

Team TensionFlow - Team 127
CyberCipher3.0 - Advanced PS

Green Basket

Nourishing Families, One Click at a Time

Abhay Mathur
Shreya Shah
Devansh Rathor



Problem Statement

The problem statement for the project is to address the challenges faced by Aryan, the owner of a family-owned grocery store in Mumbai. The issues include poor inventory management and untimely food orders, which have resulted in a decline in business and financial difficulties. Aryan seeks a solution from fetch.ai, involving the utilization of uAgents and the development of a deep learning model to improve the efficiency and sustainability of his grocery store.

Our Features

Automated
Inventory
Management
System

Demand
Forecasting
using LSTM

Order
Management
for
Deliveries

Inventory
Depletion
Alert for
Restocking

Delivery
Agent
Management
and Tracking

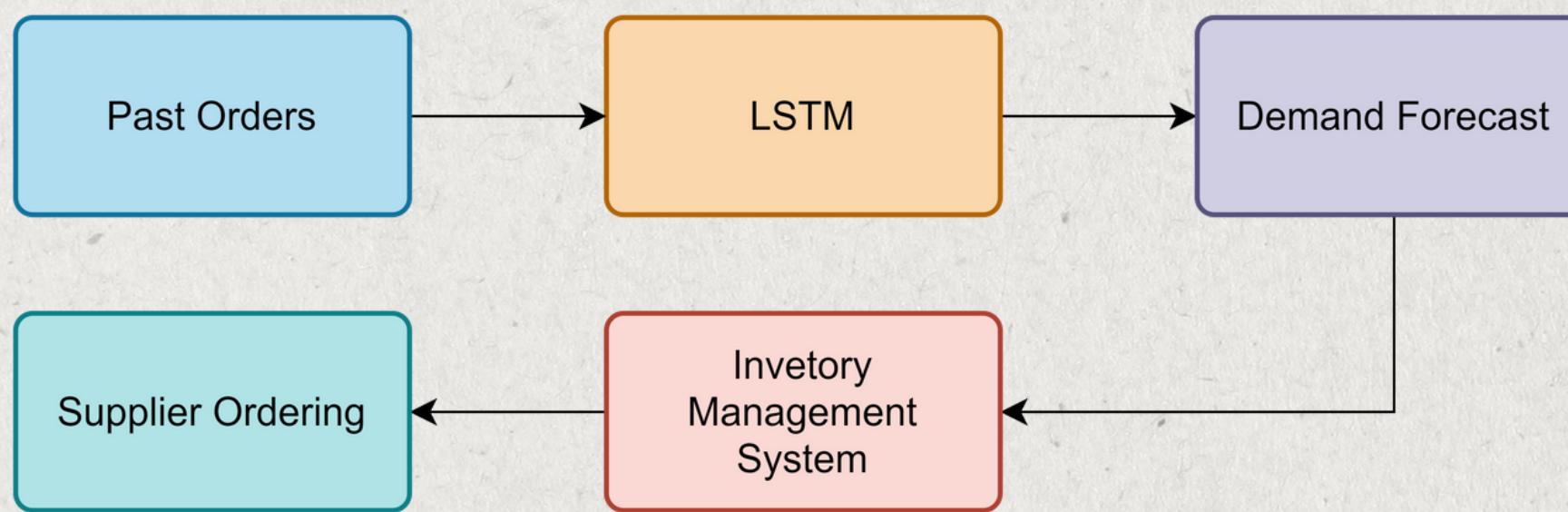
Real Time
Analysis for
Categories
of Sold Items

Checking
Availability
via Images
using CNN



How it works

- Automated System for logging, updating and deleting from inventory
- Using **Long Short Term Memory (LSTM) model** for time-series analysis, predicting inventory required for a particular month for a product so the store can restock and therefore ensure timely order of stock



ID	Name	Brand	Category	SubCategory	Price	Size	Quantity
1	Premia Badam (Almonds)	Premia	Grocery	Grocery/Dry Fruits	451.0	500 gm	119
2	Premia Badam (Almonds)	Premia	Grocery	Grocery/Dry Fruits	109.0	100 gm	133
3	Premia Badam (Almonds)	Premia	Grocery	Grocery/Dry Fruits	202.0	200 gm	56
4	Nutraj California Almonds (Badam)	Nutraj	Grocery	Dry Fruits	599.0	500 gm	29
5	Nutraj California Almonds (Badam)	Nutraj	Grocery	Dry Fruits	1549.0	1 kg	70
6	Chana Dal	None	Grocery	Dals	49.0	500 gm	128
7	Chana Dal	None	Grocery	Dals	96.0	1 kg	82
8	Rajma White	None	Grocery	Pulses	112.0	500 gm	31
9	Rajma Kashmiri Red	None	Grocery	Pulses	101.0	500 gm	85
10	Premia Mamra Badam	Premia	Grocery	Dry Fruits	634.0	200 gm	143
11	Tata Sampann Chana Dal	Tata	Grocery	Dals	64.0	500 gm	62
12	Tata Sampann Chana Dal	Tata	Grocery	Dals	125.0	1 kg	125
13	Rajma Red Small	None	Grocery	Pulses	61.0	500 gm	58



How it works

- Receiving delivery orders from customers through an **Input Agent**, which sends a message to **Database Agent** which is used for checking for availability and making the required deduction in available stock
- The **Alert Agent** prints an alert message when the available quantity of a product is below a certain threshold and the required restock quantity
- The **Manager Agent** sends a ready message and then checks for one of the **Delivery Agents** that is currently free to dispatch an order

Shop

Search for products:

Enter product quantities (separated by commas):

Buy

You have successfully bought: Premia Badam (Almonds) - 500 gm and the quantity is 5

Green Basket

- Dashboard
- Inventory
- Orders

Green Basket

- Dashboard
- Inventory
- Orders

Orders

New Order

Product

Premia Badam (Almonds) - 500 gm - ₹451

Quantity

Customer ID

▼

Submit

Orders

Order ID	Customer ID	Delivery Agent	Status
No data			

Dashboard

Delivery Agents

Name	Order	In Store	Status
DELIVERY AGENT C	---	True	IDLE
DELIVERY AGENT B	---	True	IDLE
DELIVERY AGENT A	---	True	IDLE

Orders

Order ID	Customer ID	Delivery Agent	Status
0	4	DELIVERY AGENT C	DELIVERED
1	3	DELIVERY AGENT B	DELIVERED
2	2		PENDING

Refresh

- **Input Agent:**

```
PS C:\Users\a21ma\OneDrive\Desktop\Cyber Cypher 3.0\backend\agents> python .\input_agent.py  
agent1qgmvuf8wuv96ypmsptary360n8qghm80yw0tv39qqk4d5nepgudxzskzqqm  
INFO: [input_agent]: Almanac registration is up to date!  
INFO: [input_agent]: Starting server on http://0.0.0.0:8001 (Press CTRL+C to quit)  
Premia Badam (Almonds) - 500 gm 5
```

- **Database Agent:**

```
PS C:\Users\a21ma\OneDrive\Desktop\Cyber Cypher 3.0\backend\agents> python .\database_agent.py  
INFO: [database_agent]: Almanac registration is up to date!  
INFO: [database_agent]: Starting server on http://0.0.0.0:8000 (Press CTRL+C to quit)  
5 of Premia Badam (Almonds)(id:1) was bought  
New Quantity: 114
```

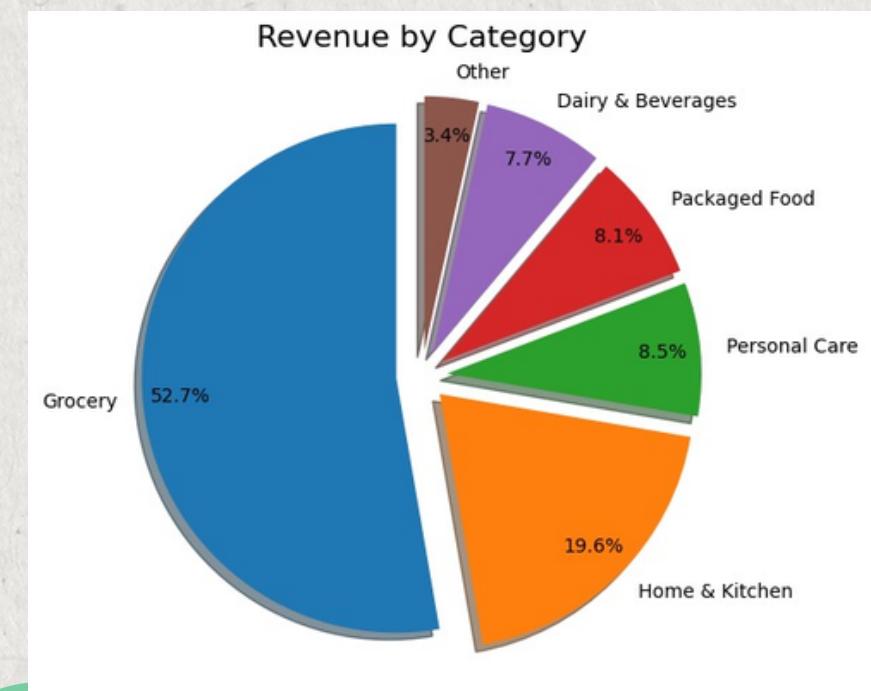
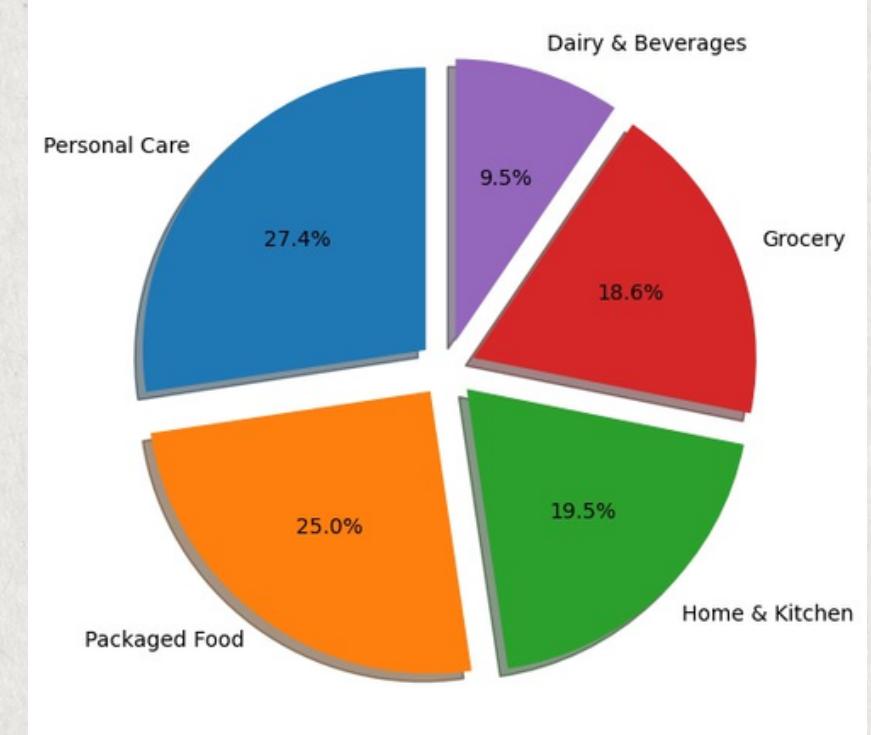
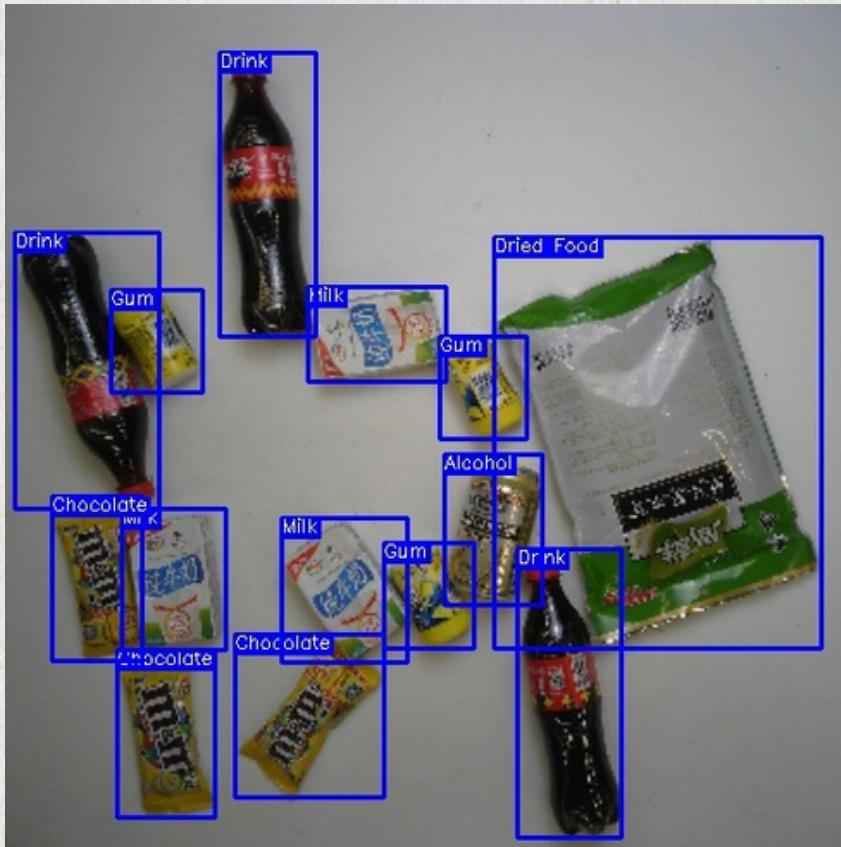
- **Alert Agent:**

```
PS C:\Users\a21ma\OneDrive\Desktop\Cyber Cypher 3.0\backend\agents> python .\alert_agent.py  
agent1qfhsacmleeygp9qhpnjyjnsmj36el3far8k6vpep5t8uuxupnhus7t40wv8  
INFO: [alert_agent]: Almanac registration is up to date!  
INFO: [alert_agent]: Starting server on http://0.0.0.0:8002 (Press CTRL+C to quit)  
INFO: [alert_agent]: Premia Badam (Almonds) - 500 gm is low in stock, restock 3219 units  
[]
```

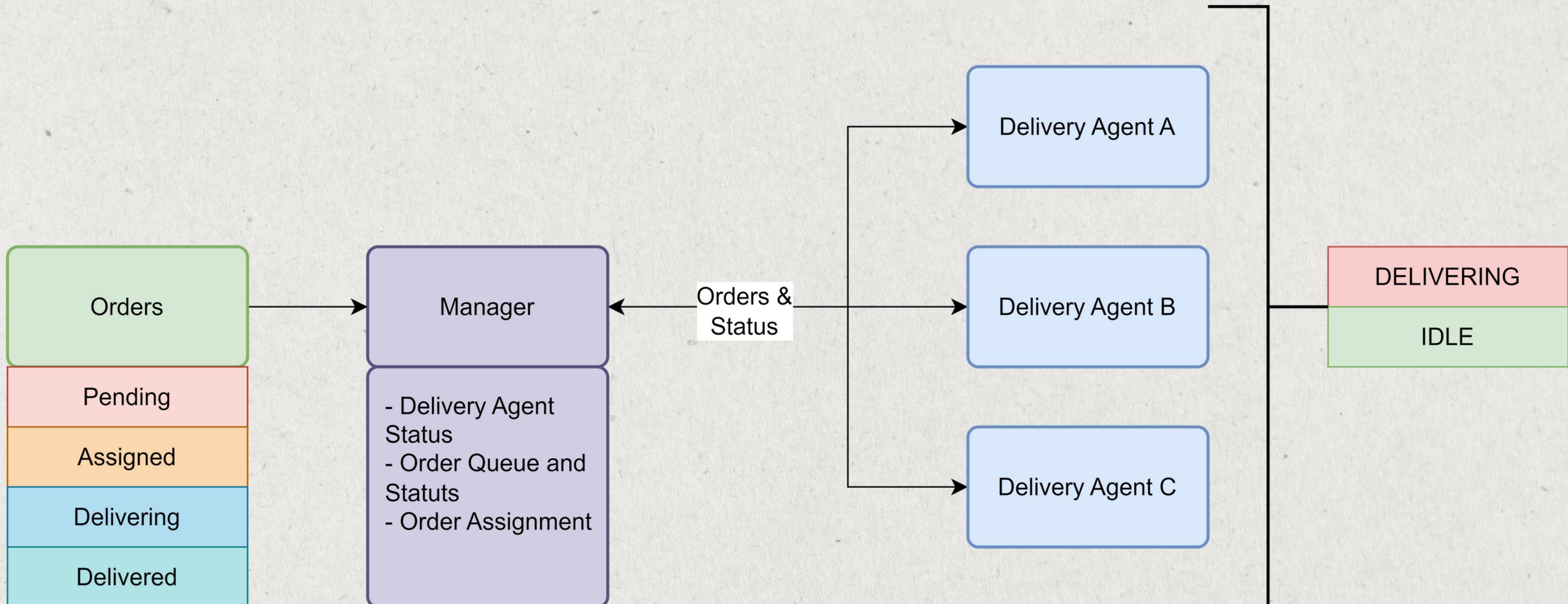
- Manager and Delivery Agents:

How it works

- Real time analysis of categories sold in the day
- Using a **Convolutional Neural Network (CNN) model** to visually detect available stock to help with alerts for restocking



Flow of Customer Orders



01.

Real-time Route Optimization for delivery agents for fastest possible deliveries and tracking their real time location

03.

Market Basket Analysis from order data for Personalised Promotions & Offers Management

02.

Seamless Payment Gateway Integration on the customer side to make online payments for their grocery delivery order.

04.

Automated ordering of stocks from multiple suppliers to optimize cost, time and availability



Future Scope



Thank you very much!

