Analytical tools with Python:

/\*\*\*\*This Document sums up the most important tools (Language, Module etc..) that can be used to perform analysis on data \*\*\*/

These are a list of tools and their applications in machine learning and data analytics

* **NumPy:** this is a library (tools) that can be used to easily perform almost every operation you can on matrices (1 and multidimensional matrices) beware! It does not provide plotting functions for that you will need matplotlib
* **SciPy**: it is a library that can be used to perform scientifically and mathematical work like, differential equations, optimization, sparse matrix, integral computing etc.… beware! It does not provide plotting functions for that you will need matplotlib
* **Matplotlib:** this is a library to produce high quality plots they are many other choose one and stick to it of course you can explore others but why it can become very confusing.
* **Jupyter Notebook:** This is an interactive kernel backed up by IPython with the advantage of an IDE in the sense that it provides additional features than just executing commands
  + File management.
  + Language version management.
  + Interactive computing and testing.
  + Coding, testing and optimizing on the fly.
  + Collaboration is very easy if you send your file to a colleague he can directly work on it and test it.
* **Nbviewer (**[**https://nbviewer.jupyter.org/**](https://nbviewer.jupyter.org/)**)**  allows you to access Jupyter notebooks that are store anywhere (URL, GitHub user/repo name or a Gist ID) excellent mean for collaboration and research.

Python is a general-purpose programming language that can embed all these modules and other advanced modules to build full fledge interactive and scientific applications (wxPython, traits, Django)

IPython is the interactive python shell that is used to enter the command and execute them directly. Idle, Spyder, QTconsole, Jupyter notebook and all others embed an IPython shell.