PRE-REQUISITES

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Project Name	**Emerging methods for early detection of forestfires**

Each and every project has certain pre-requisites which need to be satisfied orexecuted in order to kickstart the project with a good start. Some of the prerequisites of this project are as follows:

- Anaconda Navigator
- Tensor flow
- Keras

Anaconda Navigator:

- Anaconda Navigator is a desktop graphical user interface (GUI) includedin Anaconda Distribution that allows you to launch applications and manage conda packages, environments, and channels without using command line interface (CLI) commands.
- Navigator can search for packages on Anaconda.org or in a local Anaconda Repository. It is available for Windows, macOS, and Linux.
- The Navigator documentation includes the following:
- Installation
- Overview
- Getting started with Navigator
- Tutorials
- Updating Navigator
- Troubleshooting
- Help and support
- Release notes
- Glossary

Use of Navigator:

- In order to run, many scientific packages depend on specific versions ofother packages. Data scientists often use multiple versions of many packages and use multiple environments to separate these different versions.
- The CLI program conda is both a package manager and an environmentmanager. This helps data scientists ensure that each version of each package has all the dependencies it requires and works correctly.
- Navigator is a graphical interface that enables you work with packages and environments without needing to type conda commands in a terminalwindow. You can use it to find the packages you want, install them in an environment, run the packages, and update them – all inside Navigator.

Tensor Flow:

- TensorFlow is Google Brain's second-generation system.
- Version 1.0.0 was released on February 11, 2017.
- While the reference implementation runs on single devices, TensorFlowcan run on multiple CPUs and GPUs (with optional CUDA and SYCL extensions for general-purpose computing on graphics processing units).
- TensorFlow is available on 64-bit Linux, macOS, Windows, and mobilecomputing platforms including Android and iOS.
- Its flexible architecture allows for the easy deployment of computation across a variety of platforms (CPUs, GPUs, TPUs), and from desktops toclusters of servers to mobile and edge devices.
- TensorFlow computations are expressed as stateful dataflow graphs. The name TensorFlow derives from the operations that such neural networks perform on multidimensional data arrays, which are referred to as *tensors*.

- During the Google I/O Conference in June 2016, Jeff Dean stated that 1,500 repositories on GitHub mentioned TensorFlow, of which only 5were from Google.

Keras :

- Keras is an open source deep learning framework for python.
- It has been developed by an artificial intelligence researcher at Googlenamed Francois Chollet.
- Leading organizations like Google, Square, Netflix, Huawei and Uber arecurrently using Keras.
- This tutorial walks through the installation of Keras, basics of deep learning, Keras models, Keras layers, Keras modules and finally concludewith some real-time applications.