PROJECT NAME:7214-FUTURE SALES PREDICTION

VEDULLAPALLI BHARGAVA SAI

(TEAM MEMBER)

Introduction

- Data preprocessing, feature engineering, model selection, training, and evaluation are crucial steps in any data science project.

- These steps help in transforming raw data into a suitable format for machine learning models.

- By following a systematic approach, we can increase the accuracy and reliability of our models.

- *This process typically relies on features such as cast, crew, genre, budget, and user reviews to build predictive models.*

PROBLEM DEFINITION

✳ The problem is to develop a predictive model that uses historical sales data to forecast future sales for a retail company. The objective is to create a tool that enables the company to optimize inventory management and make informed business decisions based on datadriven sales predictions. This project involves data preprocessing, feature engineering, model selection, training, and evaluation.

DESIGN THINKING

1.DATA SOURCE

⇒ **Utilize a dataset containing historical sales data, including features like date, product ID, store ID, and sales quantity.**
Additional data sources, such as movie metadata, reviews, and social media sentiment, can be

integrated for better predictions.

2.DATA PREPROCESSING

□ Clean and preprocess the data, handle missing values, and convert categorical features

□ Feature scaling techniques like standardization or normalization may be applied to ensure fair comparisons.

3.FEATURE ENGINEERING

➤ Create additional features that could enhance the predictive power of the model, such as time-based features (e.g., day of the week, month).

➤ Statistical analysis and domain knowledge can help identify the most relevant features.

4. MODEL SELECTION

✏️ **Choose suitable time series forecasting algorithms (e.g., ARIMA, Exponential Smoothing) for predicting future sales.**

✏️ **The choice of the model depends on factors like dataset size, feature complexity, and dCesired interpretability.**

5.MODEL TRAINING

✳ **Train the selected model using the preprocessed data.**

✳ **Model training involves fitting the selected algorithm to the training data.**

✳ **It includes tuning hyperparameters to optimize model performance.**

✳ **Model training is a crucial step in building a predictive model.**

6.MODEL EVALUATION

- **Model evaluation is the final step where we assess the performance of our trained model.**

- **It involves using evaluation metrics such as accuracy, precision, recall, and F1 score.**

- **Model evaluation helps in determining the effectiveness of the model and its suitability for deployment.**

THANK YOU