# Objective: To evaluate the performance of a machine learning model in predicting prices for various crops.

--------------------------------------------------------------------------------------------------------------Dataset:

The dataset includes:

* Crop
* Date
* Real-Time Price (Actual Price)
* Prediction (Predicted Price)
* Deviation (Difference between Real-Time and Prediction)
* %Accuracy (Accuracy of the Prediction)

## Data Overview:

The dataset covers dates for each crop with corresponding real-time and predicted prices. Data spans from 04/03/2024 to 13/03/2024 for corn, cotton, tomato, onion, and paddy, with potato data extending to 27/04/2024.

## Analysis Approach:

1. **Accuracy Calculation**:
   * 
   * Deviation and accuracy are computed for each crop and date.
2. **Descriptive Statistics**:
   * Average real-time price, predicted price, deviation, and accuracy percentage are calculated for each crop.

**Key Findings and Output:**

1. **Corn**:
   * Average Real-Time Price: 2278.33
   * Average Predicted Price: 2186.50
   * Average Deviation: 91.83
   * Average Accuracy: 95.97%

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A graph with a line and numbers

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1. **Cotton**:
   * Average Real-Time Price: 7110.06
   * Average Predicted Price: 6881.13
   * Average Deviation: 228.94
   * Average Accuracy: 96.78%

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1. **Tomato**:
   * Average Real-Time Price: 1055.00
   * Average Predicted Price: 2678.30
   * Average Deviation: 1623.30
   * Average Accuracy: -53.87% (Poor model performance)

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A graph with green and blue lines

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1. **Onion**:
   * Average Real-Time Price: 1255.56
   * Average Predicted Price: 1460.86
   * Average Deviation: 205.31
   * Average Accuracy: 83.65%

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1. **Paddy**:
   * Average Real-Time Price: 1200.00
   * Average Predicted Price: 1248.54
   * Average Deviation: 48.54
   * Average Accuracy: 95.96%

A graph with numbers and a number of data

Description automatically generated

A graph with numbers and a line

Description automatically generated

A graph with a green line

Description automatically generated

1. **Potato**:
   * Average Real-Time Price: 2333.33
   * Average Predicted Price: 1499.16
   * Average Deviation: 834.17
   * Average Accuracy: 64.25%

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A graph with numbers and lines

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**Conclusion:**

The model shows high accuracy for predicting cotton (96.78%), corn (95.97%), and paddy (95.96%) prices but performs poorly for tomatoes. For onions and potatoes, accuracy is moderate. This analysis highlights the model's strengths and areas for improvement.

**Visual Analysis:**

The visual representation of the data (image provided) shows detailed predictions and deviations for each crop. The table in the image provides a clear overview of the model's performance across different dates and crops. This can help identify trends and patterns in prediction accuracy and highlight specific areas where the model needs adjustment.