

TAPSHIP

A PROJECT REPORT

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by

Raunak Choudhary

USN: 4MW17CS064

Under the guidance of

Ms. Harshitha G M

Assistant Professor, Dept. of Computer Science and Engineering
Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal, UDUPI

in partial fulfillment of the requirements for the award of the degree of

Bachelor of Engineering



Department of Computer Science and Engineering
SHRI MADHWA VADIRAJA INSTITUTE OF TECHNOLOGY AND MANAGEMENT
Vishwothama Nagar, BANTAKAL – 574 115, Udupi District

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Vishwothama Nagar, BANTAKAL – 574 115, Udupi District, Karnataka, INDIA

Department of Computer Science and Engineering

CERTIFICATE

Certified that the Project Work titled 'Tap Ship – Tap to Ship' is carried out by Mr. Raunak Choudhary, USN: 4MW17CS064, a bonafide student of Shri Madhwa Vadiraaja Institute of Technology and Management, in partial fulfillment for the award of the degree of Bachelor of Engineering in Computer Science and Engineering of Visvesvaraya Technological University, Belgaum during the year 2020-21. It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report. The report has been approved as it satisfies the academic requirements in respect of Project Work prescribed for the said Degree.


Ms. Harshitha G M
Project Guide
Dept. of CSE


Dr. Nagraj Bhat
Head of the Department
Dept. of CSE


Dr. Thirumaleshwara Bhat
Principal
SHRI MADHWA VADIRAJA
INSTITUTE OF TECHNOLOGY & MANAGEMENT
Vishwothama Nagar, Udupi Dist.
BANTAKAL - 574 115

External Viva

Name of the Examiners:

1.

2.

Signature with Date

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Raunak Choudhary

ABSTRACT

The Agriculture is the backbone of economy and one of the most important sectors of our country. The propose system transform the government APMC's market into an electronic marketplace (exchange) called e-mandi for agriculture produce. An important function of the electronic exchange is to match the supply of the farmer's produce with the demand from the wholesalers and retailers. Every year, news headlines are filled with suicides of farmers because they are been conned in the market by middlemen, and they also face a lot of difficulty in transferring their goods like crop, fertilizers, seeds etc. from one location to others. So, to save the precious lives of our farmers, we need an effective platform, from where they can get right price of their produce and easy way to transport their shipment. Solution to this extreme problem, we introduce our Project called 'TapShip'. The main actors of this system are farmers, customers, drivers, kiosk centers and admin. Crops added by the farmer is open for sale where customer can bid to get the crop at its best price. The role of middlemen has been eliminated to benefit both the farmers and customers directly. Driver also gets the ample opportunity of employment, directly connecting with our portal. Every aspect of farmers, customers and drivers is considered to ensure them the best price without affecting anyone. We present a stylized case study to illustrate the functioning of such a Mandi exchange. We believe such a Mandi exchange will have a translational impact on agricultural trading, particularly in India.

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INTRODUCTION

India is a land of agriculture. The backbone of Indian economy is agriculture which contributes nearly 17% to the total GDP and generate employment for 60% of the population. The condition of farmers across India is alarming, nearly 80% of the Indian farmers are either marginal or small farmer's category.

Advancement and transformation of the Indian Logistics Ecosystem can be brought by introducing trending technologies like Machine Learning, Cyber Security, etc. to this ecosystem. In present time, Farmers of our country faces a lot of difficulty in transferring their goods like crop, fertilizers, seeds etc. and sell them to get proper price. Hence, there is a need of more effective and efficient system through which they can transfer their shipment to the new location and sell it.

Every Year, news headlines are filled with suicides of farmers because they are been conned in market. So, to save the precious lives of our farmers, we need an effective way to transport the shipment which became the motivation for our project. This Motivation led us to innovate an efficient way to stop the conning happening in transportation field. Our product involves the whole transportation solution which involves transportation of any type of shipment. Hence, as a solution to this extreme problem, we introduce our Product called 'TapShip'. The main motive of our product is to provide an interface which will act as a mediator between the person who want to ship the goods and the owner of the vehicle.

In present day scenario, the logistics system lacks a communication gap between the customer and the manager of the vehicle. So, there is requirement to fulfil this communication gap. The main aim of our project is to make life easier for them and to build an Effective Online Platform for Freight Management. It ensures that the right products get to the right places in the right timeframe and at the right price.

The APMC was introduced with the motive of safeguarding farmer's right and prevent their exploitation by intermediaries. With the passage of time this system becomes inefficient because of trader's monopoly and excessive commission and charges levied on farmers. These all factors motivated us to create a web application which help the farmers to become independent while selling their crops in agriculture market. We tried best to incorporate trending technologies to get customers direct deals from farmers at an attractive price and a reliable transport service along with user friendly platform. And also developed a solution for drivers to get them deals in seamless period of time along with easy payment service.

LITERATURE REVIEW

The agriculture sector is one of the most important sectors of our country. Recently, there have been few progresses in the field of Agriculture Market like developing the transporting and tracking management systems, but till date there is no efficient effort has been made in this area to solve the problem. There is a strong requirement for a one-stop solution for this problem. [1]

There are many problems that farmers face during transportation of their crops. Like, not getting the correct price or getting conned in agriculture market, no proper communication between the transport delivery person and the farmer, etc. There has been various application made to solve the problem but they were not very efficient. Due to this COVID-19 pandemic, condition of farmers has got worse in agriculture market. We know that Food supply chains connect heavily dependent producers and consumers throughout the globe, often with just-in-time delivery. Many of these critical supply chains have been disrupted, or are threatened to be disrupted, by the COVID-19 pandemic. [2]

There are some variances of India's agriculture and marketing system that bear on farmers' choice of market channels and producer prices. First, Indian agriculture is dominated by smallholders, mostly engaged in subsistence production. Second, farmer-trader relations are often based on mutual trust, and generally involve tied transactions involving credit, input, and output markets. Third, India's agricultural price policy provides for procurement of some commodities at the government-set minimum support prices (MSP); intended to create incentives for farmers to adopt yield-enhancing technologies and agronomic practices.

The benefits of MSP, however, are directly proportional to the marketed surplus, and thus it benefits larger farmers more [3]. But, the smallholder farmers because of the poor transport and communication networks or alternatively higher cost of accessing transportation and information are more dependent on informal channels, comprising

local traders and input dealers for sale of their produce, and receive prices significantly below MSP. Further, those selling in the regulated markets also receive prices lower than MSP. Larger and better-informed farmers sell most of their produce to government agencies and licensed traders in the regulated markets at better price terms.

In Present, Indian farmers faces many challenges. One of the big challenges that farmers face is that to get a good profit for the efforts and investment that they had put in. There exist different reasons like season limitation, crop life due to which farmer get very limited amount of time to study and get profit for the efforts they had put [4]. We know that it is not feasible to reach all merchant/consumers physically for farmers as it consumes much time and efforts wherein our farmers have limited amount of time. Also, traditionally, methodologies implemented by farmer created limited access to customers enabling less options to sell the crop product in the market. So, by introducing a new marketing method (application) wherein farmer can sell his crop or product at each layer of marketing chain (customers, markets or directly to end user) with having option to set the minimum price by his own choice. [5]

To solve the problems of farmers, we as a team came up with an idea for developing a platform where farmers can get a price for his crop which reaches his expectancy level and he gets all benefits. While on parallel, even customers and drivers also can gain profits from the deals. The basic idea of our application is that generally customers login to the application and search for their needs. Farmers can sell their crops by entering the details of the product, and the location details of the farmer who sells their product. Customers can search for the crop and they get farmers who will be available. Our application helps to connect farmers and customers. Both customers and farmers get more benefits through our application. We have developed a recommendation system which recommends the deals to customers and drivers on basis of their location. Also, farmers get different options to sell their products in their locations that reduce transportation costs. In India, most of the farmers are coming from a backward community and with low literacy. KIOSK Center Support and the user-friendly nature of our application make it more useful for farmers. [6]

MOTIVATION AND BACKGROUND STUDY

3.1 Problem Statements

- Developing a web application which help the farmers to become independent while selling their crops in agriculture market.
- Make use of trending technologies to get customers direct deals from farmers and a reliable transport service along with user friendly platform.
- Developing a solution for drivers to get them deals in seamless period of time along with easy payment service.

3.2 Drawbacks in Existing System

- **Distress sale:** Most Indian farmers are extremely poor and have no capacity to wait for a better pricing on their produce in the absence of proper credit facilities. Farmers often have to go for distress sales of their output to the village moneylenders or merchants at very poor rates.
- **Lack of market intelligence:** Indian farmers are not always aware of the ruling prices of their produce in big markets. Hence, they have to accept low prices for their produce as offered by the middlemen or traders.
- **Lack of poor transportation:** Farmers cannot reach the markets due to poor transportation facilities. This leads to them not being able to sell their produce. Thus, they prefer to sell their produce in the villages.
- **Intermediaries:** A large number of intermediaries or middle men exists between the final market and the farmer. All these middlemen claim a good amount of the goods and money and therefore, reduce the returns of the cultivators.

- **Unregulated markets:** Huge number of markets adopt various malpractices. Prevalence of these false weights and lack of grading and standardization of products in village markets in India are always going against the interest of ignorant, small and poor farmers.

3.3 Objectives

- To give opportunity for farmers to decide the minimum price of shipment and also give equal opportunities to customers including APMCs, government agencies, etc. and truck drivers throughout the country.
- Providing an infrastructure to customer and driver to directly communicate regarding transportation requirements.
- Providing opportunity to all truck drivers to make offers for all available shipments.
- Make easy payments and more secure transport service for both farmers and drivers.

3.4 Background Study

The brief background theory behind our basic idea is that both Farmers and consumers login to the application and search for their needs. Farmers can sell their crops by entering the details of the product, and the location details of the farmer who sells their product. Consumers can search for the crop and they get farmers who will be available. Our application helps to connect farmers and consumers. Both customers and farmers get more benefits through our application. The prediction analyses of our app predict with the help of price detail of crop for farmers of the previous year. Also, farmers get different options to sell their products in their locations that reduce transportation costs. In India, most of the farmers are coming from a backward community and with low literacy. Multiple languages support and the user-friendly nature of our application make it more useful for farmers.

SYSTEM REQUIREMENTS

4.1 Software Requirements

1. Operating System: Microsoft Windows, LINUX, Ubuntu, MAC
2. Languages Used: HTML, CSS, PHP, Bootstrap, JavaScript, Python, MySQL
3. Tools Used: Visual Studio Code, Xampp, phpMyAdmin, Git Bash, Github
4. APIs Used: Bing Map API, Twilio API, Open Weather Map API
5. Web Browser: Google Chrome, Mozilla Firefox, Microsoft Edge

4.2 Hardware Requirements

1. Processor: Intel(R) Core (TM) i5 - 64 bit
2. Processor Speed: 1.60GHz
3. RAM Size: 8GB DDR3
4. Cache Memory: 2MB
5. Color Monitor: 1024 * 768 Resolution

METHODOLOGY

In this project, we are using different technologies in order to make our platform secure with a good user experience. The technologies are described in different sections.

Here we are using several technologies which are listed as follows

5.1 Cybersecurity

Various factors have been taken into consideration in order to protect our platform from various famous and common cyber-attack.

a) SQL injection protection: SQL injection is a web security vulnerability which is one of the most famous that allows an attacker to interfere with the queries that an application makes to its database. It generally allows an attacker to view data that they are not normally able to retrieve. This might include data belonging to other users, or any other data that the application itself is able to access. In many cases, an attacker can modify or delete this data, causing persistent changes to the application's content or behavior. To prevent this attack we converted each and every input to string so, that no one can inject SQL code and hack our platform [4].

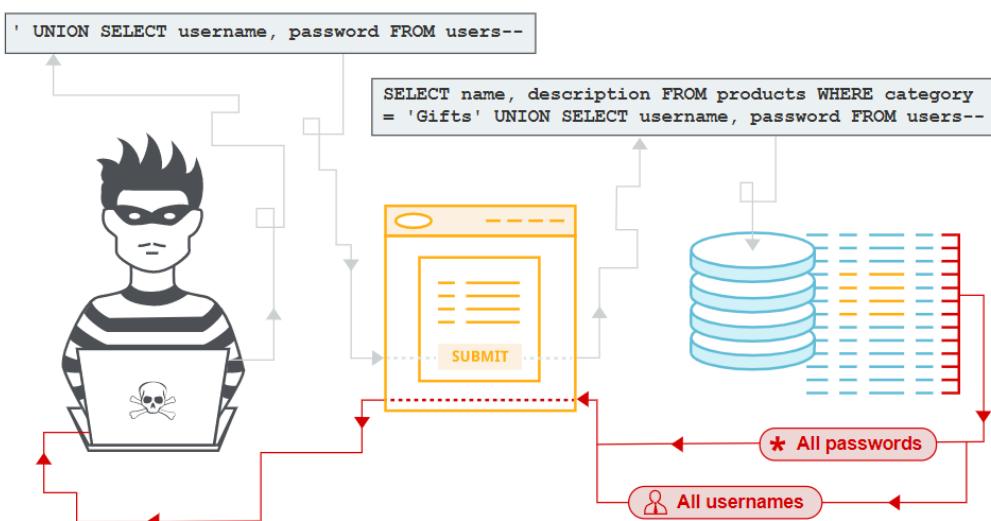


Fig 5.1.1 SQL Injection

b) URL Encoding: We have changed the URL of the crops and all other things which possibly could be accessed by anyone by directly hampering to the URL. Fig. 1 shows no user will know the exact path and no one can perform any type of code injection attack in the address bar [5].

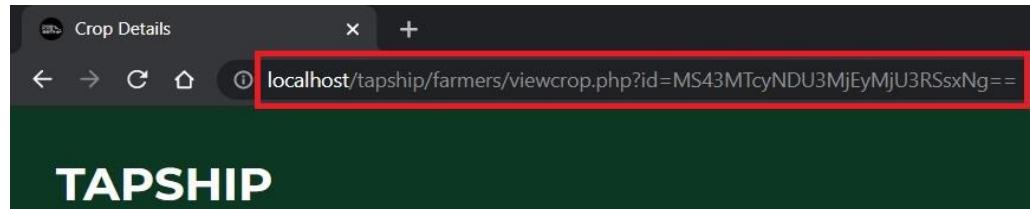


Fig 5.1.2 URL Encoding

c) Two Step Verification: Two-factor authentication (2FA), sometimes referred to as two-step verification or dual-factor authentication, is a security process in which users provide two different authentication factors to verify themselves. Two-factor authentication provides a higher level of security than authentication methods that depend on single-factor authentication (SFA), in which the user provides only one factor -- typically, a password or passcode. Two-factor authentication methods rely on a user providing a password, as well as a second factor, usually either a security token or a biometric factor, such as a fingerprint or facial scan. Two step verification is implemented via OTP (one time password) which is very necessary in order to re-verify the person who is attempting login. The basic flow of working is shown in Fig. 5.1.3



Fig 5.1.3 Two step verification

5.2 Recommendation System

We have created our own recommendation system, for that we have created our own algorithm and we are running various python scripts on server side which process the data which is with us and recommends the client as per their own interest in order to improve the user experience in the form of web/app interface.

a) Recommendation of crops to the customer: We are recommending the crops based on the location of the customer which is based on the pincode which we took at the time of registration. After that we are sending it to the database and then lastly we are processing it by a python script and hence, customer will get the better recommendation.

b) Recommendation of shipment to the Truck driver: Depending on the location of the truck driver our system will automatically recommend the shipment which is nearby to the driver. This will be done by fetching the live location of driver and sending all that data to our database. Our recommendation system will process the data and gives us the optimum result.

SYSTEM DESIGN

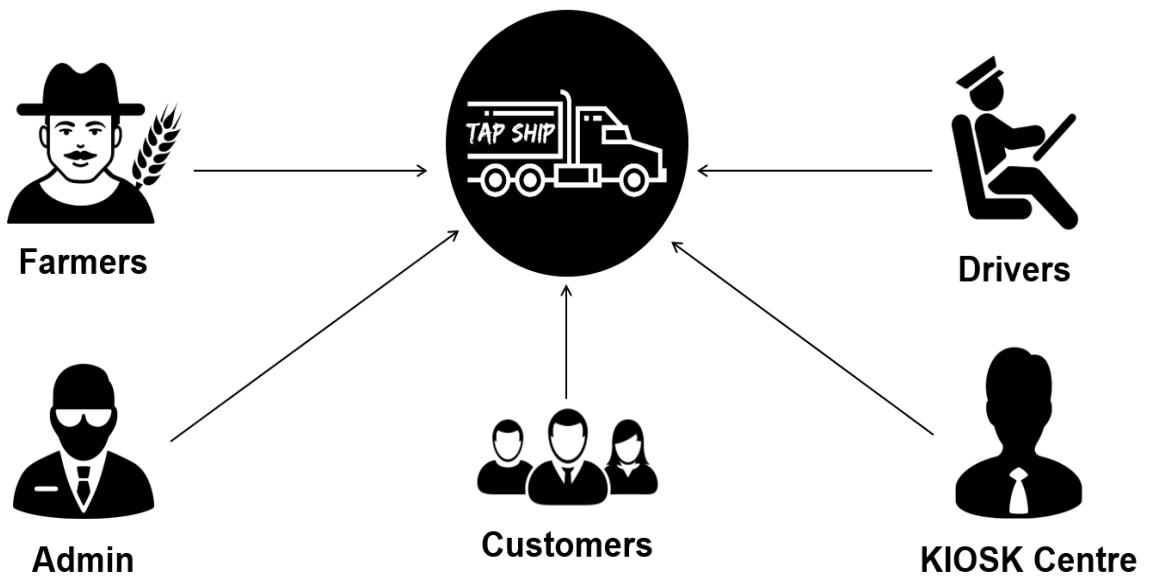


Fig: 6.1 Key Players

The screenshot shows the TapShip website homepage. The top navigation bar includes links for HOME, CONTACT, ABOUT, FAQ, Log in, Sign Up, Admin, and Download APP. A green header bar contains the text "Whom We Help?". Below this, there are three main sections: "Farmers" (with an icon of a farmer holding wheat), "Customers" (with an icon of three people), and "Drivers" (with an icon of a driver in a truck seat). Each section has a brief description:

- Farmers:** We are providing a e-platform to Farmers where they can sell their crops to anyone on their desired rate and conditions.
- Customers:** Wholesaler who buys from these agents can directly buy from farmers. It will remove the cost added by APMC agents.
- Drivers:** Truck Drivers can see the successful deals on platform and can transport the crop from Farmers to Wholesaler.

Fig: 6.2 TapShip Home Page

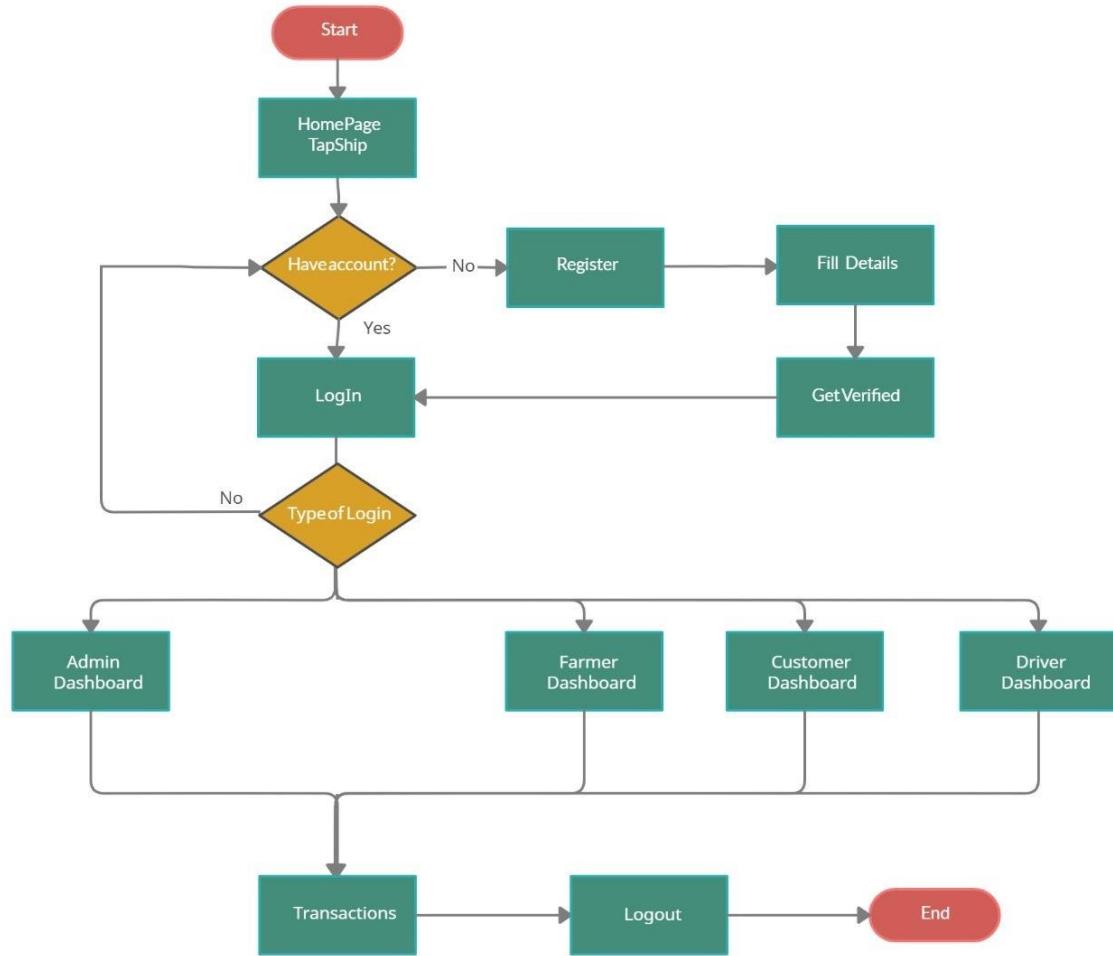


Fig: 6.3 Flow Diagram

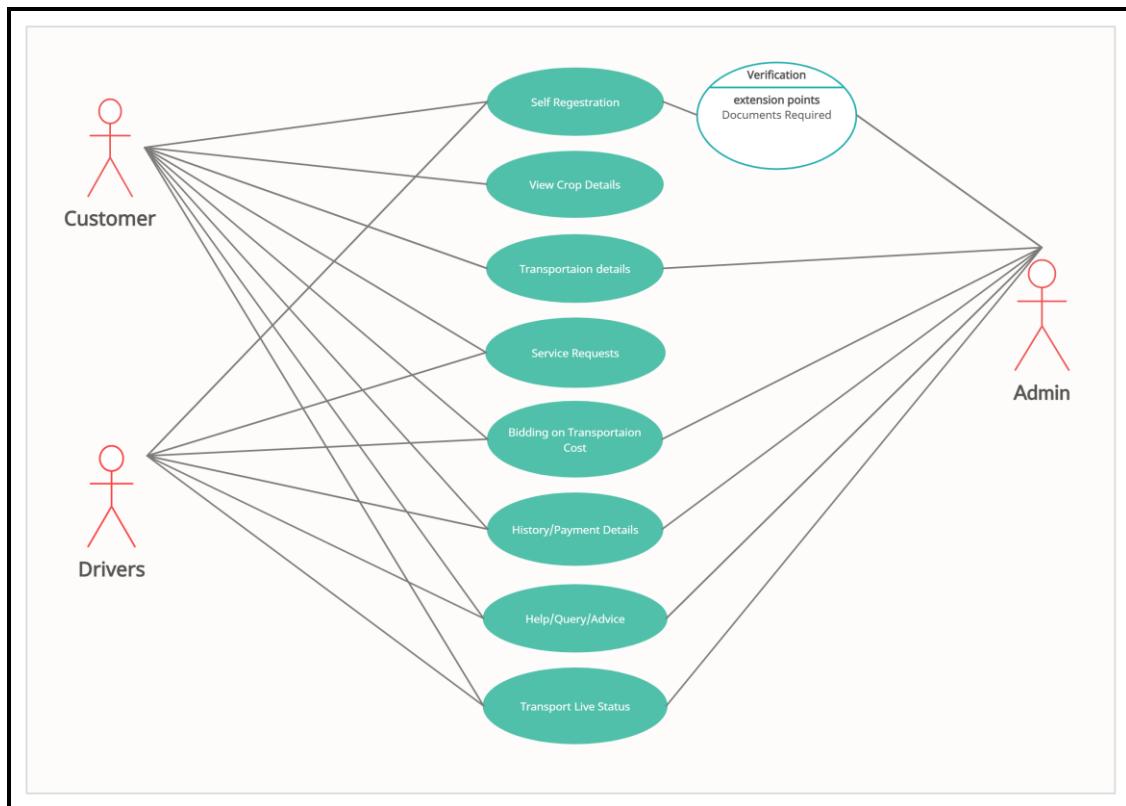


Fig: 6.4 Use-Case Diagram of Farmer-Driver

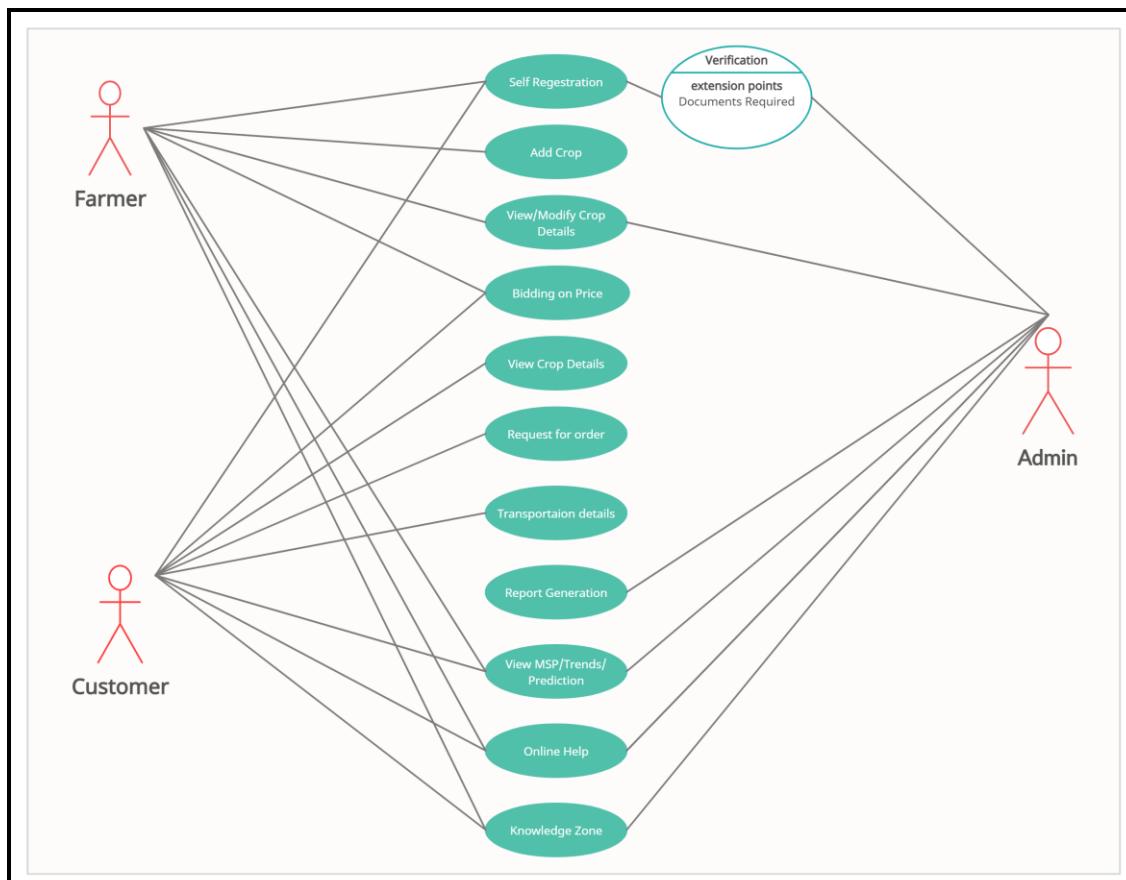


Fig: 6.5 Use-Case Diagram of Farmer-Customer

6.1 System Administrator

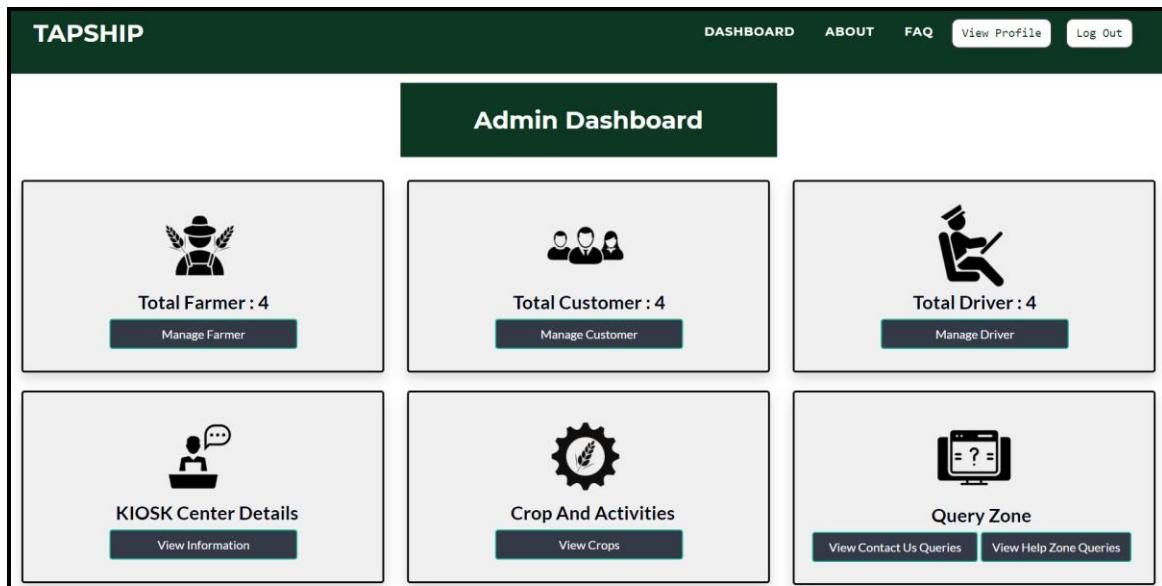


Fig: 6.1.1 Admin Dashboard

System Administrator plays a vital role in administration, management and support activities as shown in Fig 6.1.1. The system admin can manage users such as Farmer, Customer, and Driver.

The screenshot shows the 'Manage Farmers' page. At the top right are links for 'DASHBOARD', 'ABOUT', 'FAQ', 'View Profile' (highlighted in red), and 'Log Out'. The main area is titled 'Manage Farmers' and displays a table of farmer profiles:

Sr. No.	ID	Name	Mobile	City	PAN	Status	Photo	Profile
1	4	Sushant Mishra	9661442323	Nalanda	UNFCA8194C	Accepted		<button>View</button>
2	3	Suyash Bhatia	7042757709	Chandigarh	QRVBT5257M	Accepted		<button>View</button>
3	2	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	TEDRS5044N	Accepted		<button>View</button>
4	1	Aditya Chopra	9672836724	Mumbai City (ex Bombay)	HIOPI7654V	Accepted		<button>View</button>

Fig: 6.1.2 Farmer Profile Managed by Admin

The screenshot shows a web application interface titled 'TAPSHIP'. At the top right, there are links for 'DASHBOARD', 'ABOUT', 'FAQ', 'View Profile', and 'Log Out'. Below this is a dark header bar with the title 'Manage Customers'. The main content area contains a table with the following columns: Sr. No., ID, Name, Mobile, City, Type, Status, Photo, and Profile. There are four rows of data:

Sr. No.	ID	Name	Mobile	City	Type	Status	Photo	Profile
1	4	Altop Industries Pvt. Ltd.	9782507934	Vishakhapatnam	Organization	Accepted		<button>View</button>
2	3	Gautam Birla	9661442323	Agra	Wholesaler	Accepted		<button>View</button>
3	2	Harshad Mehta & Industry Pvt. Ltd.	7042757709	West Delhi	Organization	Accepted		<button>View</button>
4	1	Salman Khan	9672836724	Davanagere	Wholesaler	Accepted		<button>View</button>

Fig: 6.1.3 Customer Profile Managed by Admin

The screenshot shows a web application interface titled 'TAPSHIP'. At the top right, there are links for 'DASHBOARD', 'ABOUT', 'FAQ', 'View Profile', and 'Log Out'. Below this is a dark header bar with the title 'Manage Drivers'. The main content area contains a table with the following columns: Sr. No., ID, Name, Mobile, City, DL Number, Vehicle Number, Status, Photo, and Profile. There are four rows of data:

Sr. No.	ID	Name	Mobile	City	DL Number	Vehicle Number	Status	Photo	Profile
1	4	Venkatesh Tej	7042757709	Hyderabad	TG7893268429675	TG29CC1797	Accepted		<button>View</button>
2	3	Pankaj Gupta	9782507934	Surat	GJ7528782578285	GJ17UV0007	Accepted		<button>View</button>
3	2	Bhanu Kumar	9661442323	Gwalior	MP6748512784510	MP10TS4602	Accepted		<button>View</button>
4	1	Vivek Singh	9672836724	Katihar	BR5345362784673	BR02HJ5342	Accepted		<button>View</button>

Fig: 6.1.4 Driver profile Managed by Admin

1. Manage Users

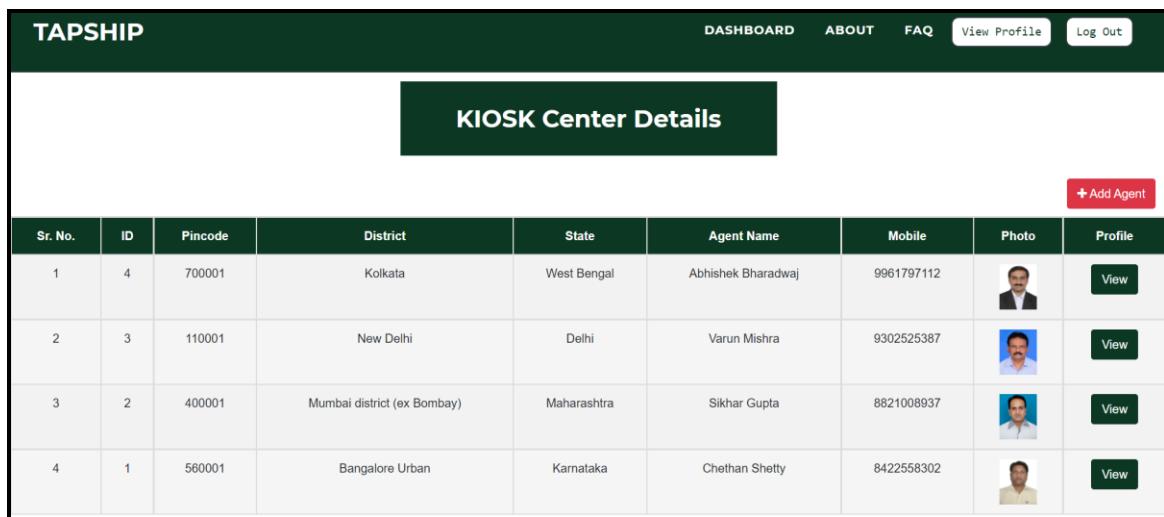
- Admin can verify Farmer, Customer and Drivers account and also they have power to unverify it in special case.
- Admin is able to see all the details and transaction related to any type of user.
- They can only view the details and can't change it. If any information is required, admin can request for details from respective users.
- Admin can also add KIOSK centres who will help farmers at Panchayat Office.

2. KIOSK Center

1. Why we have KIOSK centre?

- Persons in KIOSK centre are the special ones who sits at panchayat office.

- All farmers are not able to use our platform as there are some barriers like literacy and technical knowledge.
- To help out them, we have KIOSK centres who will work at panchayat office and farmer can take there help to use the platform



Sr. No.	ID	Pincode	District	State	Agent Name	Mobile	Photo	Profile
1	4	700001	Kolkata	West Bengal	Abhishek Bharadwaj	9961797112		<button>View</button>
2	3	110001	New Delhi	Delhi	Varun Mishra	9302525387		<button>View</button>
3	2	400001	Mumbai district (ex Bombay)	Maharashtra	Sikhar Gupta	8821008937		<button>View</button>
4	1	560001	Bangalore Urban	Karnataka	Chethan Shetty	8422558302		<button>View</button>

Fig: 6.1.5 Kiosk Centre Working People

2. How KIOSK centre will help?

- Designated person from KIOSK centre will first login to their account and after that they have to login with the farmers account whom they are helping.
- Farmer's login will be 2-step secure with password and OTP.
- Once, the designated person from KIOSK centre has login into farmers account, he can add the details to the portal.
- Now, he can help the farmer to select the best deal for their crop.

3. Crop and Activities

- The admin under crop and activities, manages the MSP of each crop sold on to this platform.
- The MSP is calculated as cost of production + 50% of total cost of production, that results in 1.5 times of total cost of production.
- He is responsible for update the MSP data regularly on to this platform.

The screenshot shows a table titled "Crop Details" with the following data:

Sr. No.	Crop Name	Crop Type	Cost of Crop (per kg)	MSP of Crop (in Rs.)	Action
1	Mango	Fruits	₹ 40	₹ 60	<button>Update</button>
2	Tomato	Vegetables	₹ 10	₹ 15	<button>Update</button>
3	Banana	Fruits	₹ 15	₹ 23	<button>Update</button>
4	Carrot	Vegetables	₹ 10	₹ 15	<button>Update</button>

[+ Add Crop](#)

Fig: 6.1.6 MSP of Crop is Managed

The screenshot shows two sections of unsolved queries:

- Please Help Me.**

Raunak Choudhary	9782507934
67, Arbindo Marg, Kalyanpur, Barmer (Rajasthan)	2021-04-22 01:07 AM
raunakc77@gmail.com	<button>View Message</button>
- Lockdown Problem**

Ganpat Patel	9672836724
569, Rajiv Nagar, Kundapura, Udupi (Karnataka)	2021-04-23 02:00 PM
gapu.012@gmail.com	<button>View Message</button>

Fig: 6.1.7 Query Zone

4. Queries and Help

- Admin can see queries raised by farmers, customer and drivers.
- He can solve those problems and also provide expert advice to them.

6.2 Farmer

Step 1: Sign Up

1 →

2 →

SUBMIT

Fig: 6.2.1 Farmer Attributes

- After sign up, the new user will be unverified initially i.e. whenever user tries to login, user will get pending status to wait until his/her account gets verified.
- Note: The Admin can see all the farmers requests to create the new account and verify the details of the farmer.
- Once farmer's account is verified, then he/she can login to the platform.
- **Step 2: Log In**
 - There are 2 ways to login:
 1. User will login by himself or herself.
 2. User will login through the help provided by KIOSK Centre at Panchayat office.

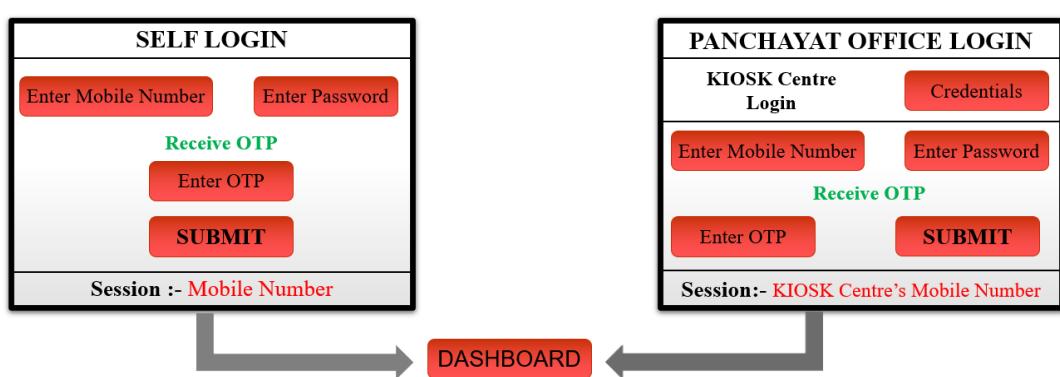


Fig: 6.2.2 Farmer Login

The screenshot shows the **Farmer Dashboard** with the following sections:

- Weather Forecast:** Saturday, 19 June 2021, Mangaluru. Current Temperature: 25.54°C, Mist. Weather conditions: Clouds 90%, Humidity 83%, Feels Like 26.32°C, Dew Point 22.44°C, Wind Speed 6.69 km/h, Sunrise Time 06:05 AM, Sunset Time 06:58 PM.
- Add New Crop:** Icon of hands holding a plant with a plus sign. Button: Add New Crop.
- Total Active Crop:** Total Active Crop: 2. Button: View Active Crop.
- Total Sold Crop:** Total Sold Crop: 0. Button: View Sell History.
- MEP Tracking:** Icon of a document with a magnifying glass. Button: View MEP.
- Help Zone:** Icon of a hand pointing. Button: Ask the Expert.
- Knowledge Zone:** Icon of a lightbulb. Button: Know More.

Fig: 6.2.3 Farmer Dashboard

DASHBOARD has following options:

- Add new crop
- View Active Crop
- Completed Sell
- MEP Tracking
- Help Zone
- Knowledge Zone

The screenshot shows the 'Add New Crop' page. At the top, there is a navigation bar with links for DASHBOARD, ABOUT, FAQ, View Profile, and Log Out. Below the navigation bar, the main title 'Add New Crop' is centered. The form fields include:

- Crop Type: A dropdown menu showing 'Vegetables'.
- Crop Name: A dropdown menu showing 'Potato' with a 'View MSP' button next to it.
- Quantity (in kgs.): An input field containing '72'.
- Minimum Expected Price (per kgs.): An input field containing '20'.
- Image - 01: A file upload input field labeled 'Choose File' with 'potato1.jpg' selected.
- Image - 02: A file upload input field labeled 'Choose File' with 'potato2.jpg' selected.
- Image - 03: A file upload input field labeled 'Choose File' with 'potato3.jpg' selected.
- An 'Add Crop' button at the bottom of the form.

Fig: 6.2.4 Add New Crop Page

1. Add Crop

- Select crop type from below fields



Fig: 6.2.5 Crop Attributes

- Select crop name from drop down menu.
- Enter quantity of crop.
- Enter Minimum Expected Price (MEP) of crop.
- Give 3 good quality photos of the crop.

Sr. No.	Crop ID	Crop Name	Crop Type	Crop Quantity	Crop MEP	Crop MSP	Date	Crop Status	View
1	8	Potato	Vegetables	72 Kgs	₹ 20	₹ 18	2021-06-19	Crop Added	<button>View</button>
2	5	Chilli	Vegetables	75 Kgs	₹ 25	₹ 23	2021-05-23	Bidding	<button>View</button>
3	3	Rice	Feed Crops	85 Kgs	₹ 17	₹ 15	2021-05-23	Tapship Delivery Selection Pending	<button>View</button>

Fig: 6.2.6 Crops Added by Farmer Reflect into Active Crop Section

2. Active Crop

- Newly added crop will get status as active bid.
- Farmer can edit details of crop and also delete the crop details until bidding process gets started.
- Farmer will be able to see all the bids made by customers and their details.
- Farmer can confirm the bid from a customer and close the active bid which will result in status to be set as inactive.
- Once bid is confirmed and status is set as unactive then farmers can see the complete details of the deal here in this section. Farmer can also see:
 - Payment status of the deal.
 - Transport Medium and its details like live location of driver.
 - Whether the crop has reached to the customer or not.
 - Farmer can also print the details of deal in PDF Form.

Sr. No.	Crop ID	Crop Name	Crop Type	Crop Quantity	Crop MEP	Crop MSP	Date	Crop Status	View
1	9	Guava	Fruits	80 Kgs	₹ 40	₹ 38	2021-06-19	Deal Over	<button>View</button>
2	8	Potato	Vegetables	72 Kgs	₹ 20	₹ 18	2021-06-19	Deal Over	<button>View</button>

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Fig: 6.2.7 Complete Sell History of Crop

3. Completed Sell

- In this section, Farmer can see all successful sold crop and payment status.
- Farmer can also print the details of deal in PDF Form.

Sr. No.	Crop Name	Crop Type	Cost of Crop (per kg)	MSP of Crop (in Rs.)	View MEP Trend
1	Mango	Fruits	₹ 40	₹ 60	Click Here
2	Tomato	Vegetables	₹ 10	₹ 15	Click Here
3	Banana	Fruits	₹ 15	₹ 23	Click Here
4	Carrot	Vegetables	₹ 10	₹ 15	Click Here
5	Rice	Feed Crops	₹ 10	₹ 15	Click Here

Fig: 6.2.8 MEP Tracking Facility

4. MEP Tracking

- Farmers can also access the MEP tracking facility, under which variations in MEP over a period of time for different crop can be seen.
- This feature is helpful for the farmer while adding the crop for sale, as they can track the prices of various crops to get the maximum benefit.
- The future MEP can be predicted for the crop using various algorithms.

Ask the Expert!!

SUBJECT
Enter Subject of your Issue

MESSAGE
Enter your Issue

SEND MESSAGE

Fig: 6.2.9 Help Zone for Farmer

5. Help Zone

- Farmers can submit their question and ask for advice from experts.
- Say if farmer is not able to use or access our portal, they can ask for help and experts will provide the details of the nearest panchayat KIOSK center.

Knowledge Zone

Latest News and Articles

You can rely on our amazing features list and also our customer services will be great experience for you without doubt

Scientific development of smart farming technologies

The World Government Summit launched a report called Agriculture 4.0 – The Future Of Farming Technology, in collaboration with Oliver Wyman for the 2018 edition of the international event. The report addresses the four main developments placing pressure on agriculture to meeting the demands of the future: Demographics, Scarcity of natural resources, Climate change, and Food waste. The report states that, although demand is continuously growing, by 2050 we will need to produce 70 percent more food. Meanwhile, agriculture's share of global GDP has shrunk to just 3 percent, one-third its contribution just decades ago. Roughly 800 million people worldwide suffer from hunger. And under a business-as-usual scenario, 8 percent of the world's population (or 650 million) will still be undernourished by 2030. The reality is that very little innovation has taken place in the industry of late—in any case, nothing to indicate that food scarcity and hunger will not be an issue in the coming decades. To meet these challenges will require a concerted effort by governments, investors, and innovative agricultural technologies. Agriculture 4.0 will no longer depend on applying water, fertilizers, and pesticides uniformly across entire fields. Instead, farmers will use the minimum quantities required and target very specific areas. The report further states that, farms and agricultural operations will have to be run very differently, primarily due to advancements in technology such as sensors, devices, machines, and information technology. Future agriculture will use sophisticated technologies such as robots, temperature and moisture sensors, aerial images, and GPS technology. These advanced devices and precision agriculture and robotic systems will allow farms to be more profitable, efficient, safe, and environmentally friendly. Governments can play a key part in solving the food scarcity issue. They need to take on a broader and more prominent role than their traditional regulatory and facilitating function. By challenging the traditional legacy model and pursuing such a program, governments can:

- Ensure food security and reduce dependency on imports.
- Become a net exporter not only of products but also IP and new solutions.
- Increase productivity and support the shift towards an innovation- and knowledge-based economy.

Fig: 6.2.10 Knowledge Zone for Farmer

6. Knowledge Zone

- Farmers can read tips and knowledgeable articles to improve their productivity.
- How farmer's can increase their productivity, how they can do organic farming, and also the tips to avoid crop losses and make the farmers aware about their rights and practices .

7. Weather Forecast

- Farmer is the biggest fighter, who can survive in any situation. However, he can't fight weather, he can take preventive measures and precaution to minimize crop losses.
- One way of ensuring good yield of crop is accurate weather forecasts. We are providing one week forecast with real-time weather condition like air and dew temperature, precipitation, and humidity to protect crops and secure a high and healthy yields.

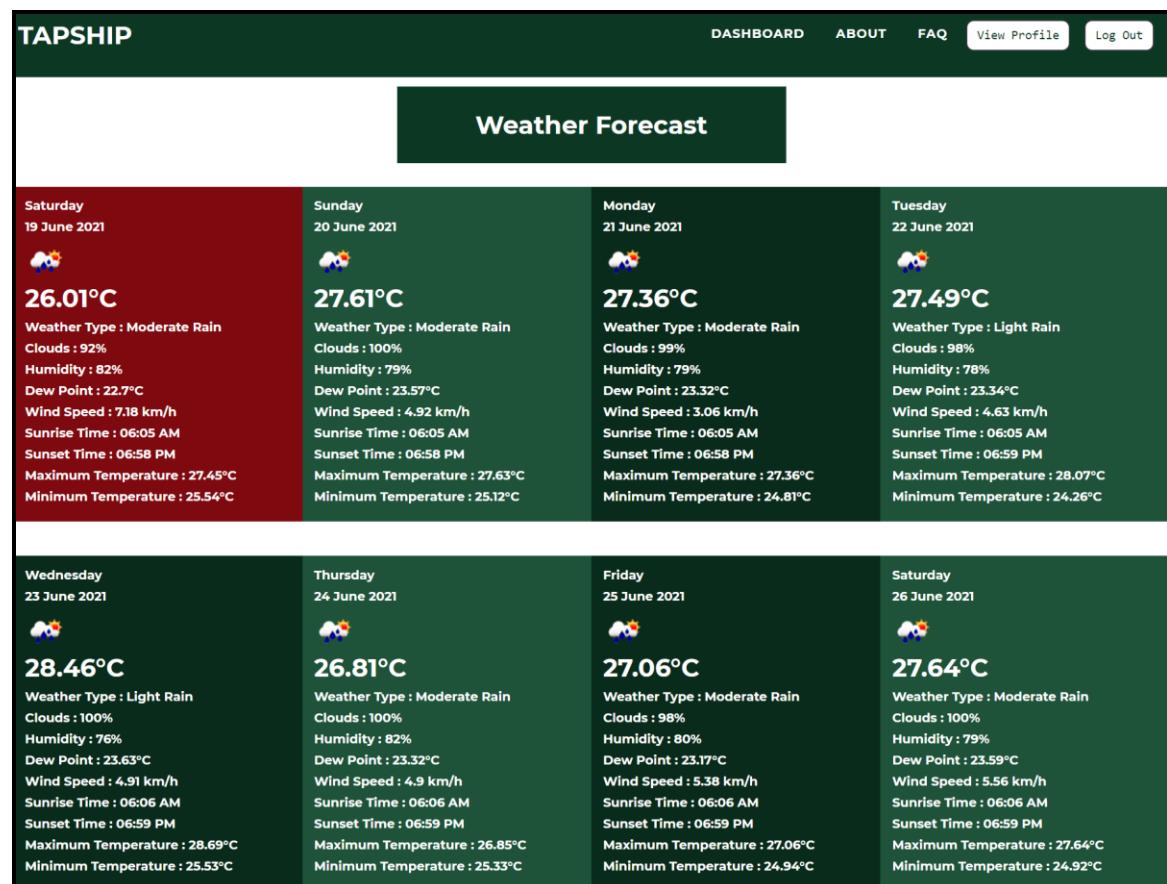


Fig: 6.2.11 Weather Forecast on Farmer Dashboard

6.3 Customer

- **Step 1:** Sign Up

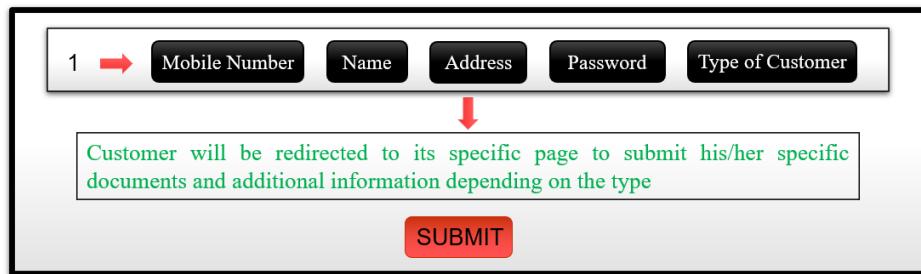


Fig: 6.3.1 Customer Attributes

- After sign up, the new user will be unverified initially i.e. whenever user tries to login, user will get warning to wait until his/her account gets verified.
- Note: The Admin can see all the requests from customers to create the new account and verify the details of the customer.
- Once, the account is verified, the customers can login into their account with their individual credentials.

- **Step 2:** Log In

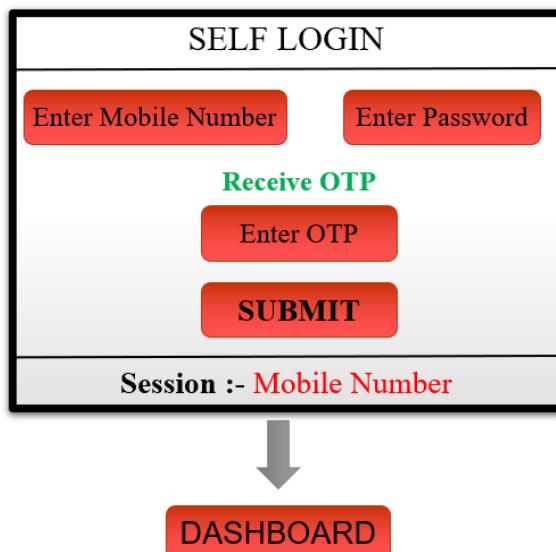


Fig: 6.3.2 Customer Login

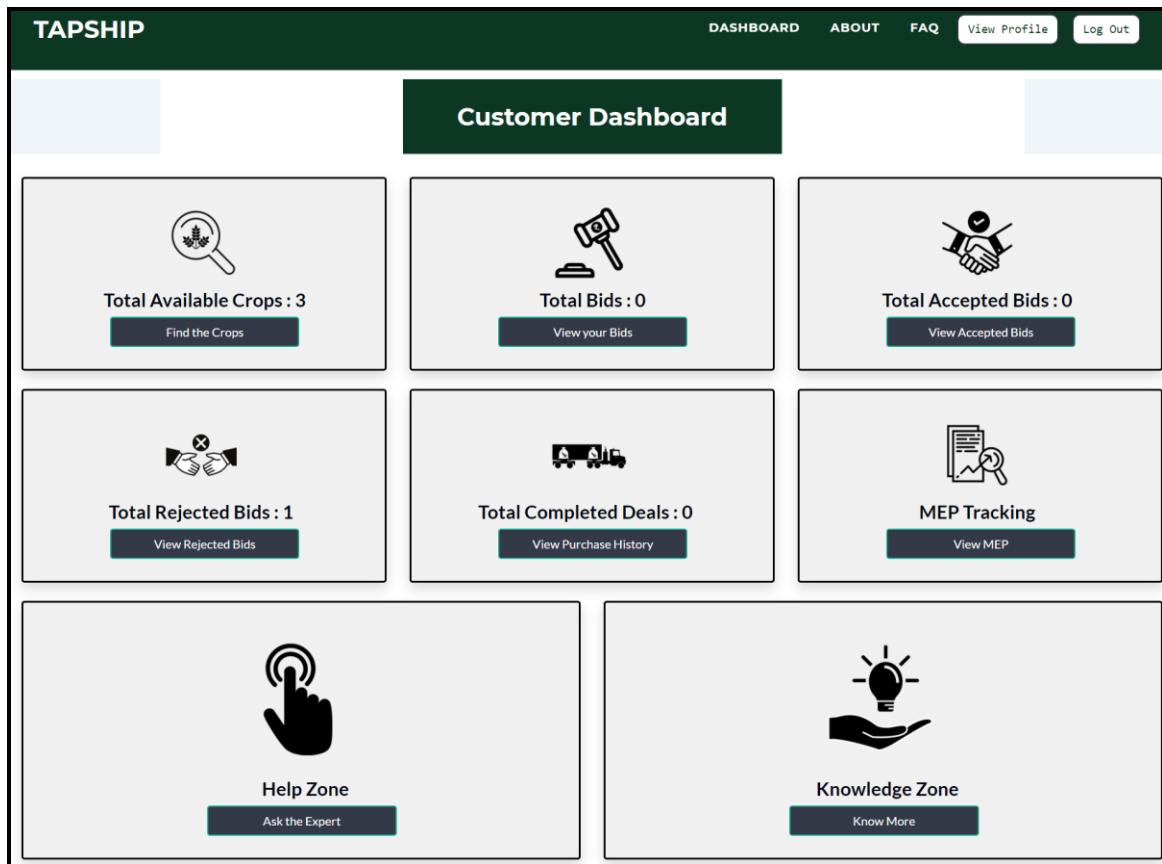


Fig: 6.3.3 Customer Dashboard

1. Find Crop

- Customers will be able to filter the crops as per their requirements.
- They can view details about any specific crop.
- After seeing details, if they are interested then they can go ahead and make an offer or bid for the same.

Sr. No	Crop Name	Crop Type	Crop Quantity (in kgs.)	Crop MSP	Crop MEP	Farmer Name	Farmer Mobile	Farmer City	Distance (in KM)	View
1	Grapes	Fruits	100	45.0	47	Sushant Mishra	9661442323	Nalanda	1151.62	<button>View</button>
2	Potato	Vegetables	72	18.0	20	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	1382.18	<button>View</button>
3	Chilli	Vegetables	75	23.0	25	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	1382.18	<button>View</button>

Fig: 6.3.4 Find Crop Page

Note: Customer will not be allowed to make a bid less than the price set by the farmer. It should be either equals or greater than MEP.

- They will be shown the highest bid for the crop on the same portal as per the current status.
- They will be allowed to edit their bid details until the bid is active for particular crop or they could even withdraw their bid.

The screenshot shows a web application interface for 'TAPSHIP'. At the top, there's a dark green header bar with the 'TAPSHIP' logo on the left and navigation links like 'DASHBOARD', 'ABOUT', 'FAQ', 'View Profile', and 'Log Out' on the right. Below the header is a white section titled 'Active Bids' in bold black text. Underneath this title is a table with 12 columns, each representing a bid entry. The columns are labeled: Sr. No., Bid ID, Crop Name, Crop Quantity, Crop MEP, Crop MSP, Farmer Name, Farmer Mobile, Farmer City, Bid Status, Bid Price (per kgs.), and View. The table contains three rows of data:

Sr. No.	Bid ID	Crop Name	Crop Quantity	Crop MEP	Crop MSP	Farmer Name	Farmer Mobile	Farmer City	Bid Status	Bid Price (per kgs.)	View
1	7	Chilli	75 Kgs	₹ 23	₹ 25	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	Bidding	₹ 26	<button>View</button>
2	13	Guava	80 Kgs	₹ 38	₹ 40	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	Bidding	₹ 42	<button>View</button>
3	14	Potato	72 Kgs	₹ 18	₹ 20	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	Bidding	₹ 22	<button>View</button>

At the bottom of the page, there's a dark green footer bar with the copyright notice '© 2021 TapShip. All rights reserved.'

Fig: 6.3.5 Active Bid Page

2. Crop Bid Requests

- If customer make any bid for crop, he/she will be able to see details of that bid and crop in this section. He/she can even modify or withdraw the bid.
- Bid will be visible in this section until any response from the farmer doesn't arrive.

The screenshot shows a web application interface for 'TAPSHIP'. At the top, there's a dark green header bar with the 'TAPSHIP' logo on the left and navigation links like 'DASHBOARD', 'ABOUT', 'FAQ', 'View Profile', and 'Log Out' on the right. Below the header is a white section titled 'Accepted Bids' in bold black text. Underneath this title is a table with 12 columns, each representing a bid entry. The columns are labeled: Sr. No., Bid ID, Crop Name, Crop Quantity, Crop MEP, Crop MSP, Farmer Name, Farmer Mobile, Farmer City, Crop Status, Bid Price (per kgs.), and View. The table contains two rows of data:

Sr. No.	Bid ID	Crop Name	Crop Quantity	Crop MEP	Crop MSP	Farmer Name	Farmer Mobile	Farmer City	Crop Status	Bid Price (per kgs.)	View
1	13	Guava	80 Kgs	₹ 40	₹ 38	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	Bid Accepted	₹ 42	<button>View</button>
2	14	Potato	72 Kgs	₹ 20	₹ 18	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	Bid Accepted	₹ 22	<button>View</button>

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Fig: 6.3.6 Accepted Bids Page

3. Accepted Bids

- The customer will be able to see the confirmed bid/deal in this section if farmer shows any interest in his/her bid and confirm the bid/deal.
- Once the deal is confirmed, customers will have to inform that whether they need a transportation service from TapShip or they can do the transportation on their own.
- If customers choose to carry transportation on their own then they will have to provide all details about vehicle and driver.
- If customers choose to carry transportation on their own then details filled by customer will be updated in this section.
- Else, drivers who are already registered and connected with TapShip will bid for the deal.

Sr. No.	Bid ID	Crop Name	Crop Quantity	Crop MEP	Crop MSP	Farmer Name	Farmer Mobile	Farmer City	Bid Price (per kgs.)	Crop Status	View
1	12	Corn	70 Kgs	₹ 24	₹ 21	Suyash Bhatia	7042757709	Chandigarh	₹ 25		<button>View</button>
2	8	Rice	85 Kgs	₹ 17	₹ 15	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	₹ 18		<button>View</button>

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Fig: 6.3.7 Rejected Bids Page

4. Rejected Bids

- All the rejected deals can be seen on this page.

5. Completed Purchase

- In this section, Customer can see all successful bids after transportation is completed.
- Customer can also print the details of deal in PDF Form.

The screenshot shows the 'Purchase History' section of the TapShip application. At the top, there are navigation links: DASHBOARD, ABOUT, FAQ, View Profile, and Log Out. Below this is a table with the following columns: Sr. No., Bid ID, Crop Name, Crop Quantity, Crop MEP, Crop MSP, Farmer Name, Farmer Mobile, Farmer City, Bid Price (per kgs.), and View. The table contains three rows of data:

Sr. No.	Bid ID	Crop Name	Crop Quantity	Crop MEP	Crop MSP	Farmer Name	Farmer Mobile	Farmer City	Bid Price (per kgs.)	View
1	1	Mango	75 Kgs	₹ 62	₹ 60	Aditya Chopra	9672836724	Mumbai City (ex Bombay)	65	<button>View</button>
2	13	Guava	80 Kgs	₹ 40	₹ 38	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	42	<button>View</button>
3	14	Potato	72 Kgs	₹ 20	₹ 18	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	22	<button>View</button>

At the bottom of the page, a copyright notice reads: © 2021 TapShip. All rights reserved.

Fig: 6.3.8 Purchase History

The screenshot shows the 'Crop Details' section of the TapShip application. At the top, there are navigation links: DASHBOARD, ABOUT, FAQ, View Profile, and Log Out. Below this is a table with the following columns: Sr. No., Crop Name, Crop Type, Cost of Crop (per kg), MSP of Crop (in Rs.), and View MEP Trend. The table contains five rows of data:

Sr. No.	Crop Name	Crop Type	Cost of Crop (per kg)	MSP of Crop (in Rs.)	View MEP Trend
1	Mango	Fruits	₹ 40	₹ 60	<button>Click Here</button>
2	Tomato	Vegetables	₹ 10	₹ 15	<button>Click Here</button>
3	Banana	Fruits	₹ 15	₹ 23	<button>Click Here</button>
4	Carrot	Vegetables	₹ 10	₹ 15	<button>Click Here</button>
5	Rice	Feed Crops	₹ 10	₹ 15	<button>Click Here</button>

Fig: 6.3.9 MEP Tracking Facility

6. MEP Tracking

- Farmers can also access the MEP tracking facility, under which variations in MEP over a period of time for different crop can be seen.
- This feature is helpful for the farmer while adding the crop for sale, as they can track the prices of various crops to get the maximum benefit.
- The future MEP can be predicted for the crop using various algorithms.

7. Help Zone

- Customers can submit their question and ask for advice from experts.
- Any transaction failure, or problem related to platform, can be raised.

Ask the Expert!!

SUBJECT
Enter Subject of your Issue

MESSAGE
Enter your Issue

SEND MESSAGE

Fig: 6.3.10 Help Zone for Customer

Knowledge Zone

Latest News and Articles
You can rely on our amazing features list and also our customer services will be great experience for you without doubt

Buying Strategies And Dealing With Suppliers

To be successful in retail, it is essential to stock the right products, at the right time and at the right price. To do this, you must be able to source your products from the best and most reliable supplier that you can. This is not always an easy thing to do. Obviously you need to establish the product lines you are going to sell from a supplier that will be consistent and reliable.

Identifying your Niche

Before you begin the process of sourcing your stock, it is always a good idea to visit a competitor store to see what they are stocking and what price levels they are retailing at. Try to gain some idea of the brand names that are being sold and decide which seem to

Fig: 6.3.11 Knowledge Zone for Customer

8. Knowledge Zone

- Customers can read tips and knowledgeable articles to gain maximum benefits while trading on this platform.

6.4 Driver

• Step 1: Sign Up

1 →	Mobile Number	Name	Gender	Age	Address	Password
2 →	Photo (Passport Size)	Aadhar Number	Aadhar Card (in PDF)	D.L. Number	D.L. Card (in PDF)	
	Vehicle Number	Vehicle RC (in PDF)	PAN Number	PAN Card (in PDF)		
SUBMIT						

Fig: 6.4.1 Driver Attributes

- After sign up, the new driver's account will be unverified initially i.e., whenever user tries to login, user will get warning to wait until his/her account gets verified.
Note: Admin can see the requests from driver to create a new account and verify their accounts.
- Once, the account is verified, the drivers can login into their account with their individual credentials.

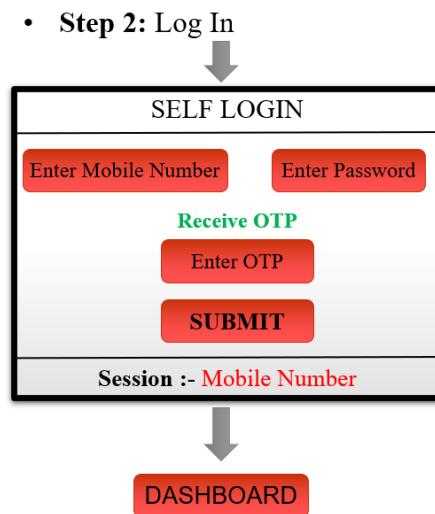


Fig: 6.4.2 Driver Login

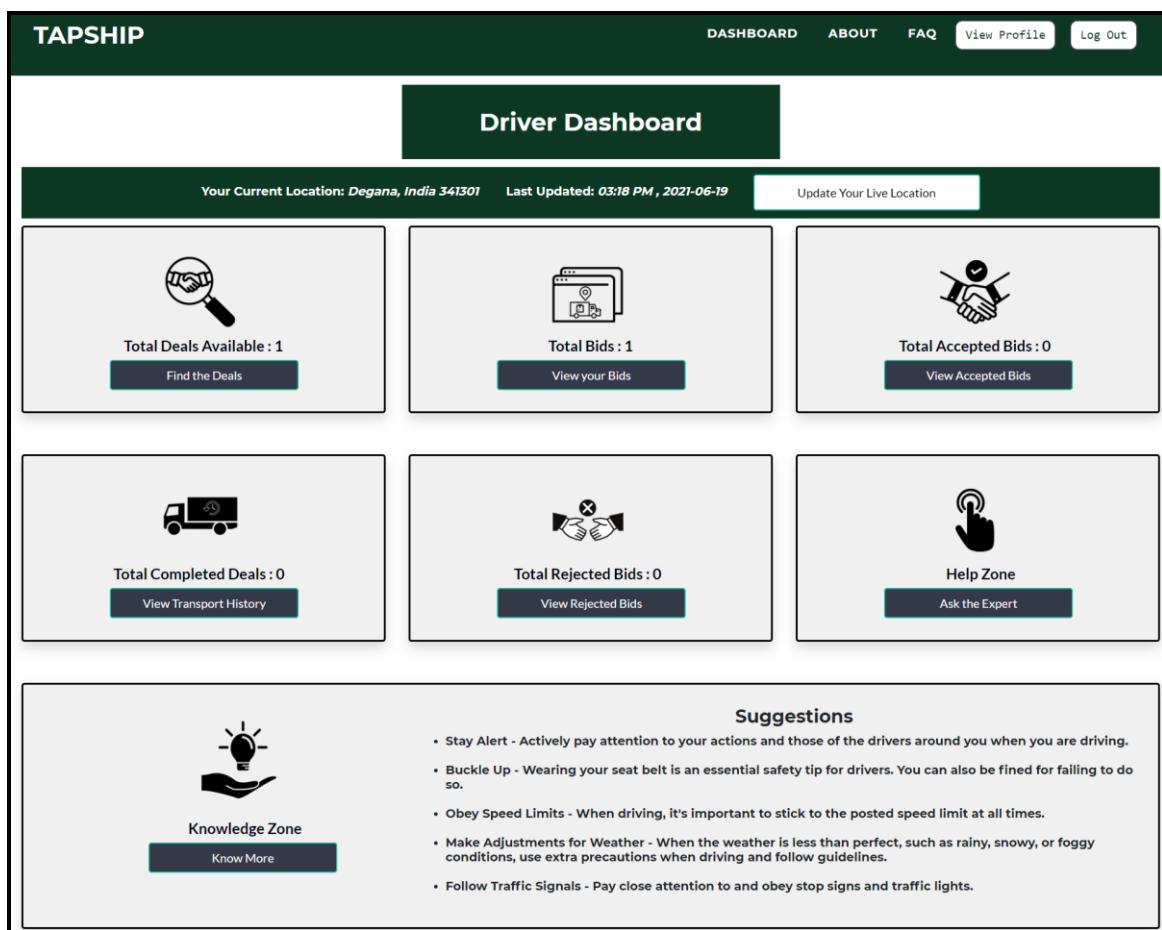


Fig: 6.4.3 Driver Dashboard

Sr. No	Crop Name	Crop Type	Crop Quantity	Customer Name	Customer Mobile	Customer City	Customer Pincode	Farmer Name	Farmer Mobile	Farmer City	Farmer Pincode	Distance (in KM)	View
1	Corn	Feed Crops	70	Salman Khan	9672836724	Davanagere	577001	Suyash Bhatia	7042757709	Chandigarh	160027	600.07	<button>View</button>
2	Guava	Fruits	80	Harshad Mehta & Industry Pvt. Ltd.	7042757709	West Delhi	110015	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	574142	1880.94	<button>View</button>

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Fig: 6.4.4 Find Transport Deals

1. Find Deals

- If a customer chooses Tapship delivery transportation service then the request will be shown to all nearby drivers.
- The drivers will get a recommendation for deals based on their location and they can also filter the results.
- If the driver likes the deal and is interested then, he can go ahead and make a bid to the transport.

Sr. No.	Crop Name	Crop Quantity	Farmer Name	Farmer Mobile	Farmer City	Customer Name	Customer Mobile	Customer City	Bid ID	Transport Bid	View
1	Rice	85 Kgs	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	Gautam Birla	9661442323	Agra	5	₹ 8300	<button>View</button>
2	Guava	80 Kgs	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	Harshad Mehta & Industry Pvt. Ltd.	7042757709	West Delhi	7	₹ 7500	<button>View</button>

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Fig: 6.4.5 Active Transport Bid Details

2. Transport Bid requests

- Once, the driver has made the bid then, they can see the details of that bid in this section and they can also modify and withdraw the bid.
- Driver can also see rejected bids and move them to history.

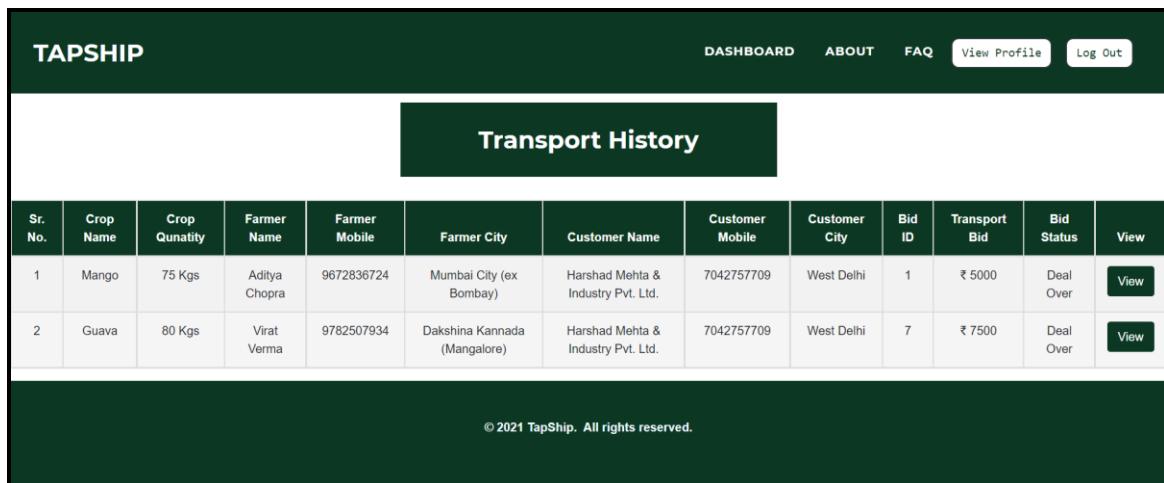
Sr. No.	Crop Name	Crop Quantity	Farmer Name	Farmer Mobile	Farmer City	Customer Name	Customer Mobile	Customer City	Bid ID	Transport Bid	View
1	Guava	80 Kgs	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	Harshad Mehta & Industry Pvt. Ltd.	7042757709	West Delhi	7	₹ 7500	<button>View</button>

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Fig: 6.4.6 Accepted Bids Page

3. Accepted Bids

- If customers shows interest in any of the bid then, they can confirm from their side and driver can see the details in this section.
- Drivers can now accept that deal from customer and will get all the details for transportation.



The screenshot shows a table titled "Transport History" with two rows of data. The columns represent various details of the transport deals, including crop name, quantity, farmer information, customer information, bid ID, transport bid, and bid status. Each row has a "View" button.

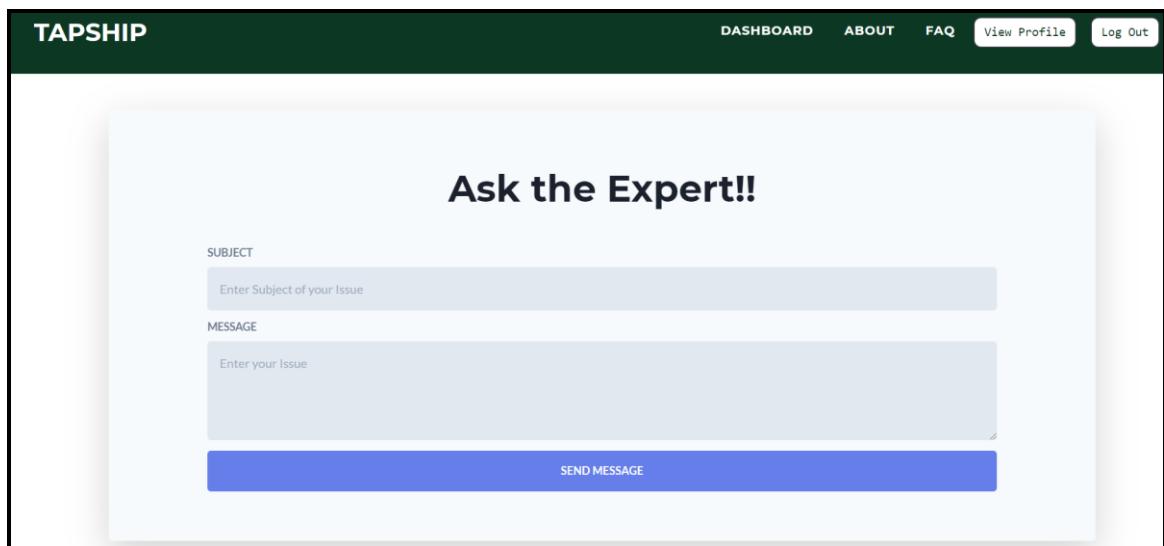
Sr. No.	Crop Name	Crop Quantity	Farmer Name	Farmer Mobile	Farmer City	Customer Name	Customer Mobile	Customer City	Bid ID	Transport Bid	Bid Status	View
1	Mango	75 Kgs	Aditya Chopra	9672836724	Mumbai City (ex Bombay)	Harshad Mehta & Industry Pvt. Ltd.	7042757709	West Delhi	1	₹ 5000	Deal Over	<button>View</button>
2	Guava	80 Kgs	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	Harshad Mehta & Industry Pvt. Ltd.	7042757709	West Delhi	7	₹ 7500	Deal Over	<button>View</button>

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Fig: 6.4.7 Completed Transport Deals

4. Completed Deals

- Drivers can see details regarding their past deals and also view the payment status of the deals.
- They can also track rejected bids.



The screenshot shows a form titled "Ask the Expert!!" with fields for "SUBJECT" and "MESSAGE". There is a large text area for the message and a blue "SEND MESSAGE" button at the bottom.

Fig: 6.4.8 Help Zone for Drivers

5. Help Zone

- Drivers can submit their queries or problems and ask for advice from experts.



Fig: 6.4.9 Knowledge Zone for Drivers

6. Knowledge Zone

- Drivers can read tips and knowledgeable articles regarding safe driving.
- Suggestion provide to them to take safety measures and follow protocol in bad weather condition.

BIDDING AND SALES SYSTEM

We consider that a simple and understandable process for operation on our platform will be turning point for our application. We tried our best to make our system easy to use for everyone. Our bidding and sales system consist total 12 step, which are described as follow-

7.1 Crop Listing

Farmers will list their crop details on the portal with the details like crop type, crop name, quantity of crop, MEP (minimum expected price) and 3 images of the crop. Here minimum expected price is desired price by farmer which can have a maximum value of 25% more than MSP (minimum selling price). Farmer can edit or delete his crop listing before someone made first bid.

The screenshot shows the 'Add New Crop' interface. At the top, there's a dark header bar with the 'TAPSHIP' logo on the left and navigation links for 'DASHBOARD', 'ABOUT', 'FAQ', 'View Profile', and 'Log Out' on the right. Below the header is a large white form area with a dark green header titled 'Add New Crop'. The form fields are as follows:

- Crop Type:** A dropdown menu showing 'Vegetables'.
- Crop Name:** An input field showing 'Potato' with a 'View MSP' button next to it.
- Quantity (in kgs.):** An input field showing '72'.
- Minimum Expected Price (per kgs.):** An input field showing '20'.
- Image - 01:** A file upload input field showing 'Choose File potato1.jpg'.
- Image - 02:** A file upload input field showing 'Choose File potato2.jpg'.
- Image - 03:** A file upload input field showing 'Choose File potato3.jpg'.
- Add Crop:** A large red button at the bottom of the form.

Fig: 7.1.1 Listing Crop

7.2 Finding Crop

Once farmers list their crop on the platform, customers can go to find crops option and find crop based on their location. We used Bing map API to filter the results based on customer's location. Using Bing map API, we are calculating distance between farmer's location and customer's location. After this we are filtering nearby crops to customers.

Sr. No	Crop Name	Crop Type	Crop Quantity (in kgs.)	Crop MSP	Crop MEP	Farmer Name	Farmer Mobile	Farmer City	Distance (in KM)	View
1	Grapes	Fruits	100	45.0	47	Sushant Mishra	9661442323	Nalanda	1166.79	<button>View</button>
2	Guava	Fruits	80	38.0	40	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	2209.64	<button>View</button>
3	Potato	Vegetables	72	18.0	20	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	2209.64	<button>View</button>

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Fig: 7.2.1 Finding Crop

7.3 Crop Bidding and Selection

After finding a desired crop customer can put his/her bid for that crop. This bid amount must be greater than farmers MSP. In the same manner multiple customers can put bid for a crop. On the other hand, farmer can see all the bids made by customers. Then farmer will select best bid out of all the bids and all other bids will be automatically got rejected. Customers also can see their bid status like whether it got accepted or rejected.

Crop Details

Crop ID	13	Crop Name	Guava
Crop Type	Fruits	Crop Sale ID	9
Minimum Selling Price (per kgs.)	₹ 38	Minimum Expected Price (per kgs.)	₹ 40
Quantity	80 Kgs	Date	2021-06-19

Farmer Details

Farmer Name	Virat Verma	Farmer Mobile	9782507934
Farmer Gender	Male	Farmer Age	30
Farmer Street	BB-20, Near Kadri Manjunath Temple	Farmer City	Dakshina Kannada (Mangalore)
Farmer State	Karnataka	Farmer Pincode	574142

Place Bid

Fig: 7.3.1 Crop Bidding

7.4 Crop Payment

Once bid is accepted customer will get payment option to finish payment with customer. Here he will able to see farmer's bank details. Then he will make a payment through IMPS/NEFT/RTGS and then update same with transaction id and transaction proof to the application. After that payment details will be shared with farmer and these payment details can be confirmed by farmer.

Payment Type

- IMPS
- NEFT
- RTGS

Transaction ID

Transaction Proof (PDF/Photo)

Choose File: TRANSPROOF.pdf

Make Payment

Fig: 7.4.1 Crop Payment

7.5 Transportation Choice

Once the payment details are confirmed by farmer, transportation selection option will be available on the customer's platform. Here customer will have two option to select, first option, self-transport, second option, TapShip Delivery. Customer can go ahead with his desired option.

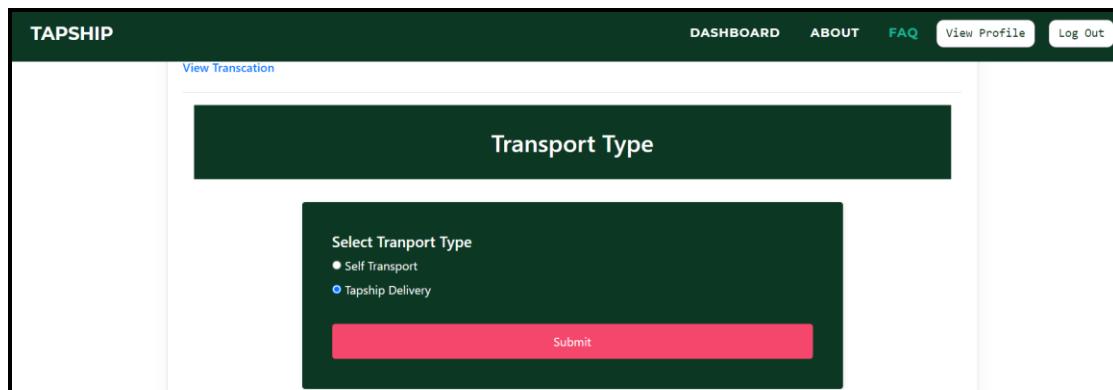


Fig: 7.5.1 Transportation Choice

7.6 Self Transport

First option is self-transport. As the name suggests, customer can opt for a transport service where he will send his own vehicle to bring the crop shipment from framers' location to customers location. If customer want to go ahead with this option, he needs to provide details like driver name, driver mobile number and vehicle number. On the other side farmer will also able to see details of transport.

 A screenshot of the same web application interface as Fig 7.5.1. The 'Transport Type' section is visible, but the 'Self Transport' radio button is selected. Below it, three input fields are shown: 'Driver Name' (Ankur Shetty), 'Driver Mobile Number' (8457652134), and 'Vehicle Number' (KA25CT4820). The 'Submit' button is at the bottom of the form.

Fig: 7.6.1 Self Transport

7.7 Self Transport Driver Arrival

Once driver submit self-transport details, driver will travel to farmers location where its farmer will give crop to driver and update that he gave the crop shipment to driver. Then that driver will again travel to customer's location and customer will confirm that he got the crop shipment. Thus, deal will get over. And both farmer and customer will get thank you message.

Crop Details

Crop ID: 14
Crop Type: Vegetables
Minimum Selling Price (per kgs.): ₹ 18
Quantity: 72 Kgs
Crop Status: Self Transport Selected

Crop Name: Potato
Crop Sale ID: 8
Minumun Expected Price (per kgs.): ₹ 20
Date: 2021-06-19

Customer Details

Customer Type: Organization
Customer Mobile: 7042757709
Customer Gender: Male
Customer Street: DLF Mansion, Chandi Chowk
Customer State: Delhi

Customer Name: Harshad Mehta & Industry Pvt. Ltd.
Customer Contact Name: Vinod Mehta
Customer Age: 35
Customer City: West Delhi
Customer Pincode: 110015

Bid Details

Bid ID: 14
Bid Total Amount: ₹ 1584

Bid Price: ₹ 22
Bid Status: Delivery Pending

Payment Details

Payment Type: IMPS
Transaction Proof: View Transcation

Transaction ID: 9846518947458585

Transport Details

Medium: Self Transport
Driver Mobile: 8457652134

Driver Name: Ankur Shetty
Vehicle Number: KA25CT4820

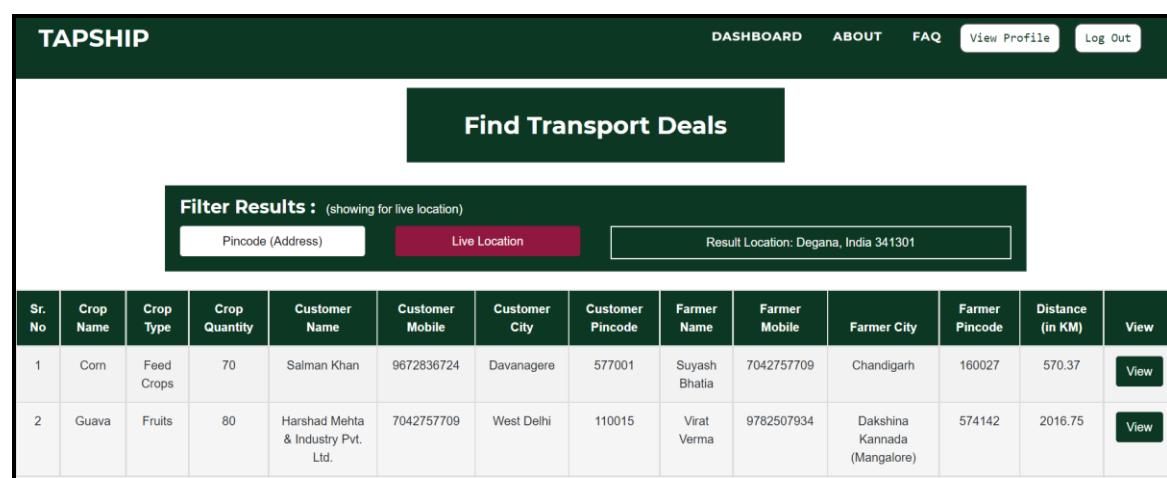
Driver Ankur Shetty has picked up 72 kgs. of Potato to deliver it to Harshad Mehta & Industry Pvt. Ltd.

Confirm Pickup

Fig: 7.7.1 Self Transport Driver Arrival

7.8 TapShip Delivery Deals and Bidding

If customer opt for second option that is TapShip Delivery, then all the drivers registered on the platform will be able to see details regarding shipment. Now driver will able to filter results based on live location and his address. Driver can go through the details and put his bid for transport charge. In the same manner multiple drivers will make bids for one crop shipment.



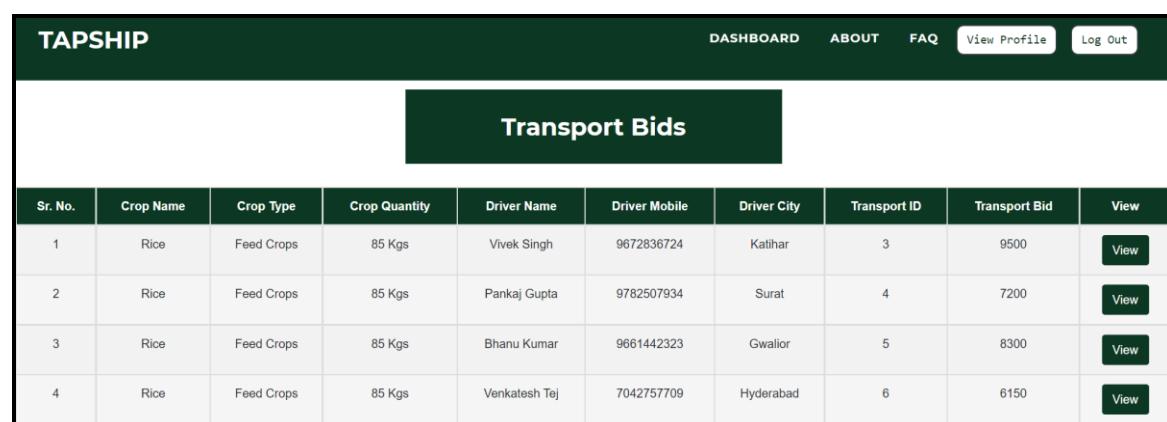
The screenshot shows the TapShip platform's interface for finding transport deals. At the top, there is a navigation bar with links for Dashboard, About, FAQ, View Profile, and Log Out. Below the navigation bar, a large button labeled "Find Transport Deals" is centered. Underneath this button, a section titled "Filter Results : (showing for live location)" contains three input fields: "Pincode (Address)", "Live Location", and a result location box showing "Result Location: Degana, India 341301". The main content area displays a table of transport deals with the following columns: Sr. No, Crop Name, Crop Type, Crop Quantity, Customer Name, Customer Mobile, Customer City, Customer Pincode, Farmer Name, Farmer Mobile, Farmer City, Farmer Pincode, Distance (in KM), and a "View" button. Two rows of data are shown:

Sr. No	Crop Name	Crop Type	Crop Quantity	Customer Name	Customer Mobile	Customer City	Customer Pincode	Farmer Name	Farmer Mobile	Farmer City	Farmer Pincode	Distance (in KM)	View
1	Corn	Feed Crops	70	Salman Khan	9672836724	Davanagere	577001	Suyash Bhatia	7042757709	Chandigarh	160027	570.37	<button>View</button>
2	Guava	Fruits	80	Harshad Mehta & Industry Pvt. Ltd.	7042757709	West Delhi	110015	Virat Verma	9782507934	Dakshina Kannada (Mangalore)	574142	2016.75	<button>View</button>

Fig: 7.8.1 TapShip Delivery Deals and Bidding

7.9 Select Best Bid

Now once drivers made bids for transport, customer will be able to see all the bids from different-different drivers. Then he can select best bid out of those all bids. Drivers will also able to see same details that his bid got accepted.



The screenshot shows the TapShip platform's interface for viewing transport bids. At the top, there is a navigation bar with links for Dashboard, About, FAQ, View Profile, and Log Out. Below the navigation bar, a large button labeled "Transport Bids" is centered. The main content area displays a table of transport bids with the following columns: Sr. No., Crop Name, Crop Type, Crop Quantity, Driver Name, Driver Mobile, Driver City, Transport ID, Transport Bid, and a "View" button. Four rows of data are shown:

Sr. No.	Crop Name	Crop Type	Crop Quantity	Driver Name	Driver Mobile	Driver City	Transport ID	Transport Bid	View
1	Rice	Feed Crops	85 Kgs	Vivek Singh	9672836724	Katihar	3	9500	<button>View</button>
2	Rice	Feed Crops	85 Kgs	Pankaj Gupta	9782507934	Surat	4	7200	<button>View</button>
3	Rice	Feed Crops	85 Kgs	Bhanu Kumar	9661442323	Gwalior	5	8300	<button>View</button>
4	Rice	Feed Crops	85 Kgs	Venkatesh Tej	7042757709	Hyderabad	6	6150	<button>View</button>

Fig: 7.9.1 Select Best Bid

7.10 TapShip Delivery Driver Arrival

After that driver will travel to farmers location and collect the crop shipment. Then driver will confirm on the portal that he got crop shipment as per the details shared with him. Also, farmers will also confirm on the portal that he handover the crop shipment to driver.

Crop Details

Crop ID: 13
Crop Type: Fruits
Minimum Selling Price (per kgs.): ₹ 38
Quantity: 80 Kgs
Crop Status: Tapship Delivery Selected

Crop Name: Guava
Crop Sale ID: 9
Minimun Expected Price (per kgs.): ₹ 40
Date: 2021-06-19

Customer Details

Customer Type: Organization
Organization: Harshad Mehta & Industry Pvt. Ltd.
Customer Mobile: 7042757709
Customer Gender: Male
Customer Street: DLF Mansion, Chandni Chowk
Customer State: Delhi
Customer Name: Vinod Mehta
Customer Contact Name: Vinod Mehta
Customer Age: 35
Customer City: West Delhi
Customer Pincode: 110015

Bid Details

Bid ID: 13
Bid Total Amount: ₹ 3360
Bid Price: ₹ 42
Bid Status: Farmer Pickup Conformation Pending

Payment Details

Payment Type: IMPS
Transaction Proof: [View Transaction](#)
Transaction ID: 748751412963585

Transport Details

Medium: Tapship Delivery
Transport Bid: 7500
Transport ID: 7
Transport Status: Bid Accepted

Driver Details

Driver Name: Bhanu Kumar
Driver Age: 27
Driver License Number: MP674851278450
Driver Address: CC-22, Raj Marg, Near Jai Vilas Palace Gwalior Madhya Pradesh-474004
Driver Mobile: 9661442323
Driver Gender: Male
Vehicle Number: MP10TS4602
Location (Last Updated: 05:14 PM 2021-06-19)
[View Location](#)

Driver Bhanu Kumar has picked up 80 kgs. of Guava to deliver it to Harshad Mehta & Industry Pvt. Ltd.

Confirm Pickup

Fig: 7.10.1 TapShip Delivery Driver Arrival

7.11 Shipment Arrival to Customer

Then driver will travel from farmer's location to customer's location and handover the crop to customer. Customer will confirm the crop receiving on the portal.

Bid Details





Crop Details

Crop ID	13	Crop Name	Guava
Crop Type	Fruits	Crop Sale ID	9
Minimum Expected Price (per kgs.)	₹ 40	Maximum Selling Price (per kgs.)	₹ 38
Quantity	80 Kgs	Date	2021-06-19
Crop Status	Driver Pickup Conformed		

Farmer Details

Farmer Name	Virat Verma	Farmer Mobile	9782507934
Farmer Gender	Male	Farmer Age	30
Farmer Street	BB-20, Near Kadri Manjunath Temple	Farmer City	Dakshina Kannada (Mangalore)
Farmer State	Karnataka	Farmer Pincode	574142

Bank Details

Bank Account Holder	Virat Verma	Account Number	4865792574100
Bank IFSC Code	CNRB0000842	Bank Name	Canara Bank
Bank Branch	Shivbagh, Mangalore		

Bid Details

Bid ID	13	Bid Price	₹ 42
Bid Total Amount	₹ 3360	Bid Status	Customer Delivery Conformation Pending

Payment Details

Payment Type	IMPS	Transaction ID	748751412963585
Transaction Proof	View Transaction		

Transport Details

Medium	Tapship Delivery	Transport ID	7
Transport Bid	7500	Transport Status	Bid Accepted

Driver Details

Driver Name	Bhanu Kumar	Driver Mobile	9661442323
Driver Age	27	Driver Gender	Male
Driver License Number	MP6748512784510	Vehicle Number	MP10TS4602
Location (Last Updated: 05:14 PM 2021-06-19) View Location			

I got 80 kgs. of Guava from Virat Verma which is delivered by Driver Bhanu Kumar

[Confirm Delivery](#)

Fig: 7.11.1 Shipment Arrival to Customer

7.12 Payment to Driver and Finish

Now customer will pay me payment to driver. Driver will also confirm payment and crop delivery to customer on the portal. Thus, deal will be over and everyone farmer, customer and driver will get thank you message.

The screenshot shows the TAPSHIP application's Bid Details page. At the top, there are three images: two close-up shots of potatoes in soil and a wider shot of a potato field. Below the images, the page is divided into several sections:

- Crop Details:**

Crop ID	14	Crop Name	Potato
Crop Type	Vegetables	Crop Sale ID	8
Minimum Expected Price (per kgs.)	₹ 20	Maximum Selling Price (per kgs.)	₹ 18
Quantity	72 Kgs	Date	2021-06-19
Crop Status	Deal Over		
- Farmer Details:**

Farmer Name	Virat Verma	Farmer Mobile	9782507934
Farmer Gender	Male	Farmer Age	30
Farmer Street	BB-20, Near Kadri Manjunath Temple	Farmer City	Dakshina Kannada (Mangalore)
Farmer State	Karnataka	Farmer Pincode	574142
- Bank Details:**

Bank Account Holder	Virat Verma	Account Number	4865792574100
Bank IFSC Code	CNRB0000842	Bank Name	Canara Bank
Bank Branch	Shivbagh, Mangalore		
- Bid Details:**

Bid ID	14	Bid Price	₹ 22
Bid Total Amount	₹ 1584	Bid Status	Deal Over
- Payment Details:**

Payment Type	IMPS	Transaction ID	9846518947458585
Transaction Proof	View Transaction		
- Transport Details:**

Medium	Self Delivery
--------	---------------
- Driver Details:**

Driver Name	Ankur Shetty	Driver Mobile	8457652134
Vehicle Number	KA25CT4820		

At the bottom of the page, there is a note: "Note: - This deal is successfully completed and closed" and a "Thank You for doing business with us" message.

Fig: 7.12.1 Payment to Driver and Finish

This was a detailed discussion about our application's bidding and sales system.

CONCLUSION

We have successfully developed a web application integrated with security features like two-factor authentication, URL encoding and SQL Injection Protection. Our web application – “Tapship” has been proven to be an effective and efficient platform that solve all objectives and problem statements that we considered at the initial phase. Tapship is a platform that gives an opportunity to farmers to set the minimum price of crop as well as it also gives equal opportunities to customers including APMCs, government agencies, etc., to decide the best shipment price and connect all the available truck drivers with customers. It also provides Weather Forecast to farmers which will help farmers to take some critical decisions. On the other hand, our platform gives equal opportunity to customers to bid their own price to their favorable crop and complete the shipment with complete tracking of the shipment. Our platform also provides deals to the drivers associated with us according to their origin location as well as to their current location. Our application provides a facility to farmers through which they can track the values of Minimum Expected Price for a particular crop for the previous 5 transactions. Hence, providing them analytics for the same, we help famers providing them knowledge which can be helpful while listing the crop on our platform. Tapship also provides a helping hand to all the farmers who are not literate enough to understand our platform. Our platform provides a facility of KIOSK Center to such farmers. Tapship is basically made to make life of farmers easier and vanish some of their problems.

FUTURE ENHANCEMENT

Our Web Application – “Tapship” is ready to be a market product. But as it has been said that an application cannot become perfect in one try. We as the developers of Tapship also agrees with same and have some features which can be added to our platform to make it for better, flexible and useful product for farmers, customers and drivers. Some of those features are listed below:

1. To append a crop prediction model which will help farmers to decide the crop depending upon the weather conditions and other factors.
2. To add a chatbot to our application that can take up queries of any user and give them assured reply which might solve their queries.
3. To improve security features. Hence, providing users a safe and trust worthy platform.
4. To setup a system which can assure quality testing of the crops and shipment.
5. To attach a Third-Party Payment Gateway to our platform.
6. To deploy our application on powerful servers along with load balancers so that it can effortlessly store large data.

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CERTIFICATE OF ACHIEVEMENT

Proudly presented to:

- FAHEEM AHMAD
- ASHUTOSH KUMAR
- GANPAT PATEL
- RAUNAK CHOUDHARY

for winning the **First Place** in Project Exhibition in **6th Industry Institute Conclave on Electronics, Computational and Communication Technologies** held at Sahyadri College of Engineering and Management, Mangalore on June 26, 2021 in association with IEEE Mangalore Subsection

Theme: Innovation & Humanitarian Technology

Dr. Rajesha S
Principal, SCEM

Dr. Shamanth Rai
I2CONECCT-2021 Coordinator

Dr. Pushparaj Shetty
IEEE MSS Chairman