ML Projects :

- **AI vs ML vs DL (With Real life examples)**
- **Supervised ML vs Unsupervised ML vs Reinforcement ML**
- **Supervised Algo -> Classification vs Regression**
- **Unspervised Algo -> Clustering vs Association**
- **Numpy vs Pandas (Differences)**
- **Steps of ML (All Steps in Detail)**
- **Matplotlib, Seaborn , sklearn Libraries**

Implementation from scratch use of proper algorithms

- supervised learning Algo **(Diabetes Predictor and Email Spam Detector)**
- unsupervised learning Algo **(Customer Segmentation Analysis)**

Basics Steps :

1. **Finding the proper Dataset**
2. **Data Preprocessing**
3. **Exploratory Data Analysis**
4. **Splitting into training and test data set**
5. **Training and Fitting the model with Suitable Algorithm**
6. **Visualization of the data**
7. **Precision and Accuracy score calculation**
8. **Prediction on the test data set**

Diabetes Predictor :

- Intuition Behind this Project ?? (Real life Example)
- Need for this Project and How is your Project Different from that available on the internet ?
- Supervised ML project (Classification Model)
- Basics Steps
- Only Female Data set in version1
- Predicts on the basis of Glucose level, insulin level,age,height,weight,bmi,skin thickness
- SVM Algo (Intuition and why only this algo ?)
- Working of the Algo
- Advantages (Time saving feature as it prevents from visiting clinics for tests)
- Disadvantages (False Prediction May Hamper the life of Patient)
- Future Scope for Improvement (Import in app and smart watch)

Customer Segmentation Analysis :

- Aim to helps Mandob Tuwaiq founders **to understand their customers and applying different marketing approaches by build clustering models**
- Uses in E-commerce domain , School ,clg,images
- Unsupervised ML project
- Basics Steps
- Predicts on the basis of **Customer Id, Age , Annual Income,Spendings**
- K-Mean Clustering Algo (Useful in 3d data plotting , High Dimensional Data)
- Working of the Algo (Elbow Curve Method and WCSS)
- WCSS -> within cluster sum of squares
- Advantage : Same piece of code can work in any dimension as Euclidean distance can be found for any dimension
- Future Scope for Improvement
  Medium Blog Link

Benifits for customer Segmentation

- **To increase the revenue of the supermarket****
- **Improve the Market Value and Profits By making better recommendation for them**
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Business Problem:

A primary goal for any company and business is **to understand their targeted customers.**

How their consumers operate and use their services. Every consumer may use a companies services differently. The problem we're trying to solve is to define this delivery company's consumers. **To define certain behaviors and methods these consumers use the companies services for**.

- **To understand their customers and applying different marketing approaches by build clustering models**

Future Work:

Considering that the collected data was data of six months time, **the models would be more robust with more data points to plot. The algorithms could be optimized in the future by feeding it more data**. The company now m**ay market to each segmented customers appropriately and show different advertisements to different customer segments.**

About :

Customer Segmentation is the process of dividing customers into groups based on common characteristics so companies can market to each group effectively and appropriately

Algorithmic Marketing based Project to do Customer Segmentation using KMean Clustering Algorithm and targeted Recommendations based on each segment

More examples : GoogleAds,Youtube ads, Netflix, Amazon Prime

Conclusions

K means clustering is one of the most popular clustering algorithms and usually the first thing practitioners apply when solving clustering tasks to get an idea of the structure of the dataset.

The goal of K means is to group data points into distinct non-overlapping subgroups.

One of the major application of K means clustering is **segmentation of customers to get a better understanding of them which in turn could be used to increase the revenue of the company.**

1 ->super hero
2 ->horror movie

3rd watching superhero movie can be given a recommendation for that

Backup Project :

Email Spam Detector :

- Intuition Behind this Project ?? (Real life Example)
- Need for this Project and How is your Project Different from that available on internet ?
- Supervised ML project (Text Classification Model)
- Basics Steps
- Predicts on the basis of Random Texts
- Use of NLP (Text Classification)
- KNN , Naive Bayes (Intuition and why only this algo ?)
- Working of the Algo
- Advantages (Saves Time and Creates Awareness among people to be aware of spam messages)
- Disadvantages (Spammer is also Aware of the Feature,might find different ways of attack)
- Future Scope for Improvement (Use of Regional Language for Prediction of Spam Text)