

## Prerequisites

Team ID	PNT2022TMID14907
Project Name	Project - A Novel Method For Handwritten Digit Recognition System

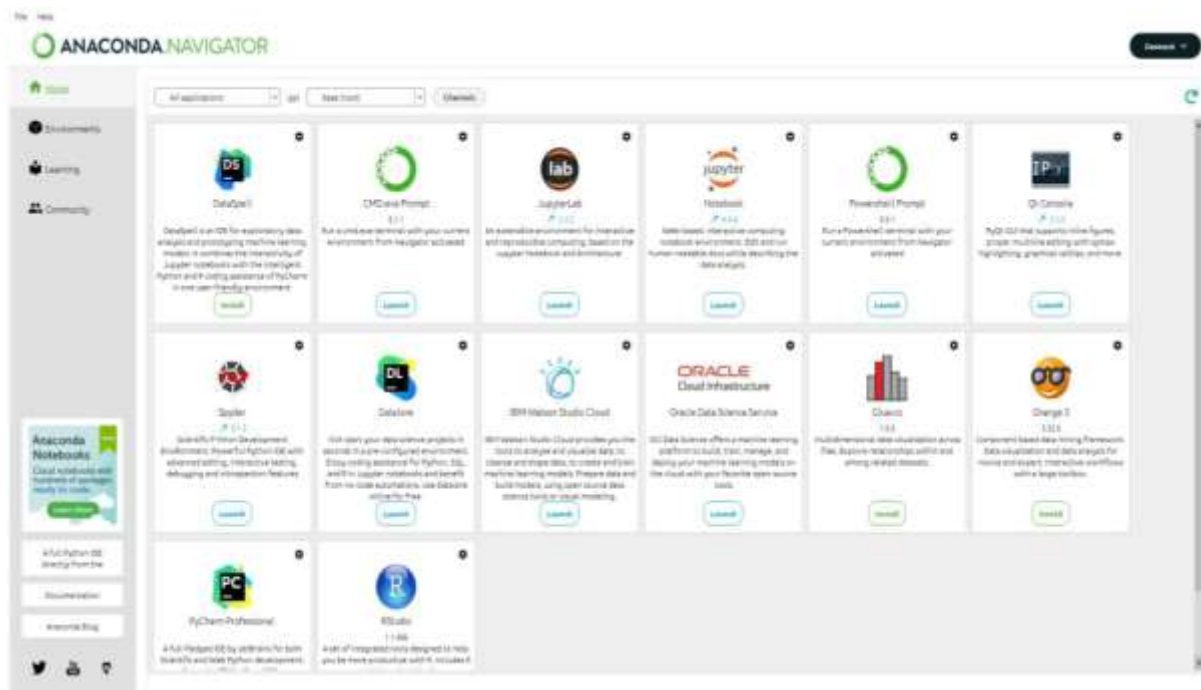
## Prerequisites for Artificial Intelligence

Hardware Specifications:

- Windows (minimum 10), Mac & Linux
- Ram - 4GB ( minimum)
- Hard Disk - 100GB (minimum)
- Processor - Intel i3 (minimum), Mac M1

## Software Specifications:

- Anaconda Navigator



## Packages Installation

```
Anaconda Prompt (Anaconda3) - python
(base) C:\Users\jacer>pip install numpy
defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: numpy in c:\programdata\anaconda3\lib\site-packages (1.21.5)

(base) C:\Users\jacer>pip install pandas
defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: pandas in c:\programdata\anaconda3\lib\site-packages (1.4.2)
Requirement already satisfied: python-dateutil<2.8.1 in c:\programdata\anaconda3\lib\site-packages (from pandas) (2.8.2)
Requirement already satisfied: numpy<1.18.5 in c:\programdata\anaconda3\lib\site-packages (from pandas) (1.21.5)
Requirement already satisfied: pytz>=2020.1 in c:\programdata\anaconda3\lib\site-packages (from pandas) (2021.3)
Requirement already satisfied: six>=1.5 in c:\programdata\anaconda3\lib\site-packages (from python-dateutil<2.8.1>pandas) (1.16.0)

(base) C:\Users\jacer>pip install matplotlib
defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: matplotlib in c:\programdata\anaconda3\lib\site-packages (3.5.1)
Requirement already satisfied: kiwisolver<1.0.1 in c:\programdata\anaconda3\lib\site-packages (from matplotlib) (1.3.2)
Requirement already satisfied: numpy<1.17 in c:\programdata\anaconda3\lib\site-packages (from matplotlib) (1.21.5)
Requirement already satisfied: pyparsing<2.2.1 in c:\programdata\anaconda3\lib\site-packages (from matplotlib) (3.0.4)
Requirement already satisfied: packaging>=20.0 in c:\programdata\anaconda3\lib\site-packages (from matplotlib) (21.3)
Requirement already satisfied: fonttools>=4.22.0 in c:\programdata\anaconda3\lib\site-packages (from matplotlib) (4.25.0)
Requirement already satisfied: cycler>=0.10 in c:\programdata\anaconda3\lib\site-packages (from matplotlib) (0.11.0)
Requirement already satisfied: pillow>=6.2.0 in c:\programdata\anaconda3\lib\site-packages (from matplotlib) (9.0.1)
Requirement already satisfied: python-dateutil>=2.7 in c:\programdata\anaconda3\lib\site-packages (from matplotlib) (2.8.2)
Requirement already satisfied: six>=1.5 in c:\programdata\anaconda3\lib\site-packages (from python-dateutil>=2.7->matplotlib) (1.16.0)

(base) C:\Users\jacer>pip install seaborn
defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: seaborn in c:\programdata\anaconda3\lib\site-packages (0.11.2)
Requirement already satisfied: numpy<1.15 in c:\programdata\anaconda3\lib\site-packages (from seaborn) (1.21.5)
Requirement already satisfied: scipy<1.0 in c:\programdata\anaconda3\lib\site-packages (from seaborn) (1.7.3)
Requirement already satisfied: pandas>=0.23 in c:\programdata\anaconda3\lib\site-packages (from seaborn) (1.4.2)
Requirement already satisfied: matplotlib>=2.2 in c:\programdata\anaconda3\lib\site-packages (from seaborn) (3.5.1)
Requirement already satisfied: cycler>=0.10 in c:\programdata\anaconda3\lib\site-packages (from matplotlib>=2.2->seaborn) (0.11.0)
Requirement already satisfied: pillow>=6.2.0 in c:\programdata\anaconda3\lib\site-packages (from matplotlib>=2.2->seaborn) (9.0.1)
Requirement already satisfied: pyparsing>=2.2.1 in c:\programdata\anaconda3\lib\site-packages (from matplotlib>=2.2->seaborn) (3.0.4)
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Requirement already satisfied: pytz>=2020.1 in c:\programdata\anaconda3\lib\site-packages (from pandas>=0.23->seaborn) (2021.3)
Requirement already satisfied: six>=1.5 in c:\programdata\anaconda3\lib\site-packages (from python-dateutil>=2.7->matplotlib>=2.2->seaborn) (1.16.0)

(base) C:\Users\jacer>python
Python 3.9.12 (main, Apr. 4 2022, 05:22:22) [MSC v.1916 64 bit (AMD64)] :: Anaconda, Inc. on win32
Type "help", "copyright", "credits" or "license()" for more information.
>> import pandas
>> import numpy
>> import matplotlib
>> import seaborn
```

Packages installed are:

1. Pandas
2. Tensorflow
3. Numpy
4. Keras
5. Matplotlib
6. Opencv
7. Seaborn
8. Flask

● Jupyter notebook- INSTALLED

**Flask:Web frame work used for building Web applications- INSTALLED**

● Google Colab - <https://colab.research.google.com/>