# Prerequisites

## NumPy

* The fundamental package for scientific computing with Python
* Check installations
  + Go to terminal and execute below command:

*python -m pip show numpy*

* In two dimensional arrays, all the sub arrays should have same size and data types should be homogeneous

np.array([[1.1, 1.1], [2.2, 3.3]])

## Python:

* Reverse array:

reversedArray = array[::-1]

# Notes:

* Intelligence is ability to learn and solve problems, that is, acquire and apply knowledge
* Intelligence components:
  + Reasoning
  + Learning
  + Problem solving
  + Perception
  + Linguistic abilities
* Types of learning
  + **Reward based learning:**

Entity gets trained to perform certain actions. Once the actions is performed by the entity then entity gets some reward. Entity remembers after performing tasks reward will be obtained.

* + Generalized learning:

Learning from one event can be applied to other similar events. This type of learning is called generalized learning.

* Segments of Artificial Intelligence:
  + Machine Learning

Purpose of machine learning to predict result at certain situation after being trained by another situation.

* + - Deep Learning

Neural networks are part of deep learning.

Neural networks resemble the human brain.

* + NLP / Natural Language Processing:

Ability to communicate with computer with human understandable language.

* + Computer vision
  + Robotics:

Union of software and hardware

* Approaches of AI / How AI should act/think:
  + Humanly
    - The Turing test approach
    - The cognitive modeling approaches.
  + Rationally
    - The rational agent approaches.
    - The “laws of thought” approach
* John McCarthy is the father of AI.
* Data scientist work:
  + Understand problem.
  + Data collection and data storage
  + Data cleaning
    - Removes data irregularities
    - Exploratory data analysis: Removal of insignificant / misleading data
  + Influence business decision

# Resources:

* NumPy tutorial: <https://youtu.be/QUT1VHiLmmI>