# **Objective:** To evaluate the performance of a machine learning model in predicting cotton prices.

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## 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. For cotton, data spans from 04/03/2024 to 13/03/2024. Similar data is available for corn, tomato, onion, paddy, and potato.

## Analysis Approach:

1. **Accuracy Calculation**:

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* Deviation and accuracy are computed for each crop and date.

1. **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: 2212.74
   * Average Deviation: 65.60
   * Average Accuracy: 97.12%

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Description automatically generated

A graph with numbers and a line

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1. **Cotton**:
   * Average Real-Time Price: 7110.06
   * Average Predicted Price: 7052.21
   * Average Deviation: 57.85
   * Average Accuracy: 99.19%

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1. **Tomato**:
   * Average Real-Time Price: 1055.00
   * Average Predicted Price: 2934.37
   * Average Deviation: 1879.37
   * Average Accuracy: -78.14% (Poor model performance)

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1. **Onion**:
   * Average Real-Time Price: 1255.56
   * Average Predicted Price: 1490.05
   * Average Deviation: 234.49
   * Average Accuracy: 81.32%

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A graph with blue and green lines

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1. **Paddy**:
   * Average Real-Time Price: 1200.00
   * Average Predicted Price: 1231.06
   * Average Deviation: 31.06
   * Average Accuracy: 97.41%

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A graph with numbers and a line

Description automatically generated

A graph with green and blue lines

Description automatically generated

1. **Potato**:
   * Average Real-Time Price: 2333.33
   * Average Predicted Price: 1483.04
   * Average Deviation: 850.29
   * Average Accuracy: 63.56%

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**Conclusion:**

The model shows high accuracy for predicting cotton (99.19%), corn (97.12%), and paddy (97.41%) prices but performs poorly for tomatoes. For onions and potatoes, accuracy is moderate. This analysis highlights the model's strengths and areas for improvement.