Amazon Sales Analysis Project - README

Amazon Sales Analysis Project

Project Overview

The "Amazon Sales Analysis" project is designed to derive actionable insights from sales data to improve decision-making processes in business. By analyzing key metrics and trends, the project aims to help optimize inventory, enhance customer satisfaction, and boost revenue.

Key Features

1. **Exploratory Data Analysis (EDA):**
   - Identifies seasonal trends and customer preferences.
   - Detects underperforming regions and products.

2. **Data Cleaning:**
   - Handles missing values and outliers.
   - Encodes categorical variables and normalizes numerical features.

3. **Modeling and Forecasting:**
   - Employs time-series analysis and regression models to predict future sales.
   - Uses classification models to identify profitable product segments.

4. **Visualization:**

- Generates dashboards and visual reports using Power BI and Tableau.

Technologies Used

- **Programming Language: Python**

- **Libraries: Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn**

- **Database: MySQL**

- **Visualization Tools: Power BI, Tableau**

- **Deployment Framework: Flask (API), AWS**

Project Structure

1. **Data Ingestion: Extract data from CSV/SQL databases.**

2. **Preprocessing: Clean and preprocess the data.**

3. **Analysis: Perform EDA and generate visualizations.**

4. **Modeling: Build and validate predictive models.**

5. **Reporting: Create automated PDF reports and dashboards.**

How to Run the Project

1. Clone the repository:

```bash

git clone [repository URL]

```

2. Install dependencies:

```bash
pip install -r requirements.txt
```

3. Set up the database:

- Import the provided SQL schema into MySQL.

4. Run the Flask API:

```bash
python app.py
```

5. Access the dashboard:

- Use Power BI or Tableau to connect to the database.

Future Work

- Integration of real-time data pipelines.
- Experimentation with deep learning models for improved forecasting.
- Development of a mobile-friendly dashboard interface.

Contributors

- **Name:** Prabhat Vivek Mahajan
- **Role:** Data Analyst

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