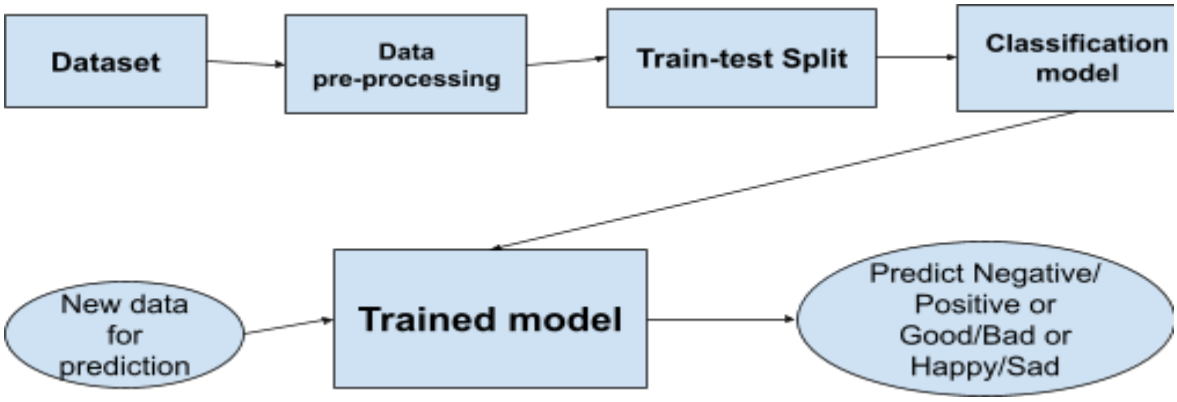
Basic working flow of any machine learning models



Basic Python libraries:

1. **Numpy:** NumPy is one of the fundamental packages for Python, providing support for large multidimensional arrays and matrices along with a collection of high-level mathematical functions to execute these functions swiftly. NumPy can also be used as an efficient multi-dimensional container of generic data. Basically works for scientific computing. **Alias name: np**
2. **Pandas:** Pandas enable the provision of easy data structure and quicker data analysis for Python. For operations like data analysis and modeling, Pandas makes it possible to carry these out without needing to switch to more domain-specific language like R. **Alias name: pd**
3. **Scikit-learn:** It is a free software machine learning library for the Python programming language. It can be effectively used for a variety of applications which include classification, regression, clustering, model selection, naive Bayes', grade boosting, K-means, and preprocessing.
   Scikit-learn requires:
   - Python (>= 2.7 or >= 3.3),
   - NumPy (>= 1.8.2),
   - SciPy (>= 0.13.3).

Spotify uses Scikit-learn for its music recommendations and Evernote for building its classifiers. If you already have a working installation of NumPy and scipy, the easiest way to install scikit-learn is by using pip.

4. **Matplotlib:** This open-source library in Python is widely used for publishing quality figures in various hard copy formats and interactive environments across platforms. You can design charts, graphs, pie charts, scatterplots, histograms, error charts, etc., with just a few lines of code. **Alias name: plt**
5. **NLTK:** The Natural Language Toolkit, NLTK, is one of the popular Python NLP Libraries. It contains a set of processing libraries that provide processing solutions for numerical and symbolic language processing in English only. The toolkit comes with a dynamic discussion forum that allows you to discuss and bring up any issues relating to NLTK.
6. **Seaborn:** When it comes to the visualization of statistical models like heat maps, Seaborn is among the reliable sources. This Python library is derived from Matplotlib and is closely integrated with Pandas data structures.
7. **OpenCV Python:** Open Source Computer Vision or OpenCV is used for image processing. It is a Python package that monitors overall functions focused on instant computer vision. OpenCV provides several inbuilt functions; with the help of this, you can learn Computer Vision. It allows both to read and write images at the same time. Objects such as faces, trees, etc., can be diagnosed in any video or image. It is compatible with Windows, OS-X, and other operating systems.
8. **Keras:** It is an open-source neural network library written in Python designed to enable fast experimentation with deep neural networks. With deep learning becoming ubiquitous, Keras becomes the ideal choice as it is API designed for humans and not machines, according to the creators.

Regular Expression: https://www.geeksforgeeks.org/python/python-regex/