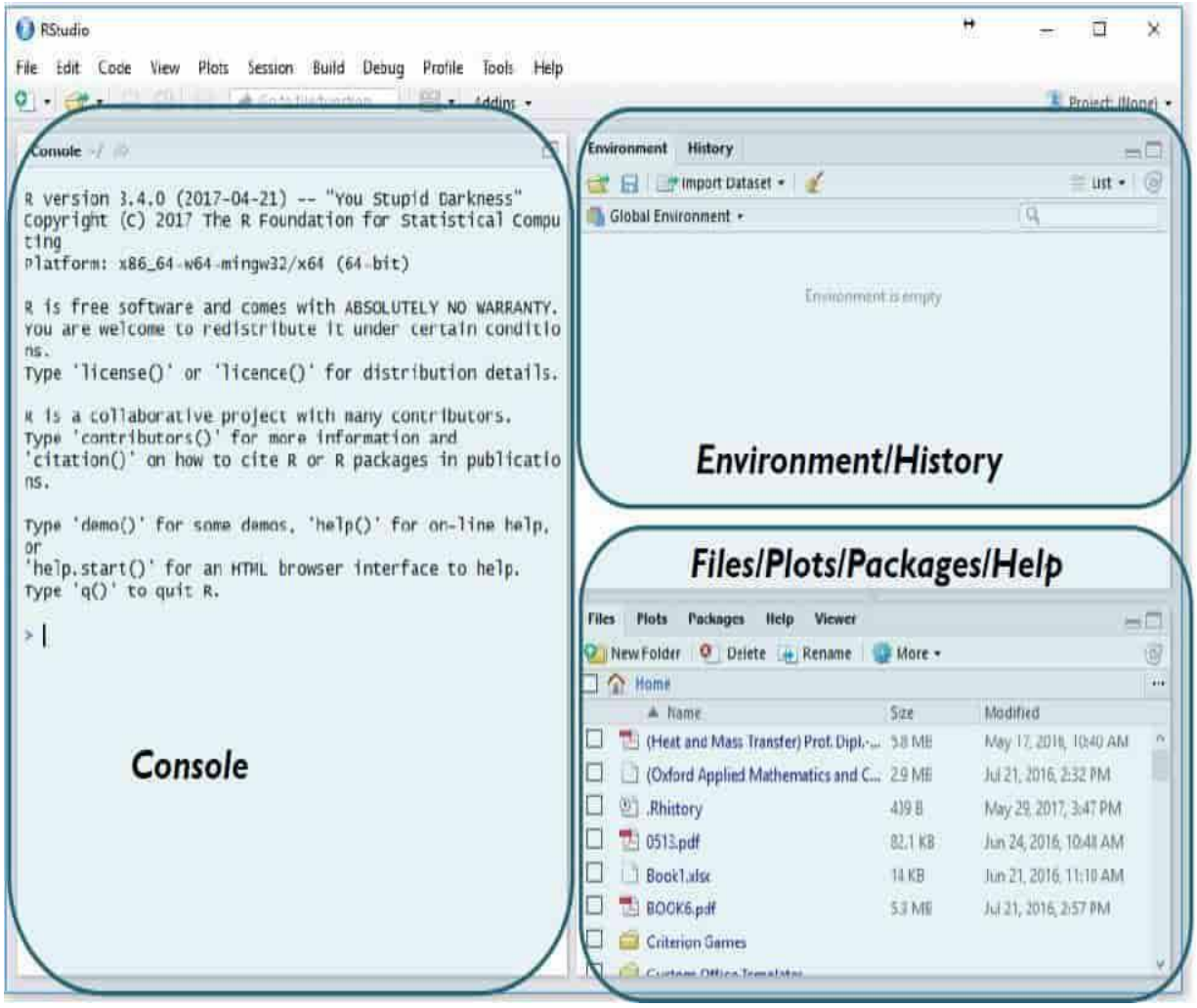
One of the most important and powerful Python IDE is Spyder. Spyder is another good open-source and cross-platform IDE written in Python. It is also called Scientific Python Development IDE, and it is the most lightweight IDE for Python. It is mainly used by data scientists who can integrate with Matplotlib, SciPy, NumPy, Pandas, Cython, IPython, SymPy, and other open-source software. Below is a demo image to demonstrate how Spyder UI looks like:



Spyder in Anaconda

4. RStudio

When it comes to the data science world then Python and R are the two most programming languages that come into our minds. R Studio is an integrated development environment(IDE) for the R programming language. It provides literate programming tools, which basically allow the use of R scripts, outputs, text, and images in reports, Word documents, and even an HTML files. Below is a demo image to demonstrate how RStudio UI looks like:



R Studio in Anaconda lab

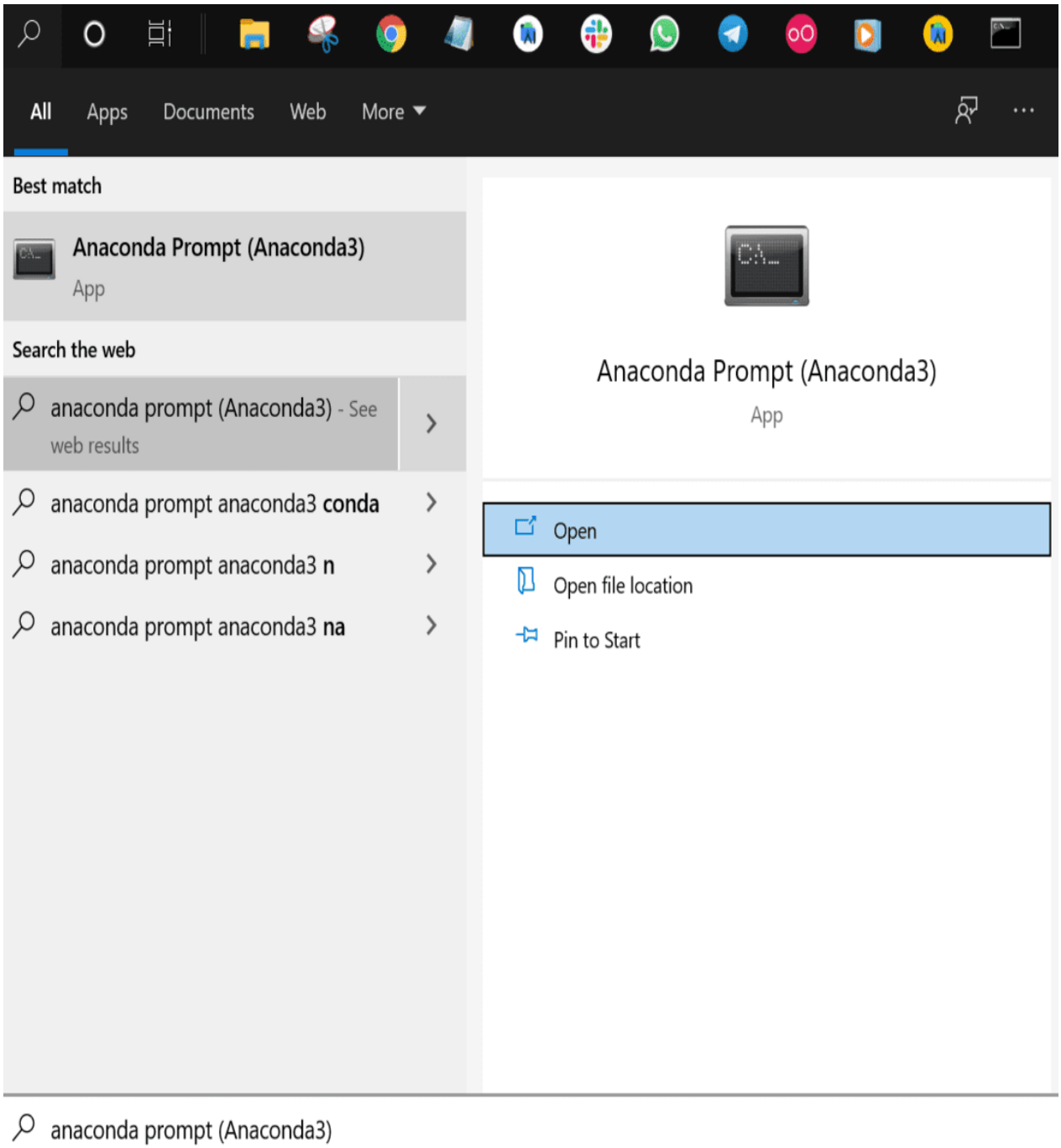
For more detail please refer to: Introduction to R Studio

Apart from these 4 important environments there also some other environments which are very useful for the data science project. Let's discuss them in brief.

1. **Datalore:** Datalore is an online data analysis tool with smart coding assistance by Jetbrains. One can edit and run the Python notebooks in the cloud and share them with the team.
2. **Glueviz:** Glueviz is a multidimensional data visualization across files. It is a Python library to explore relationships within and among related datasets.
3. **Orange 3:** Orange 3 is a component-based data mining framework. It is a powerful platform to perform data analysis and visualization, see data flow, and become more productive.
4. **IBM Watson Studio Cloud:** IBM Watson Studio Cloud provides the tools to analyze and visualize data, cleanse and shape data, to create and train machine learning models. Prepare data and build models, using open-source data science tools or visualize modeling.

Conda

If you prefer using a command-line interface (CLI), you can use **conda** to verify the installation using Anaconda Prompt on Windows or a terminal on Linux and macOS. To open Anaconda Prompt in Windows: Click Start, search, or select Anaconda Prompt from the menu.



Anaconda prompt in window

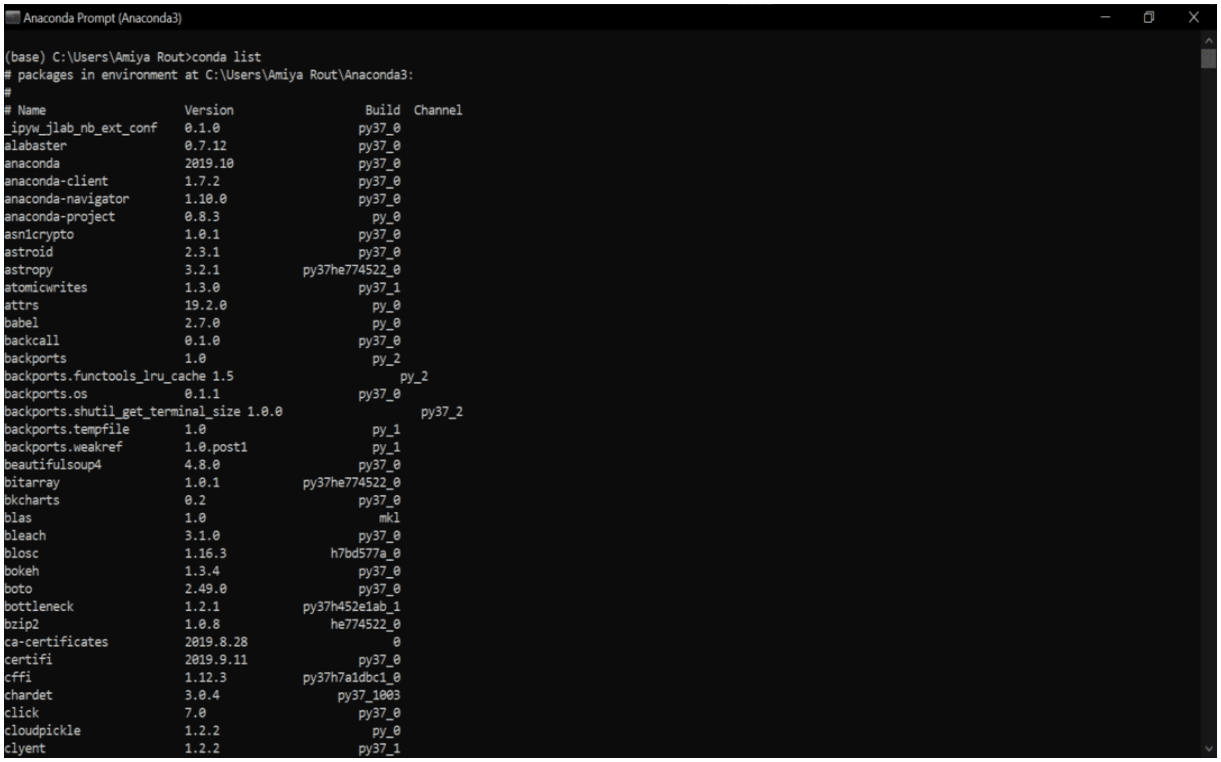
Once you lunch the prompt you will notice that the terminal now has (base) written in front of the computer name. It means that your base conda environment is set (meaning you're working globally for the whole user and not a specific environment).

Now let’s discuss some useful commands

1. View installed packages

To view all the installed packages please type the command as follows:

```
conda list
```

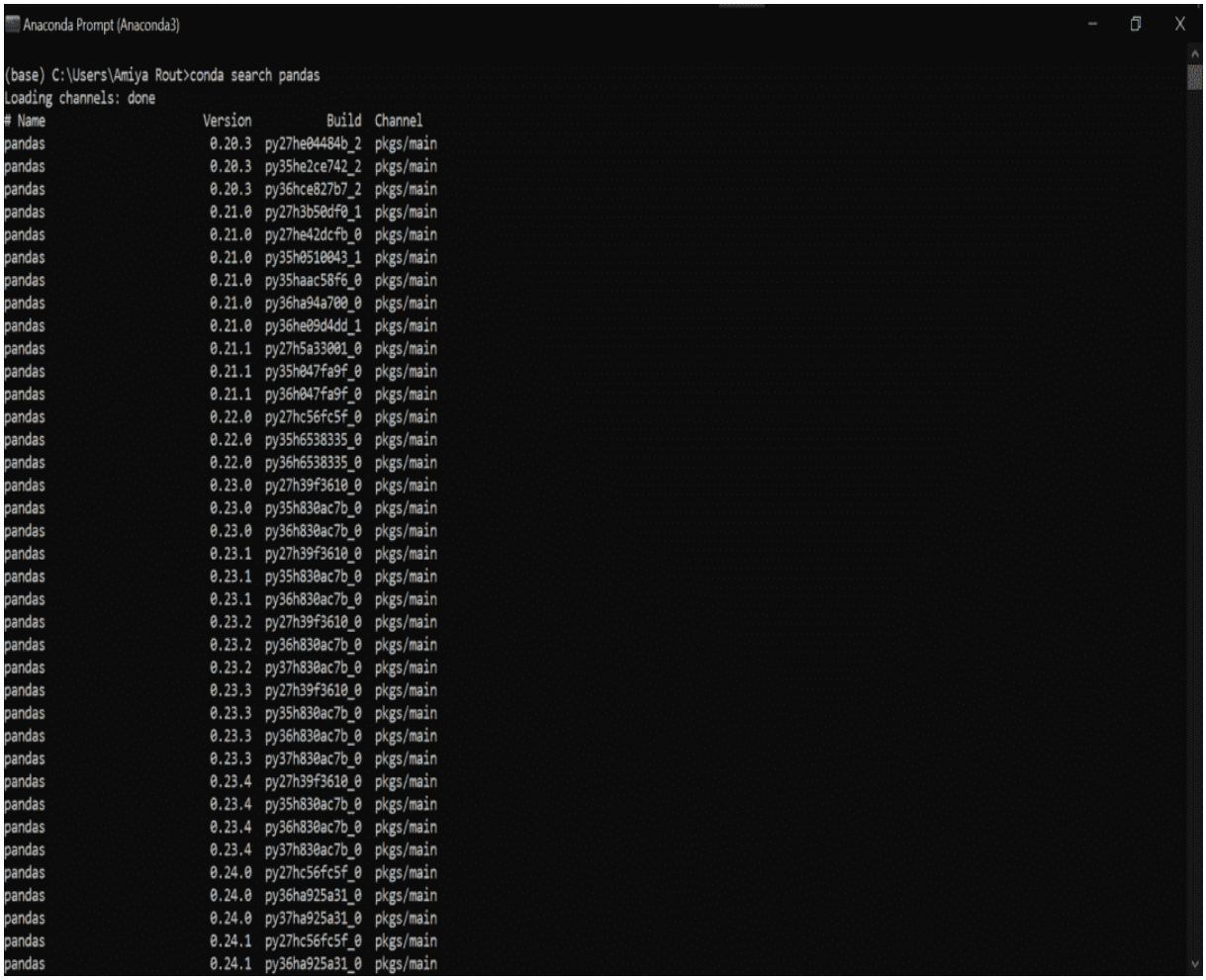


list of files in anaconda

2. Search and install a package

Let’s say the user wants to install **pandas** but he/she does not know the version. The user can use the following command to search for its versions:

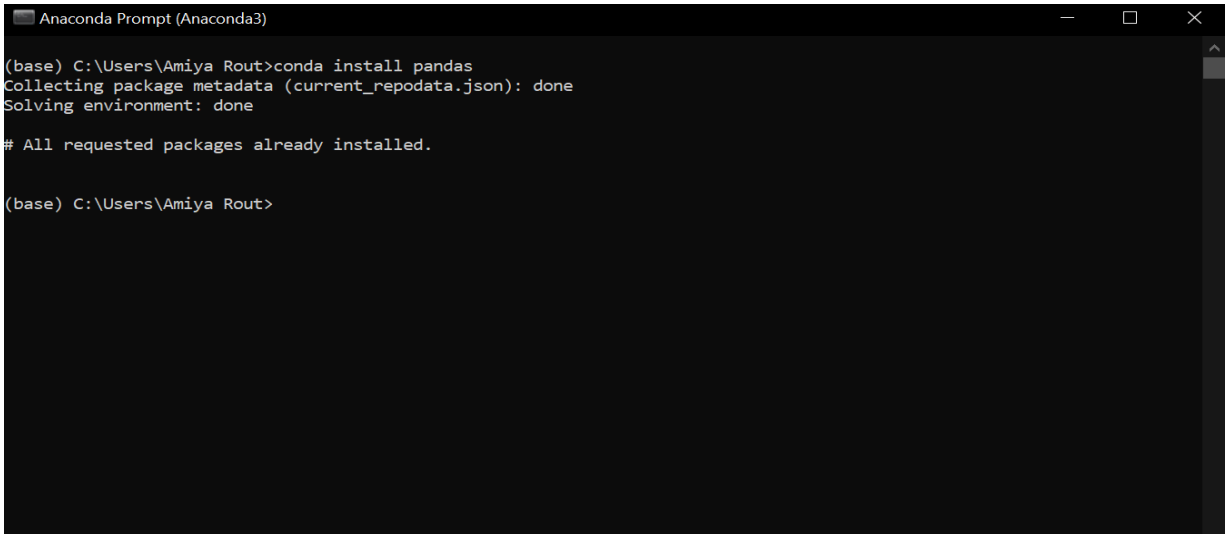
```
conda search pandas
```



pandas in anaconda

To install a package type the following command

```
conda install pandas
```



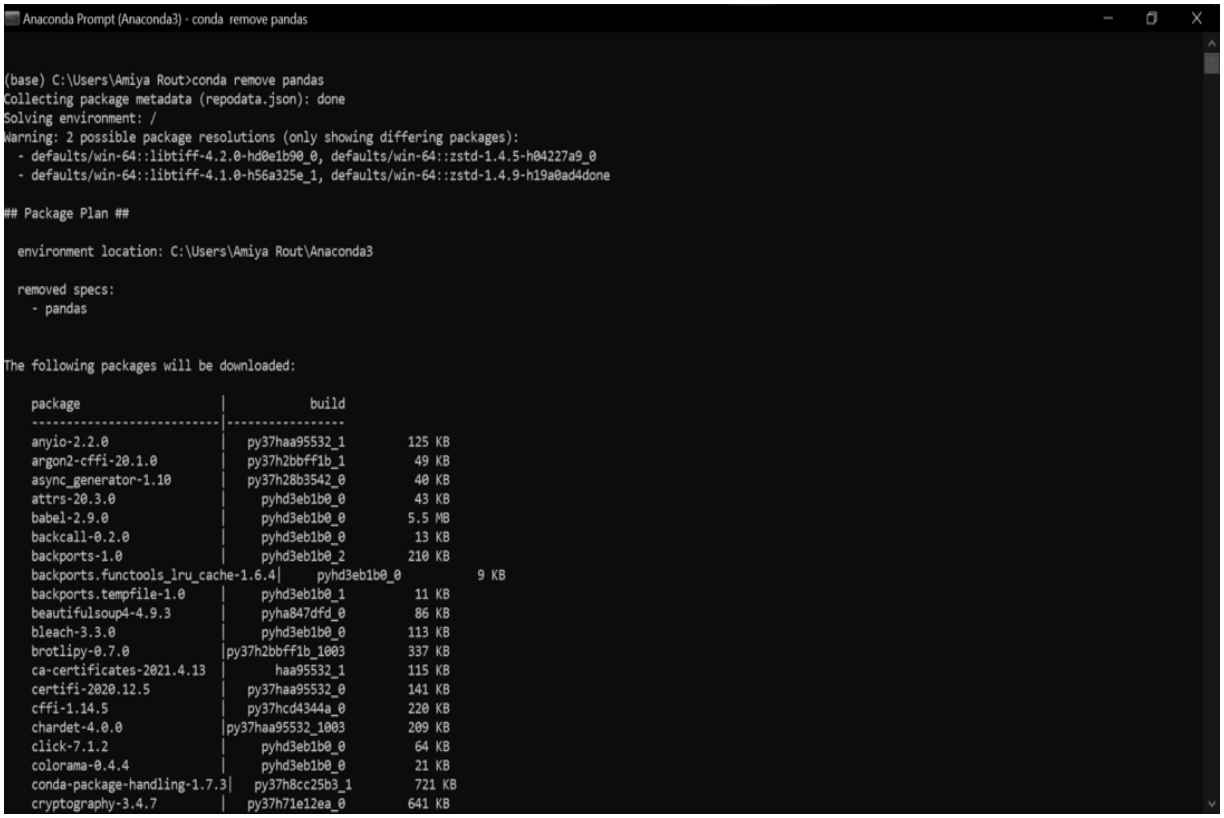
And the user wants to install **pandas with version 1.2.4** then use the following command to do so:

```
conda install pandas==1.2.4
```

3. Remove package

To remove the package please type the command as follows:

```
conda remove pandas
```



Conda Remoe in Anaconda