**PCA**

PCA (Principle Component Analysis) is an **Unsupervised Learning** Technique. -It is part of feature selection -Used in data science to understand data completely -deterministic algorithm -applicable only on continuous data

Used to: -identify relation between columns -reduce number of columns -visualize in 2D

**Note:** *It is mainly used to reduce number of features when more number of features are present*

When number of columns are more let it be 100 then its difficult to analyse such large data so by using PCA we reduce columns simply saying we are converting any dimension in to 2-dimensional.

Suppose for 100 dimensions 100 pca's are generated among them only first 10 pc's are giving 90% of information then we can go with those 10 pc's instead of using all 100 columns.

Conditions:

1. Variance of PC1>PC2>PC3.........

2. Correlation between any pca's is '0'

3. Sum of square weights=1

4. All the PC's should be orthogonal to each other

**Data used:**

Universities, Wine

**Programming:**

Python

The Codes regarding this PCA with its datasets are present in this Repository in detail