

University of Central Missouri  
Missouri Innovation Campus

An Advanced Database Project

MODERN AGRICULTURE

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## Abstract

In recent years technology has increased and the farming techniques have improved a lot. The machinery is making farming easy. Every farmer can't afford machinery. When the crop farming is seasonal, farmers don't require a machine throughout the year. So instead of buying machinery, borrowing for rent is preferable. Sometimes the farmer needs the labour for farming, in that case calling the labour when the farmer needed is preferable. To make machinery and labour available for farmers as per farmer request, We are building the website with four modules named as administrator, machinery provider, labour provider and farmer.

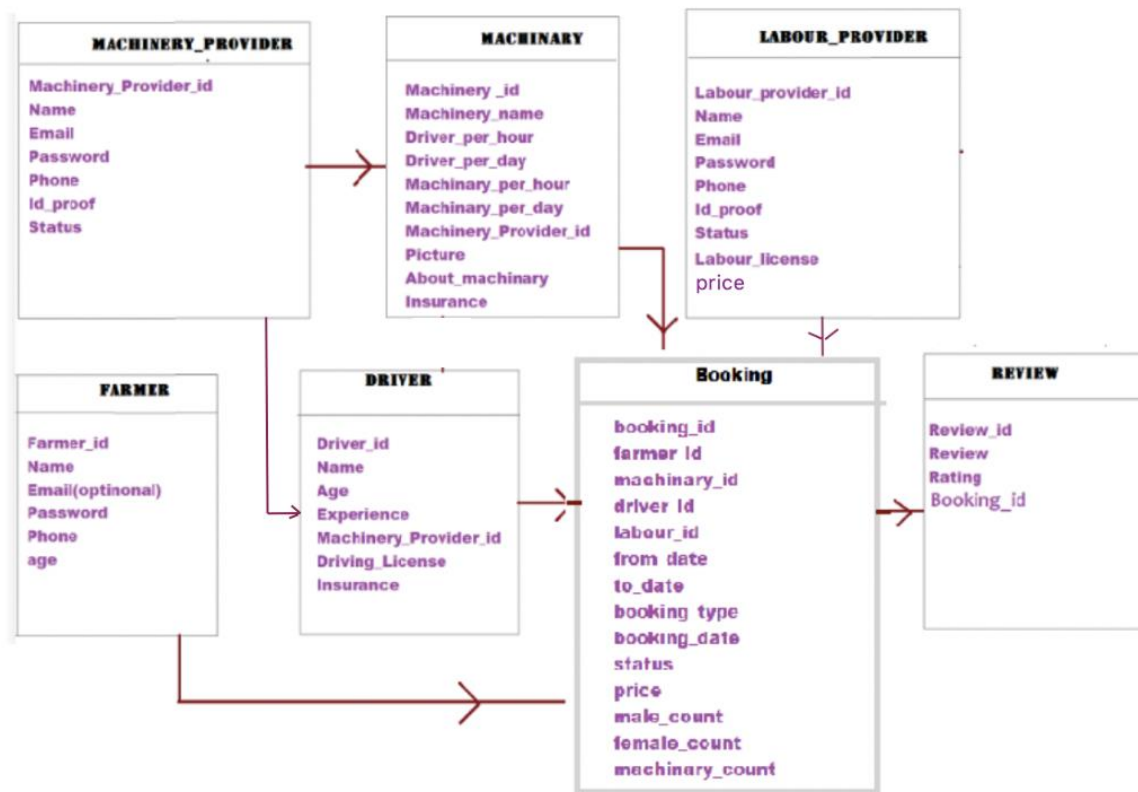
## 1.Description:

Modern Agriculture makes farmers an easy way of farming without buying the equipment. In our project we are using seven collections to manipulate the functionalities.

We named the collections as Machinery\_provider, Machinery, Farmer, Labour, Labour\_provider, Driver, Booking, Review collections.

When the machinery\_provider registers and login then these details will be stored in the machinery\_provider collection, and the machinery\_provider collection stores the information of machinery\_provider name, email, password, phone number, id\_proof, status. When the details of machinery is entered then those details will be stored in the machinery collection. The machinery collection stores the information provided by the machinery\_provider like machinery\_name, machinery\_per\_hour, machinery\_per\_day, drive\_per\_hour, driver\_per\_day, picture of machinery, details about the machinery, insurance of the machinery. When the farmer register and login then these details will be stored in the farmer collection. The farmer collection stores the information of the farmer like name, email, password, phone, age for registration. When the labour provider details are entered then these details will be stored in the labour provider collection. The labour\_provider collection stores the information like labour\_provider name, email, password, phone, id\_proof, status, labour licence. When the driver details are entered then those details will be stored in the driver collection. The driver collection stores the information about the driver like name, age, experience, machinery\_provider\_id, driving licence, insurance of the driver. When the booking details are entered then those details are stored in the booking collection. The booking collection stores the information about by the farmer like booking\_id, farmer\_id from\_date, to\_date, booking\_type, status, booking\_date, farmer\_id, machinery\_id, driver\_id, male\_count, female\_count, price, labour\_id and machinery\_count. When the review is given then these details will be stored in the review collection. The review collection stores the information like review, rating, booking\_id.

## 2. Database Model:



## 3. Collection List:

<b>Booking</b>  Storage size: 20.48 kB Documents: 1 Avg. document size: 317.00 B Indexes: 1 Total index size: 20.48 kB	<b>Driver</b>  Storage size: 20.48 kB Documents: 1 Avg. document size: 180.00 B Indexes: 1 Total index size: 20.48 kB	<b>Farmer</b>  Storage size: 20.48 kB Documents: 1 Avg. document size: 121.00 B Indexes: 1 Total index size: 20.48 kB	<b>Labour_provider</b>  Storage size: 20.48 kB Documents: 1 Avg. document size: 203.00 B Indexes: 1 Total index size: 20.48 kB
<b>Machinery</b>  Storage size: 20.48 kB Documents: 1 Avg. document size: 313.00 B Indexes: 1 Total index size: 24.58 kB	<b>Machinery_provider</b>  Storage size: 20.48 kB Documents: 1 Avg. document size: 170.00 B Indexes: 1 Total index size: 36.86 kB	<b>Review</b>  Storage size: 20.48 kB Documents: 1 Avg. document size: 83.00 B Indexes: 1 Total index size: 20.48 kB	

## 4. Sample Data:

### Machinery\_provider:

```
{
  "_id": {
    "$oid": "63298376d3cb4a71d31cf567"
  },
  "Name": "Duke",
  "Email": "duke@gmail.com",
  "password": "duke@1234",
  "Phone": "6034326425",
  "id_proof": "id_proof.png",
  "status": "wait_for_verification"
}
```

### Machinery:

```
{
  "_id": {
    "$oid": "63298628d3cb4a71d31cf56d"
  },
  "Machinery_name": "Row_crop_tractor",
  "Machinery_per_hour": "$10",
  "Machinery_per_day": "$100",
  "Driver_per_hour": "$5",
  "Driver_per_day": "$20",
  "Picture": "machinary.png",
  "About_machinery": "This tractor is known for its comfort",
  "Insurance": "insurance.png",
  "Machinery_provider_id": {
    "$oid": "63298376d3cb4a71d31cf567"
  }
}
```

### Labour\_provider:

```
{
  "_id": {
    "$oid": "632989d6d3cb4a71d31cf575"
  },
  "Name": "Robert",
  "Email": "robert@gmail.com",
  "password": "robert@123",
  "phone": "16505130514",
  "id_proof": "id_proof.png",
  "status": "requested",
  "labour_licence": "labour_licence.png"
}
```

### Labour:

```
▼ {  
  ▼ {  
    "_id": {  
      "$oid": "632997a0d3cb4a71d31cf578"  
    },  
    "Available_labour_count1": "150",  
    "Male_count": "100",  
    "Female_count": "50",  
    "About_labour": "contribute thier work for more production",  
    "Labour_provider_id": {  
      ▼ {  
        "$oid": "632989d6d3cb4a71d31cf575"  
      }  
    }  
  }  
}
```

### Farmer:

```
▼ {  
  ▼ {  
    "_id": {  
      "$oid": "63299915d3cb4a71d31cf57f"  
    },  
    "Name": "john",  
    "Email": "john@gmail.com",  
    "phone": "14567329858",  
    "password": "john@123",  
    "age": "27"  
  }  
}
```

### Driver:

```
▼ {  
  ▼ {  
    "_id": {  
      "$oid": "6329998ed3cb4a71d31cf582"  
    },  
    "Name": "james",  
    "Age": "30",  
    "Experience": "7 years",  
    "Driving_licence": "driving_lincence.png",  
    "Insurnace": "insurance.png",  
    "Machinary_provider_id": {  
      ▼ {  
        "$oid": "63298376d3cb4a71d31cf567"  
      }  
    }  
  }  
}
```

---

## Booking:

```
{
  "_id": {
    "$oid": "635bb4ca5ac7f140c8b0da67"
  },
  "farmer_id": "63299915d3cb4a71d31cf57f",
  "machinary_id": "63298628d3cb4a71d31cf56d",
  "driver_id": "6329998ed3cb4a71d31cf582",
  "labour_id": "632997a0d3cb4a71d31cf578",
  "from_date": "2022-10-28",
  "to_date": "2022-11-10",
  "booking_type": "hall",
  "booking_date": "2022-10-28",
  "price": "$600",
  "male_count": "5",
  "female_count": "5",
  "machinary_count": "10"
}
```

## Review:

```
{
  "_id": {
    "$oid": "6329a150d3cb4a71d31cf5ad"
  },
  "Review": "good",
  "Rating": "5 stars",
  "Booking_id": {
    "$oid": "634518d7ab3328c742c56219"
  }
}
```

## 5.Functional Requirements:

- The administrator gets login into the with the default credentials.
- The administrator views the machinery provider and authorises the machinery provider.
- The administrator views the machinery provider and authorises the labour provider.
- The machinery provider gets login with the details like username and password only approval of the account by the administrator.
- After getting logged in the machinery provider will be the driver for the machinery.
- The machinery provider can view the driver.
- The machinery provider adds the available machinery into the database.
- The machinery provider can view the machinery added to the database.
- The machinery provider can view the machinery booking.
- The machinery provider views the booking, the machinery provider has the choice to approve the bookings or reject the bookings based on the availability of machinery.
- If the farmer requires the driver then the machinery provider allots the driver and approves the booking.



- The labour provider gets login after the verification of the account by the administrator.
- After getting logged in the labour provider can view the profile.
- The labour provider can view the bookings, the labour provider can accept or reject the bookings.
- The labour provider can view the history.
- The farmer gets registration before login.
- The farmer gets login with the details like email and password.
- The farmer can view the available machinery and book the machinery by selecting the from date to date and driver requirement.
- After selecting the booking date and driver requirement the farmer can view the details and can confirm booking.
- The farmer can view the available labour providers and make booking by selecting from date to date, male count and female count.
- The farmer can view billing details and make it confirm.
- The farmer can view the bookings and the farmer can give reviews and ratings for the booking.

## 6. User Interface and forms:

**login.html:** In this html form, the admin gets login with the default credentials.

**Machinery\_reg.html:** In this html form, the machinery provider gets registration by providing details.

**machinery\_login.html:** In this html form, the machinery provider gets login by providing email and password.

**labour\_provider\_reg.html:** In this html form, the labour provider gets registration by providing details.

**labour\_provider\_reg.html:** In this html form, the labour provider gets login by providing details like email and password.

**farmer\_reg.html:** In this html form, the farmer gets registration by providing details.

**farmer\_login.html:** In this html form, the farmer gets login by providing details like email and password.

**add\_driver.html:** In this html form, the machinery provider adds the driver to the database.

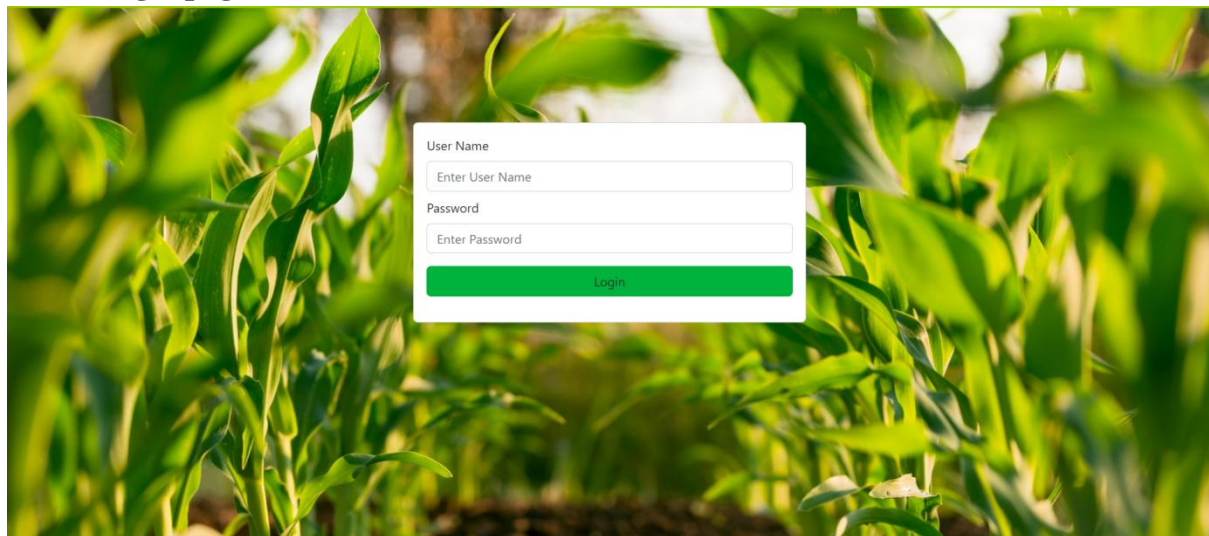
**add\_machinery.html:** In this html form, the machinery provider adds the machinery to the database.

## 7. User Interfaces:

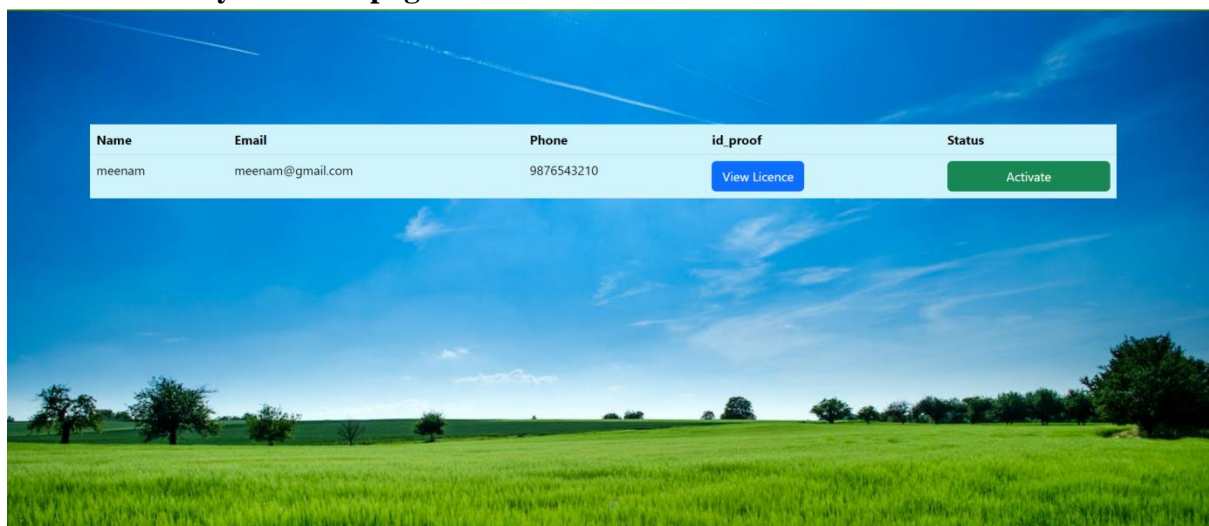
### Home Page:



### Admin login page:



### View Machinery Provider page:



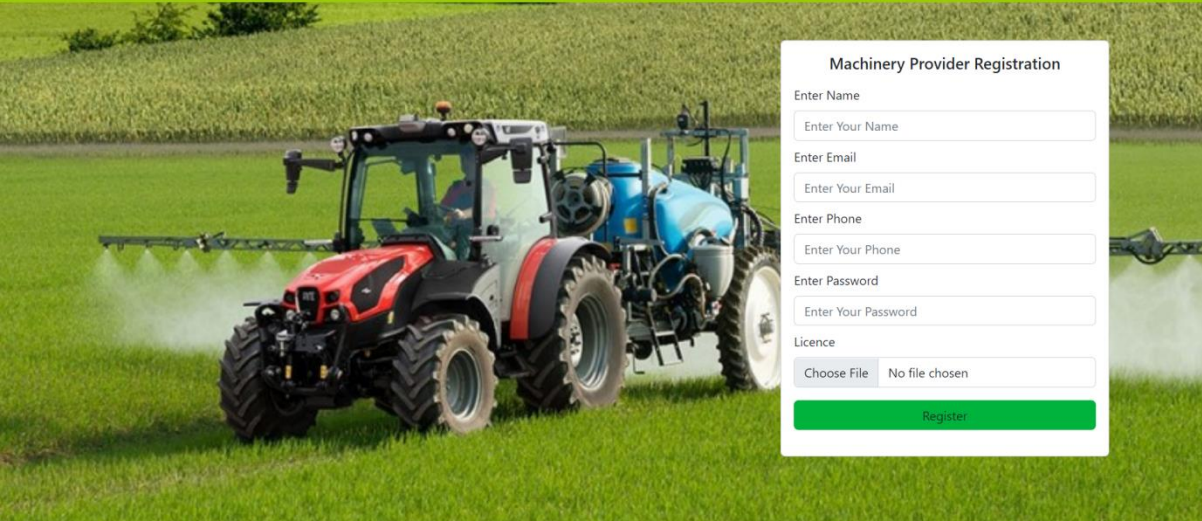


## View Labour Provider Page:

Name	Email	Phone	price	id_proof	Licence	Status
meenal	meenal@gmail.com	9876543210	10	<a href="#">View Id_Proof</a>	<a href="#">View Licence</a>	<a href="#">Activate</a>

## Machinery Provider Registration page:

[Home](#) [Administrator](#) [Machinery Provider](#) [Labour Provider](#) [Farmer](#)



### Machinery Provider Registration

Enter Name

Enter Email

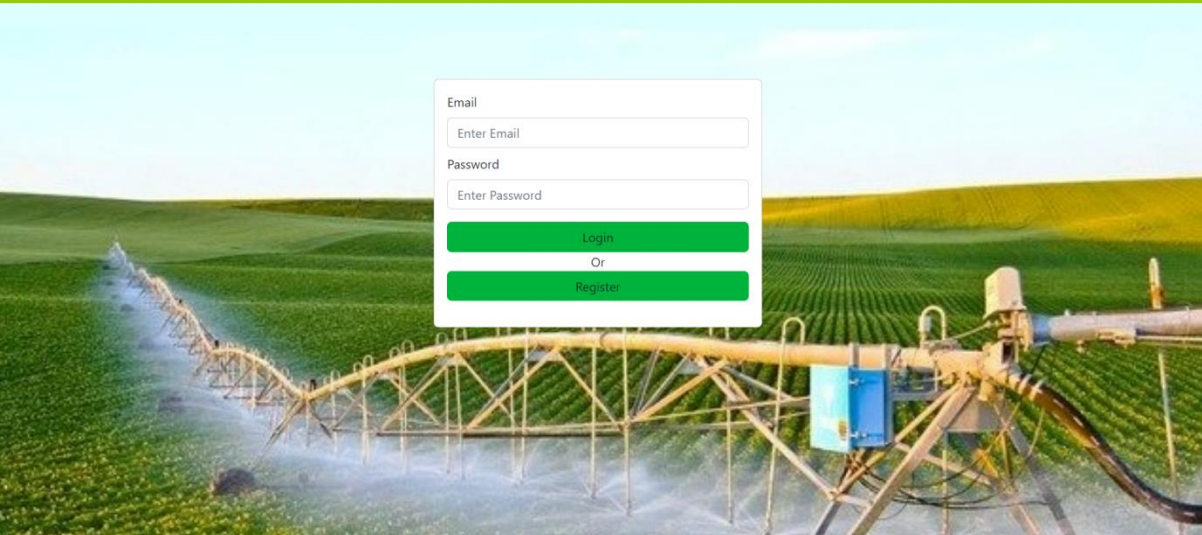
Enter Phone

Enter Password

Licence

## Machinery Provider login page:

[Home](#) [Administrator](#) [Machinery Provider](#) [Labour Provider](#) [Farmer](#)



Email

Password

Or



## Machinery Provider Home page:

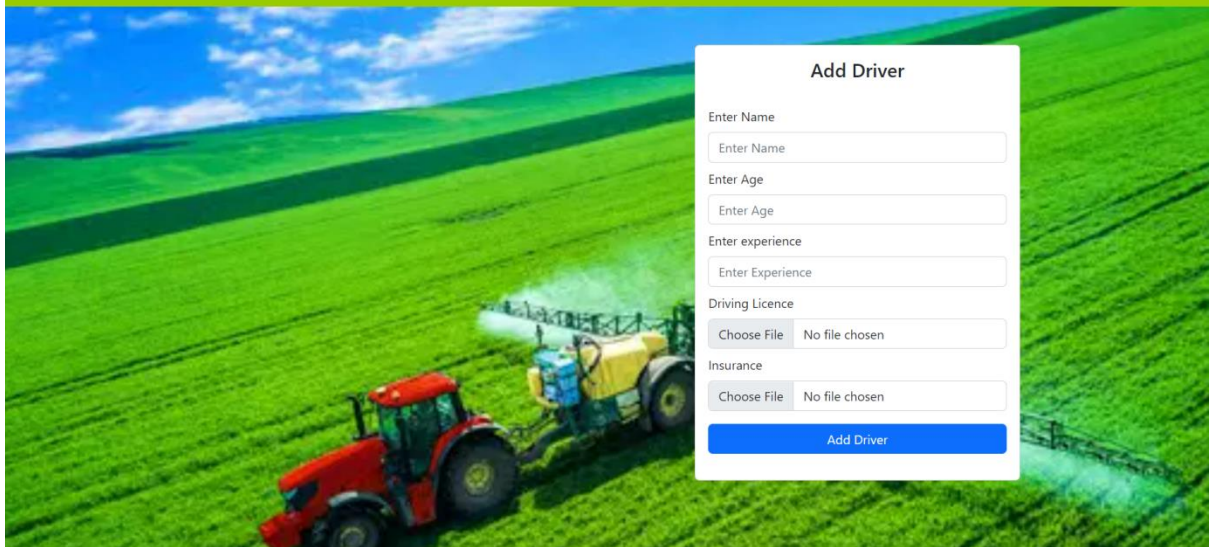
[Home](#) [Add Driver](#) [View Driver](#) [Add Machinery](#) [View Machinery](#) [View Bookings](#) [LogOut](#)

Welcome meenam



## Add Driver page:

[Home](#) [Add Driver](#) [View Driver](#) [Add Machinery](#) [View Machinery](#) [View Bookings](#) [LogOut](#)



## View Driver Page:

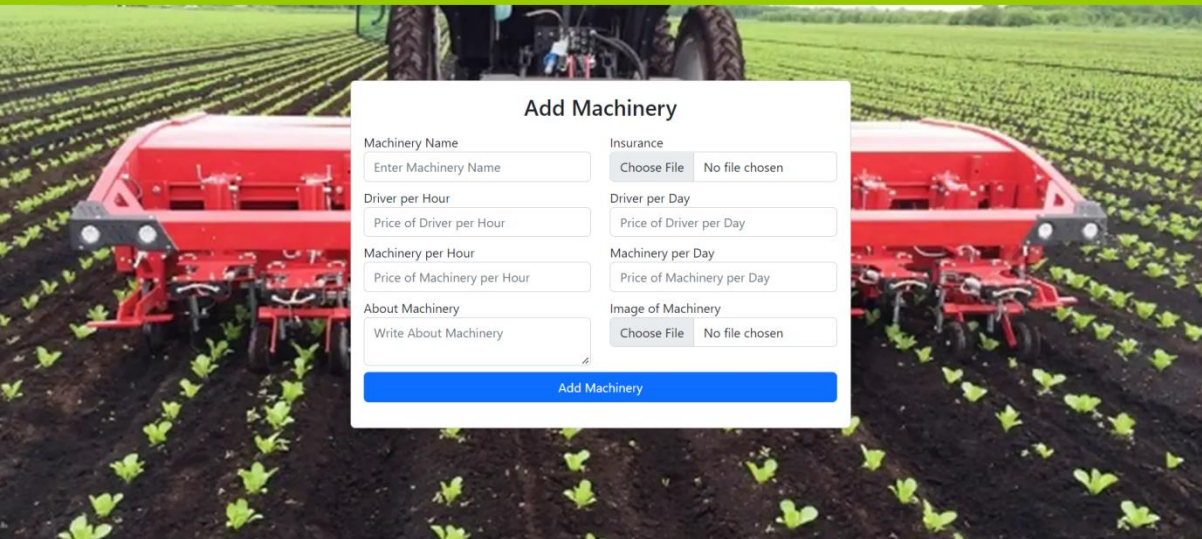
[Home](#) [Add Driver](#) [View Driver](#) [Add Machinery](#) [View Machinery](#) [View Bookings](#) [LogOut](#)





## Add Machinery Page:

Home Add Driver View Driver Add Machinery View Machinery View Bookings LogOut



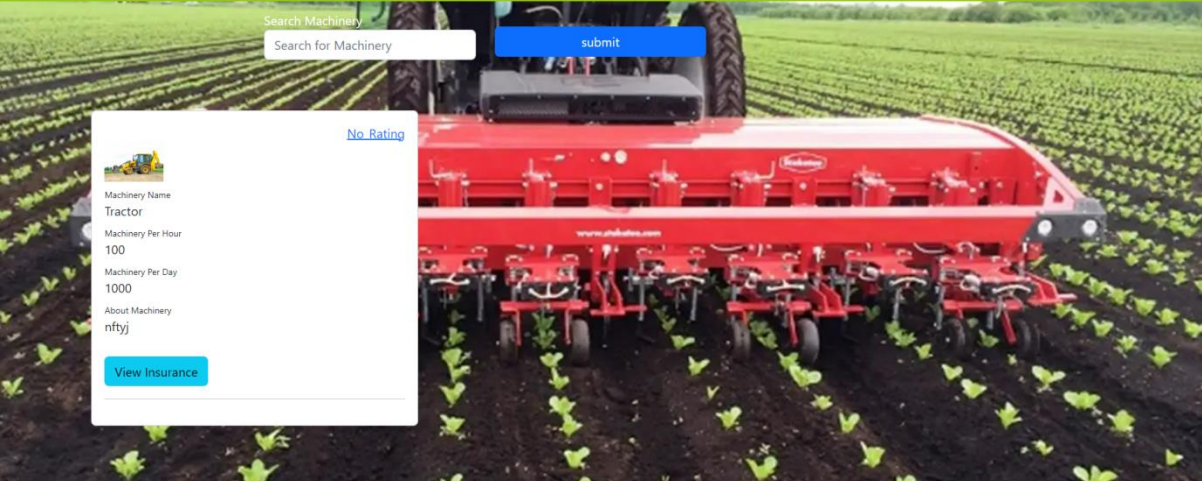
### Add Machinery

Machinery Name Enter Machinery Name	Insurance Choose File No file chosen
Driver per Hour Price of Driver per Hour	Driver per Day Price of Driver per Day
Machinery per Hour Price of Machinery per Hour	Machinery per Day Price of Machinery per Day
About Machinery Write About Machinery	Image of Machinery Choose File No file chosen


Add Machinery

## View Machinery Page:

Search Machinery  
Search for Machinery submit

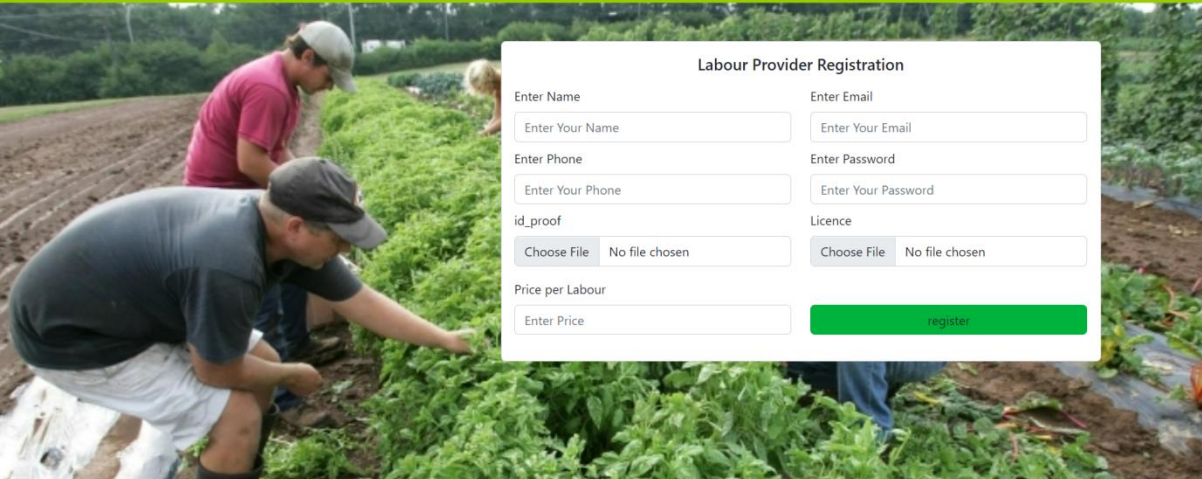


No Rating

  
Machinery Name  
Tractor  
Machinery Per Hour  
100  
Machinery Per Day  
1000  
About Machinery  
nftyj

View Insurance

## Labour Provider Registration:

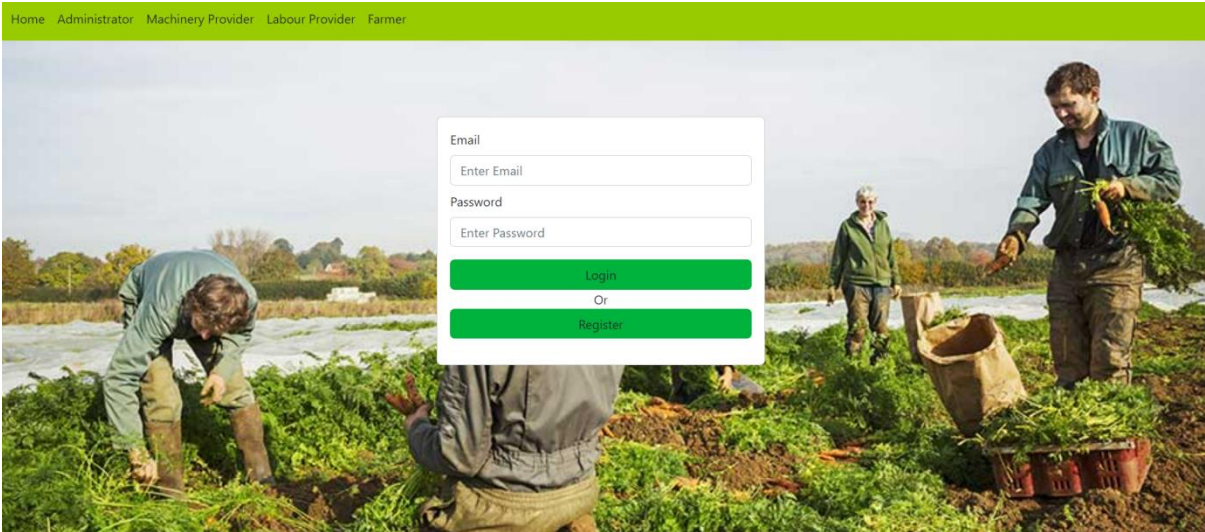


### Labour Provider Registration

Enter Name Enter Your Name	Enter Email Enter Your Email
Enter Phone Enter Your Phone	Enter Password Enter Your Password
id_proof Choose File No file chosen	Licence Choose File No file chosen
Price per Labour Enter Price	register



Labour Provider Login:



Labour Provider Home Page:



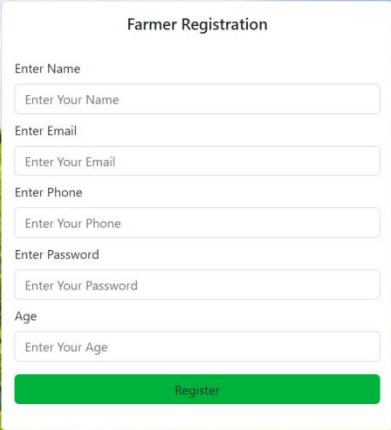
View Profile Page:





## Farmer Registration:

[Home](#) [Administrator](#) [Machinery Provider](#) [Labour Provider](#) [Farmer](#)



Farmer Registration

Enter Name

Enter Email

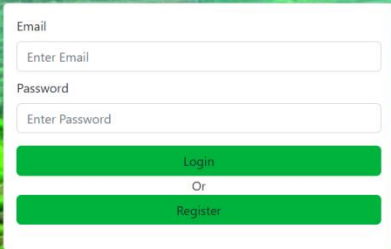
Enter Phone

Enter Password

Age

## Farmer Login:

[Home](#) [Administrator](#) [Machinery Provider](#) [Labour Provider](#) [Farmer](#)



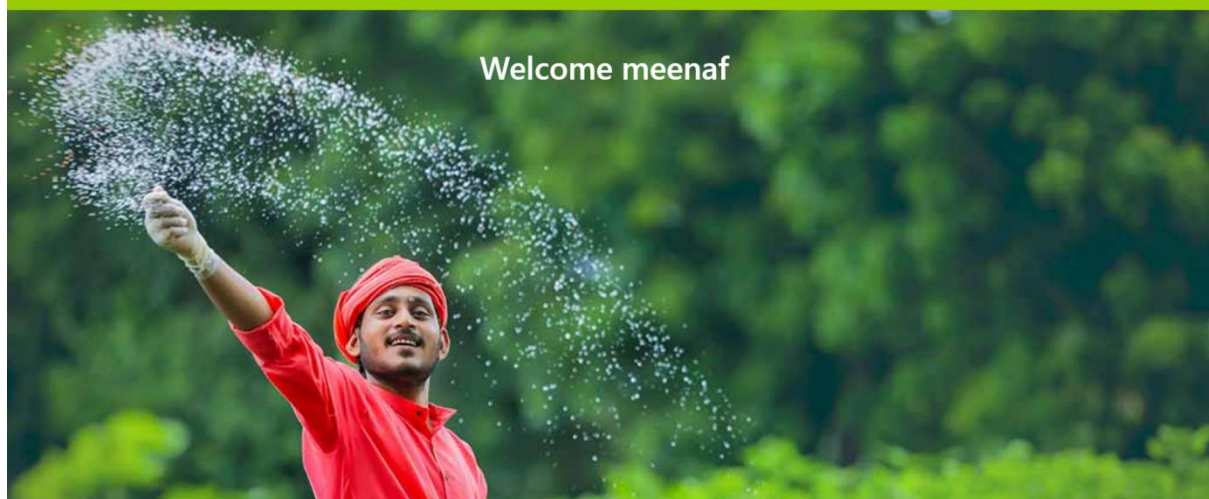
Email

Password

Or

## Farmer Home Page:

[Home](#) [View Machinery](#) [View Labour Provider](#) [View Bookings](#) [LogOut](#)



## View Machinery Page:

[Home](#) [View Machinery](#) [View Labour Provider](#) [View Bookings](#) [LogOut](#)


Choose Machinery Provider

Choose Machinery Provider

Search Machinery

Search for Machinery

submit



Machinery Name

Tractor

Machinery Per Hour

100

Machinery Per Day

1000

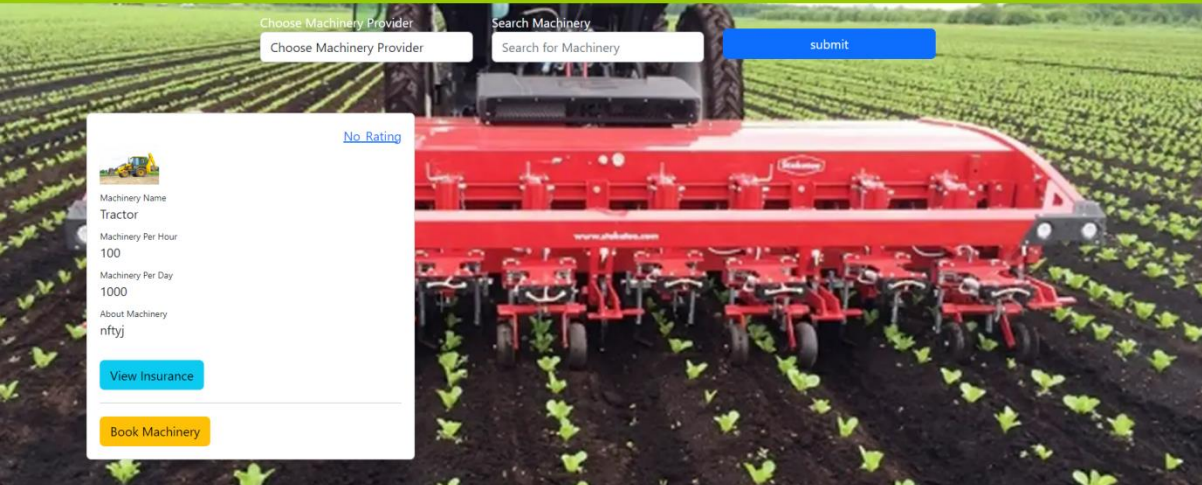
About Machinery

nftj

View Insurance

Book Machinery

No Rating



## Booking Machinery Page:

[Home](#) [View Machinery](#) [View Labour Provider](#) [View Bookings](#) [LogOut](#)

From Date

dd-mm-yyyy --:--

To Date

dd-mm-yyyy --:--

Is Required

Is Driver Required Driver

Send Request

## Booking Confirm Page:

[Home](#) [View Machinery](#) [View Labour Provider](#) [View Bookings](#) [LogOut](#)

From

Fri Dec 2 10:54:00 2022

To

Sat Dec 3 10:54:00 2022

Duration

1 Days

Driver Requirement

no

Machinery Amount

\$1000.0

Total Amount

\$1000.0

Confirm Booking



# View Labour Provider Booking Page:

[Home](#) [View Machinery](#) [View Labour Provider](#) [View Bookings](#) [LogOut](#)

Labour Provider Name  
meenal

Email  
meenal@gmail.com

Phone  
9876543210

Price Per Labour  
10

No Rating

View Id\_Proof

View Licence

Book Labour

# Booking Page:

[Home](#) [View Machinery](#) [View Labour Provider](#) [View Bookings](#) [LogOut](#)

From Date  
dd-mm-yyyy

To Date  
dd-mm-yyyy

Enter Male Count  
Enter Male Count

Enter Female Count  
Enter Female Count

Send Request

[Home](#) [View Machinery](#) [View Labour Provider](#) [View Bookings](#) [LogOut](#)

From Date  
12/02/22

To Date  
12/03/22

Number Of days  
2

Total Price for 1 males and 1 Females  
\$40

Conform Booking

## Confirm Booking:

[Home](#) [View Machinery](#) [View Labour Provider](#) [View Bookings](#) [LogOut](#)

Booking Type	Number Of Days
only machinery	1
From Date	To Date
2022-12-02 10:54:00	2022-12-03 10:54:00
Farmer Name	Farmer Phone
meenaf	9876543210
Total Amount	Driver Requirement
\$1000.0	no
Machinery Name	Machinery Provider Name
Tractor	meenam
Booking Date	Booking Date
12/02/22	Requested
<button>Cancel Booking</button>	

Booking Type	Number Of Days
Only Labour	2
From Date	To Date
2022-12-02 00:00:00	2022-12-03 00:00:00
Farmer Name	Farmer Phone
meenaf	9876543210
Male Count	Female Count
1	1
Labour Provider Name	Total Price
meenal	\$40
Booking Date	Booking Date
12/02/22	Requested
<button>Cancel Booking</button>	

## Add Review Page:

[Home](#) [View Machinery](#) [View Labour Provider](#) [View Bookings](#) [LogOut](#)

Rating

Review

Submit

## View Review Page:

[Home](#) [View Machinery](#) [View Labour Provider](#) [View Bookings](#) [LogOut](#)

Farmer Name	Review
meenaf	Good Service
Date	
12/02/22	

## 8. Conclusion:

We conclude that this application is useful for farmers who cannot afford the machinery for farming and also easy to rent labors with their specifications and also can rent the machinery with driver. Hence farming made easier using these type of applications.