PRIOR KNOWLEDGE

TEAM ID	PNT2022TMID32680
PROJECT NAME	University Admit Eligibility Predictor

PRIOR KNOWLEDGE:

Prior knowledge is the information and educational context a learner already has before they learn new information. A learner's understanding of educational material can be improved by taking advantage of their prior knowledge before dealing with the new material. General understanding about the way students learn states that the success of learning is determined by how much the learner already knows about a given topic or related topics.

Prior knowledge refers to the information, no matter how limited, a learner has at the start of learning a new topic. This knowledge will likely have been gathered over time in a variety of ways. If the prior knowledge is correct and consistent with the new information being taught, the effect on learning is positive. However, if prior knowledge conflicts with new information, the effect on new learning can be negative.

MACHINE LEARNING:

Machine learning (ML) is a field of inquiry devoted to understanding and building methods that 'learn', that is, methods that leverage data to improve performance on some set of tasks.[1] It is seen as a part of artificial intelligence. Machine learning algorithms build a model based on sample data, known as training data, in order to make predictions or decisions without being explicitly programmed to do so.[2] Machine learning algorithms are used in a wide variety of applications, such as in medicine, email filtering, speech recognition, agriculture, and computer vision, where it is difficult or unfeasible to develop conventional algorithms to perform the needed tasks.[3][4]

A subset of machine learning is closely related to computational statistics, which focuses on making predictions using computers, but not all machine learning is statistical learning. The study of mathematical optimization delivers methods, theory and application domains to the field of machine learning. Data mining is a related field of study, focusing on exploratory data analysis through unsupervised learning.[6][7] Some implementations of machine learning use data and neural networks in a way that mimics the working of a biological brain.[8][9] In its application across business problems, machine learning is also referred to as predictive analytics.

SUPERVISED LEARNING:

Supervised learning is the types of machine learning in which machines are trained using well "labelled" training data, and on basis of that data, machines predict the output. The labelled data means some input data is already tagged with the correct output. In supervised learning, the training data provided to the machines work as the supervisor that teaches the machines to predict the output correctly. It applies the same concept as a student learns in the supervision of the teacher.

Supervised learning is a process of providing input data as well as correct output data to the machine learning model. The aim of a supervised learning algorithm is to find a mapping function to map the input variable(x) with the output variable(y). In the real-world, supervised learning can be used **for** Risk Assessment, Image classification, Fraud Detection, spam filtering, etc.
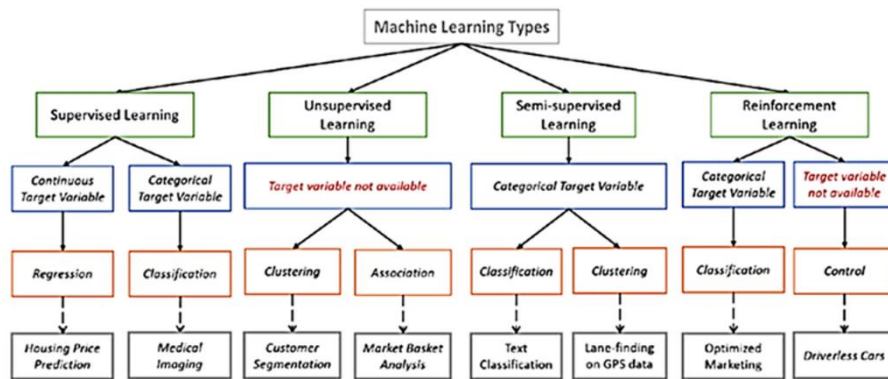
UNSUPERVISED LEARNING:

Unsupervised learning algorithms take a set of data that contains only inputs, and find structure in the data, like grouping or clustering of data points. The algorithms, therefore, learn from test data that has not been labelled, classified or categorized. Instead of responding to feedback, unsupervised learning algorithms identify commonalities in the data and react based on the presence or absence of such commonalities in each new piece of data.

A central application of unsupervised learning is in the field of density estimation in statistics, such as finding the probability density function. Though unsupervised learning encompasses other domains involving summarizing and explaining data features.

CLASSIFICATION:

In Machine Learning. Classification is a process of categorizing a given set of data into classes. It can be performed on both structured or unstructured data. The process starts with predicting the class of given data points. The classes are often referred to as target, label or categories.

Classification is defined as the process of recognition, understanding, and grouping of objects and ideas into present categories aka "sub-populations." With the help of these pre-categorized training datasets, classification in machine learning programs leverage a wide range of algorithms to classify future datasets into respective and relevant categories.

CLUSTERING:

Clustering refers to a technique of grouping objects so that objects with the same functionalities come together and objects with different functionalities go apart. In other words, we can say that clustering is a process of portioning a data set into a set of meaningful subclasses, known as clusters. Clustering is the same as classification in which data is grouped. Though, unlike classification, the groups are not previously defined. Instead, the grouping is achieved by determining similarities between data according to characteristics found in the real data. The groups are called Clusters.

Clustering or cluster analysis is a machine learning technique, which groups the unlabelled dataset. It can be defined as "A way of grouping the data points into different clusters, consisting of similar data points. The objects with the possible similarities remain in a group that has less or no similarities with another group."

It does it by finding some similar patterns in the unlabelled dataset such as shape, size, colour, behaviour, etc., and divides them as per the presence and absence of those similar patterns.

It is an unsupervised learning method, hence no supervision is provided to the algorithm, and it deals with the unlabelled dataset.

After applying this clustering technique, each cluster or group is provided with a cluster-ID. ML system can use this id to simplify the processing of large and complex datasets.

REGRESSION:

Regression is a method to determine the statistical relationship between a dependent variable and one or more independent variables. The change independent variable is associated with the change in the independent variables.

A Regression is a statistical technique that relates a dependent variable to one or more independent (explanatory) variables. A Regression model is able to show whether changes observed in the dependent variable are associated with changes in one or more of the explanatory variables.

PYTHON FLASK:

Flask is a web framework, it's a Python module that lets you develop web applications easily. It's has a small and easy-to-extend core. it's a micro framework that doesn't include an ORM (Object Relational Manager) or such features. It does have many cool features like url routing, template engine. It is a WSGI web app framework.

Flask is a web framework that provides libraries to build lightweight web applications in python. It is developed by Armin Ronacher who leads an international group of python enthusiasts (POCCO). It is based on WSGI toolkit and jinja2 template engine. Flask is considered as a micro framework.

Flask Tutorial provides the basic and advanced concepts of the Python Flask framework. Our Flask tutorial is designed for beginners and professionals. Flask is a web framework that provides libraries to build lightweight web applications in python. It is developed by Armin Ronacher who leads an international group of python enthusiasts (POCCO).