Capstone Project

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Submission Guidelines:

For the following problem statements, follow the guidelines mentioned below:

1. **Create a project report in a pdf format that will consist of the following:**
    a. Problem Statement
    b. Project Objective
    c. Data Description
    d. Data Pre-processing Steps and Inspiration
    e. Choosing the Algorithm for the Project
    f. Motivation and Reasons For Choosing the Algorithm
    g. Assumptions
    h. Model Evaluation and Techniques
    i. Inferences from the Same
    j. Future Possibilities of the Project
2. **Save your model for each project and provide a copy of the same during submission.**

Problem Statement 1:

A retail store that has multiple outlets across the country are facing issues in managing the inventory - to match the demand with respect to supply. You are a data scientist, who has to come up with useful insights using the data and make prediction models to forecast the sales for X number of months/years.

Dataset Information:
The walmart.csv contains 6435 rows and 8 columns.

Feature Name	Description
Store	Store number
Date	Week of Sales
Weekly_Sales	Sales for the given store in that week
Holiday_Flag	If it is a holiday week
Temperature	Temperature on the day of the sale
Fuel_Price	Cost of the fuel in the region
CPI	Consumer Price Index
Unemployment	Unemployment Rate

1. **Using the above data, come up with useful insights that can be used by each of the stores to improve in various areas.**
2. **Forecast the sales for each store for the next 12 weeks.**

Problem Statement 2:

An online retail store is trying to understand the various customer purchase patterns for their firm, you are required to give enough evidence based insights to provide the same.

Dataset Information:
The online_retail.csv contains 387961 rows and 8 columns.

Feature Name	Description
Invoice	Invoice number
StockCode	Product ID
Description	Product Description
Quantity	Quantity of the product
InvoiceDate	Date of the invoice
Price	Price of the product per unit
CustomerID	Customer ID
Country	Region of Purchase

1. **Using the above data, find useful insights about the customer purchasing history that can be an added advantage for the online retailer.**
2. **Segment the customers based on their purchasing behavior.**

Problem Statement 3:

You are working in an e-commerce company, and your company has put forward a task to analyze the customer reviews for various products. You are supposed to create a report that classifies the products based on the customer reviews.

Dataset Information:
The Reviews.csv dataset contains 60145 rows and 10 columns.

Feature Name	Description
Id	Record ID
ProductId	Product ID
UserId	User ID who posted the review
ProfileName	Profile name of the User
HelpfullnessNumerator	Numerator of the helpfulness of the review
HelpfullnessDenominator	Denominator of the helpfulness of the review
Score	Product Rating
Time	Review time in timestamp
Summary	Summary of the review
Text	Actual text of the review

1. **Find various trends and patterns in the reviews data, create useful insights that best describe the product quality.**
2. **Classify each review based on the sentiment associated with the same.**