Artifical intelligence----🡪machine learning----🡪deep learning(artificial neural network)

Python 1989.

Reddit ,

1.Deep learning: next level of ML

It is machine learning technique that teaches computer what comes naturally to humans.

e.g deep learning is the key behind the driverless car.

Deep learning utilise both structured and unstructured data for trainig.

e.g virtual assistant, vision for driverless cars, money laundering, face recognition.

It need large data and large machine (gpu).

2.Neural network:

It is either software or hardware that works similar to the performance by the neurons of the human.

It is used for effective data mining turning raw data into viable information.

E g allow a business man to learn more about their customers.

3.data mining :

The process of discovering predictive information from the analysis of large databases.

Pandas -is most widely used for data science/data analysis and machine learning task.

Numpy used to perform a wide variety of mathematical operation on arrays.it adds powerful data structure to python thar efficiently calculate with arrays and matrixs. It has

**Object** : Run time entity: object is a physcial entity.

**Class**: Different function of an object: blueprint for creating an object.

**Inheritance**: The process in which one class inherits the attribute of other class.

**Single Inheritance:** base class-->derived class.

**Multiple Inheritance:** base class--\ derived class

Base class--/

**Multilevel Inheritance:** base class-->intermediatory class--->derived class

**Hierarchical Inheritance:**

**Hybrid Inheritance:**

**Polymorphism**: single function with multiple object: the ability of any data to be processed in more than one form.

**Encapsulation**: Is a mechanism of restricting direct access to some components of an object so the user cannot access.

User defined data structure:

Stack: it is a linear process with vertical operation. last-in first out.

Queue: It is linear process with a horizontal operation. First come first go. It is built using array structure. it is used to reduce congestion.

Tree : it is a non linear data structure that has root and nodes. Root is the node from where the data originate. Node is the point that are available to us. It is used in html to distinguish which tag comes after which.

Linked list: it is a linear data structure but not stored consequently but are linked with each other using pointer. They are used widely in image viewing, music player app

Eg: previous---->next

Graph: It is used to store data collection of points called vertices(nodes) and edges. Graphs are used for accurate representation of the real world.

Hash maps: It is same as dictionary in python. They can be used to implement applications such as phonebooks.