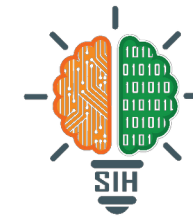


# SMART INDIA HACKATHON 2024



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HACKATHON  
2024

## TITLE PAGE

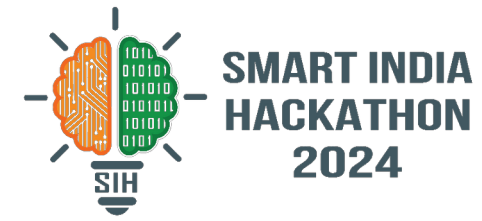
- **Problem Statement ID – 1647**
- **Problem Statement Title -**
  - Development of AI-ML based models for predicting prices of agri-horticultural commodities such as pulses and vegetable (onion, potato, onion)
- **Theme - Agriculture , FoodTech & Rural Development**
- **PS Category- Software/Hardware: Software**
- **Team ID-**
- **Team Name (Registered on portal)**



## ❖ Proposed Solution (Describe your Idea/Solution/Prototype)

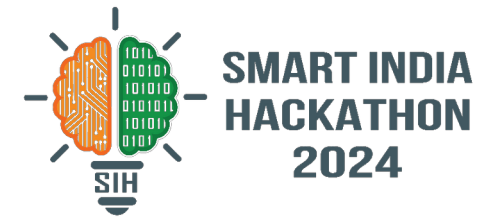
- Use Machine Learning models like LSTM, Random Forest, Prophet and XGBoost to predict prices of the 22 essential commodities
- Models used currently like ARIMA and SARIMA are linear models and so cannot capture the non-linear relationships. We would be using Non-Linear Models (mentioned above) to capture such relationships
- Predict supply and demand surges or deficit and inform authorities before hand

# TECHNICAL APPROACH



- Technologies : Python, Pandas, numpy, plotly, sci-kit learn, TensorFlow
- Methodology :
  - Data Sourcing
  - Data Cleaning
  - Exploratory Data Analysis (EDA)
  - Model Building
  - Model Evaluation
  - Model Deployment

# FEASIBILITY AND VIABILITY



- Feasibility
  - Data Availability
  - Computational Resources
  - Algorithm Complexity
- Potential challenges and risks
  - Data Quality and Availability
  - Model Accuracy and Generalization
- Strategies for overcoming these challenges
  - Data Cleaning, Preprocessing, Augmentation
  - Model Generalization using Regularization Techniques

Your  
Team  
Name

# IMPACT AND BENEFITS



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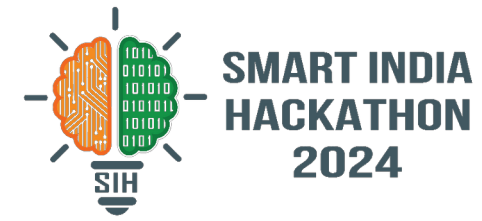
- Potential impact :
  - Government Agencies can make informed policies and decisions
  - Farmers can manage risk and ensure financial income stability
- Benefits of the solution :
  - Improved food security in society
  - Increased agricultural productivity and economic growth
  - Sustainable agriculture and improved efficacy

# RESEARCH AND REFERENCES



- Details / Links of the reference and research work
  - <https://nhb.gov.in/>
  - <https://www.indiastat.com/data/agriculture/horticulture>
  - <https://www.ncdex.com/>
  - [https://www.mospi.gov.in/sites/default/files/publication\\_reports/Brochure\\_2024.pdf](https://www.mospi.gov.in/sites/default/files/publication_reports/Brochure_2024.pdf)
  - <https://nhb.gov.in/statistics/Publication/Horticulture%20Statistics%20at%20a%20Glance-2018.pdf>

# IMPORTANT INSTRUCTIONS



Please ensure below pointers are met while submitting the Idea PPT:

1. Kindly keep the maximum slides limit up to six **(6)**. ( Including the title slide)
2. Try to avoid paragraphs and post your idea in points /diagrams / Infographics /pictures
3. Keep your explanation precise and easy to understand
4. Idea should be unique and novel.
5. You can only use provided template for making the PPT without changing the idea details pointers (mentioned in previous slides).
6. You need to save the file in PDF and upload the same on portal. No PPT, Word Doc or any other format will be supported.

**Note - You can delete this slide (Important Pointers) when you upload the details of your idea on SIH portal.**