## Customer Satisfaction Prediction Web App

This is a Flask-based web application that uses a machine learning model (XGBoost) to predict customer satisfaction levels — Satisfied, Neutral, or Unsatisfied — based on behavioral and demographic inputs.

**Project Overview**

The goal of this project is to:

- Build a predictive model using XGBoost.- Deploy it using Flask as a web interface.- Allow users to input customer data and get satisfaction predictions in real time.

Project Structure

Flaskapp/  
│  
├── app.py # Flask application  
├── best\_xgb\_model.pkl # Trained XGBoost model  
├── scaler.pkl # StandardScaler used during training  
├── label\_encoder.pkl # LabelEncoder for the satisfaction target  
├── city\_encoder.pkl # Optional: label encoder for 'city' if used  
│  
├── templates/  
│ ├── index.html # Input form UI  
│ └── result.html # Displays prediction result  
│  
├── static/ # CSS, JS, images (optional)  
│  
└── README.md # Project documentation

**How It Works**

1. The user inputs customer data (e.g., total spend, items purchased, gender, etc.).
2. 2. The data is preprocessed using the same scalers and encoders used during training.
3. 3. The preprocessed data is fed into a trained XGBoost model.
4. 4. The model returns a satisfaction prediction that is displayed in the browser.

Model Info

Model: XGBoost Classifier

Training Conducted using hyperparameter tuning via RandomizedSearchCV

Target Classes: `Satisfied`, `Neutral`, `Unsatisfied`

Evaluation: Accuracy, classification report, and confusion matrix

Features Used: Total Spend, Items Purchased, Average Rating, Days Since Last Purchase, Discount Applied, Gender, Membership.

Requirements

Installed the following Python packages:

pip install flask, joblib, scikit-learn, matplotlib.pyplot, xgboost, pandas, numpy

Running the App

1. Clone or download the project.

git clone https://github.com/Darejforce/PREDICTING-CUSTOMER-SATISFACTION

Run the Flask app.

python app.py

Open your browser and go to:

http://127.0.0.1:5000/

Deployment

## Author

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**License**

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