



# Team Name : BUET\_Inception

Problem 4: Create an “Integrated Market Intelligence Platform” to keep the prices of the daily essential commodities stable

# Team Information

## Team Members:

- ❖ Syeda Nahida Akter - Data analysis , Backend server
- ❖ Sazan Mahbub - Data analysis, Backend server
- ❖ Faria Huq - Frontend development, Data preprocess, Financial management

We are three enthusiastic Final year Students studying under CSE department, BUET, Dhaka.

**Problem we will be working on:** (Problem 4) Create an “Integrated Market Intelligence Platform” to keep the prices of the daily essential commodities stable

**Solution Stage:** Prototype

## Contact Person:

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# হালখাতা

**People of project:** People involved in data collection, data analysis and processing.

**Target Market:**

- a) Client firms (will get clear overview of the price of commodities)
- b) Different Government Sectors (exportable product prediction, product's market price prediction, probable syndicate detection)

**Project Brief:** We introduce “হালখাতা” – a real-time Machine Learning based system that can detect various price anomalies and identify price hike. Our system is capable of determining the amount of Import needed to fulfil National Demand. Using our system, we can visualize the data trend and generate different statistical report that will help the Authority make important decisions faster and reduce Inflation & Price Hike.

**What we are solving:**

- 1) Time delay (get rid of lengthy governmental chain)
- 2) Transparency
- 3) Accuracy in predicting market status
- 4) Automation (reducing dependency on manpower)

# হালখাতা

## How we are solving:

### 1) Data Collection:

#### a) We will develop Android APP for the data collectors with caching ability

- Different products needs different type of data query, so we will make a drag and drop template generation which will allow the data collector generate specific template for specific product
- Inclusion of image and NID based data collection from field survey, will make data accumulation more reliable, accurate and impactful. Each product information will contain the information of the data provider including their image and NID.
- Sometimes there is network scarcity in rural area, in-app caching will allow better quality service henceforth. People can use these offline.

#### b) Using smart Apis to transfer forms remotely, and controlled by a central server

### 2) Data Analysis:

- Use the central database to access the recent data and use advanced machine learning models to analyze the data trend.
- Use ML to cluster the products with similar features and plot them on 2D plane using PCA, t-SNE.

# হালখাতা

- Visualize the dynamic interactive graphs using data visualization tools (Plotly, Seaborn, Matplotlib)
  - By analyzing the data, predict the over-production, under-production of commodities, find out the products profitable to export in future, predict future inflation
  - Detect anomaly such as price syndicate, and detect source of anomaly using NID based data collection process
- 3) Report Generation and Preventive Measure:
- Use library tools to generate automatic reports in different formats such as pdf, excel instead of manual report generation.
  - In case of anomalies, we will inform respected authorities to take necessary steps. For example, if a certain company is overcharging in a particular area, we will inform the Food ministry about the corruption so that they can take faster action.

# হালখাতা

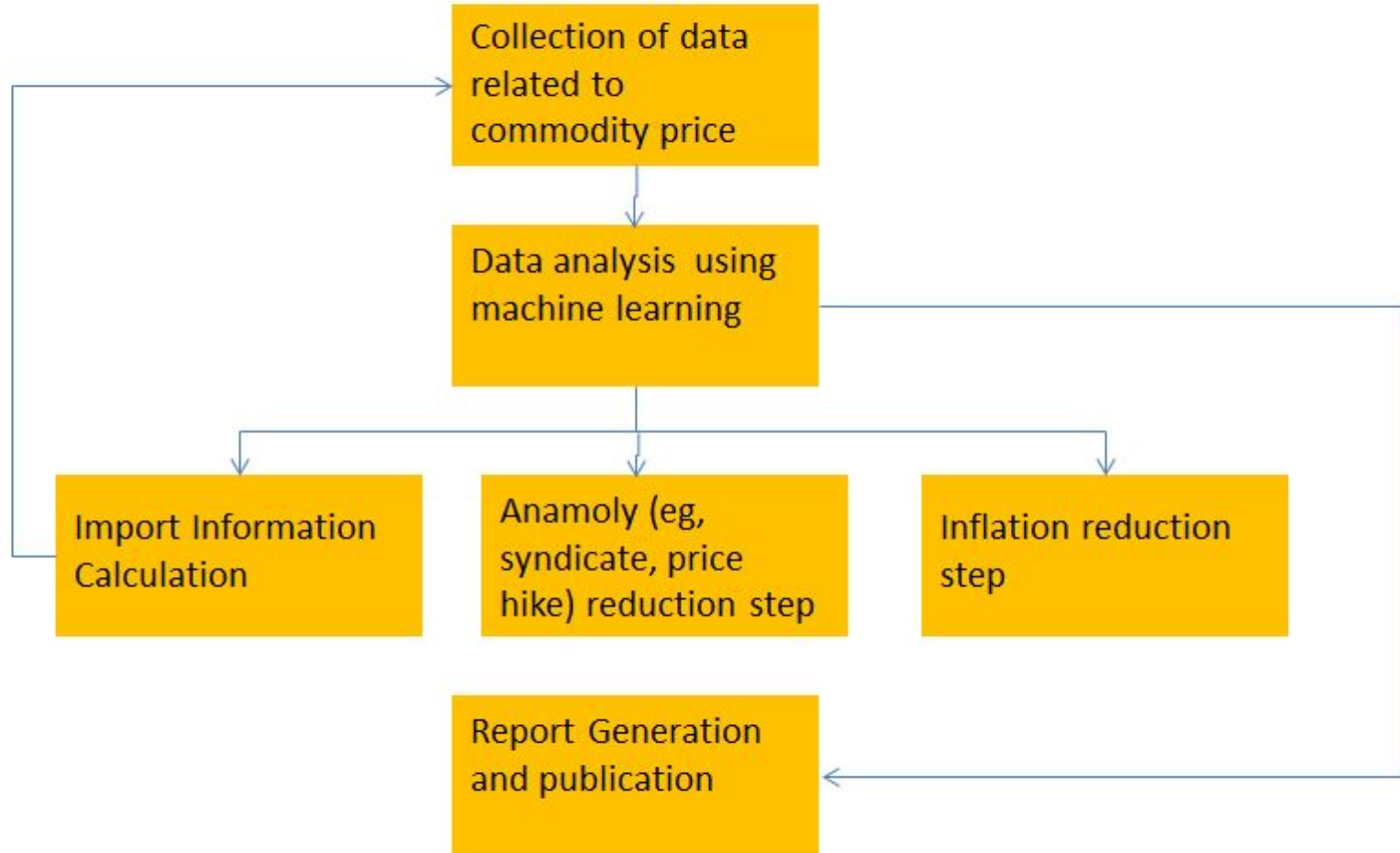
## What technology we are using:

- ❖ Online and offline database
- ❖ Machine Learning
- ❖ PCA
- ❖ Dynamic data visualization using Plotly, Matplotlib, Seaborn

**Solution Type:** Software

**Demo:** [A video demo](#), [Github link](#)

# হালখাতা



# Marketing and Finance

## Budget Estimation:

- ❖ Initial development cost (machinery purchase and setup)- 1,50,000
- ❖ Maintenance cost (machinery maintenance, salary of employees) – 40,000/month

## Revenue Plan:

By encouraging automation and digitalization, we are ensuring reduction of processing time and manpower. Our system will earn revenue in three major ways -

1. Reducing cost of manpower (previously needed **11** people, now estimated **4** people)
2. Reducing cost of timeline (previously needed **17** days, now needed **5** days)
3. Subscription charge from client firms for using our system

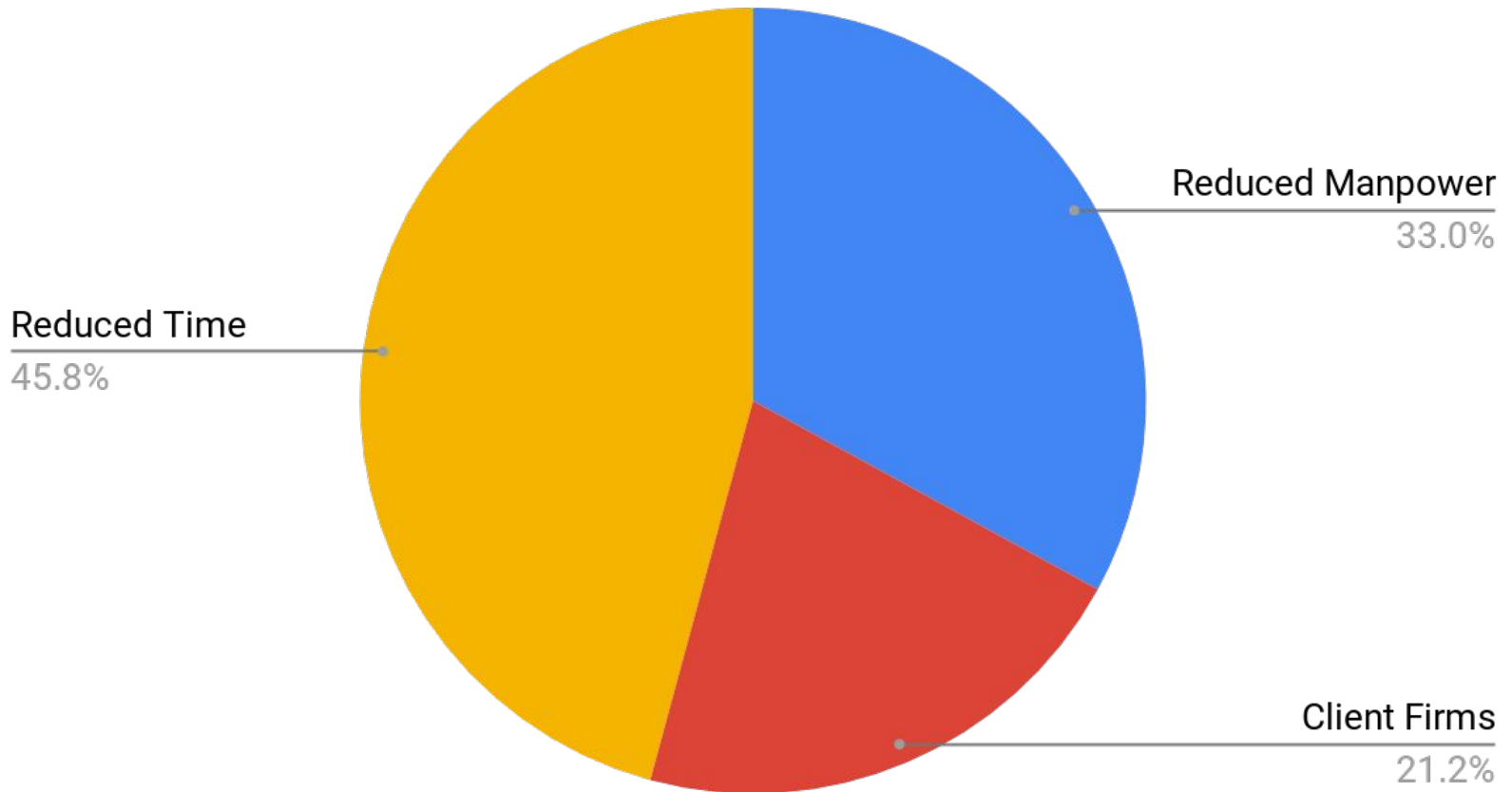
## Market Plan:

- ❖ Encouraging the users to use our system by informing about the advantages
- ❖ Advertising our system via other government websites and news portal
- ❖ Enforcing the businessmen and stakeholders to migrate to our system by law enforcement



# Marketing and Finance

## Revenue Plan



# Expectation

**What are the probable risks you may face in implementation? :**

- ❖ Getting accustomed to a new Digital system – We can overcome this problem by training our target audience and providing incentives
- ❖ Reluctance of unscrupulous businessman to our system – We can overcome this problem by ensuring strict law enforcement

**Expectation from the Startup Bangladesh- iDEA project :**

Fund, Mentoring, Grooming for full-fledged system to ensure a better economic growth in Bangladesh.

**Comments :** The initiative of arranging a Hackathon that allows students and concerned citizens to take part in the Nation's important issues is really noteworthy and appreciating.