

Future Price Prediction of Different Types of Goods



Presented By

Md Monser Ali (0112230856)

Hasibul Hassan Kobir (0112310272)

Md. Sojib Hossain (0112310102)



Introduction to Price Prediction System

This project focuses on predicting the future prices of perishable and non-perishable food items using machine learning.

It leverages historical price data, food categories, and regional factors (zilla/districts) to model and forecast future trends.

The system uses an ensemble approach combining multiple machine learning algorithms for improved accuracy.

Dataset Overview

- Date and Year
- Zilla and Market Location
- Commodity Type (Perishable/Non-Perishable)
- Price (in BDT)

This data is preprocessed by encoding categorical values and cleaning irrelevant or redundant fields.

Ensemble Model Strategy

The ensemble model combines the predictions of multiple regressors:

- Random Forest
- XGBoost

Each model learns patterns in price variation based on the year, location, and category of the food. The final prediction is an average of these models, which helps reduce bias and variance



Model Evaluation

Mean Absolute Error (MAE), which shows how close the predictions are to the actual prices. A lower MAE indicates higher model accuracy.

$$\text{MAE} = \frac{1}{n} \sum_{i=1}^n |y_i - \hat{y}_i|$$

Mean Squared Error (MSE)

$$\text{MSE} = \frac{1}{n} \sum_{i=1}^n (y_i - \hat{y}_i)^2$$

Conclusion

This ensemble-based approach provides a scalable and accurate system for forecasting food prices. It can be used by local government bodies, traders, and suppliers to plan inventory and pricing strategies more effectively



Thanks!

Do you have any
questions?

