BRAC UNIVERSITY

Inspiring Excellence

CSE471: System Analysis and Design
Project Report
Project Title: Farming Management Software

Group No : 04 , CSE471 Lab Section : 02, Summer 2023	
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Table of Contents

Introduction

Project Summary

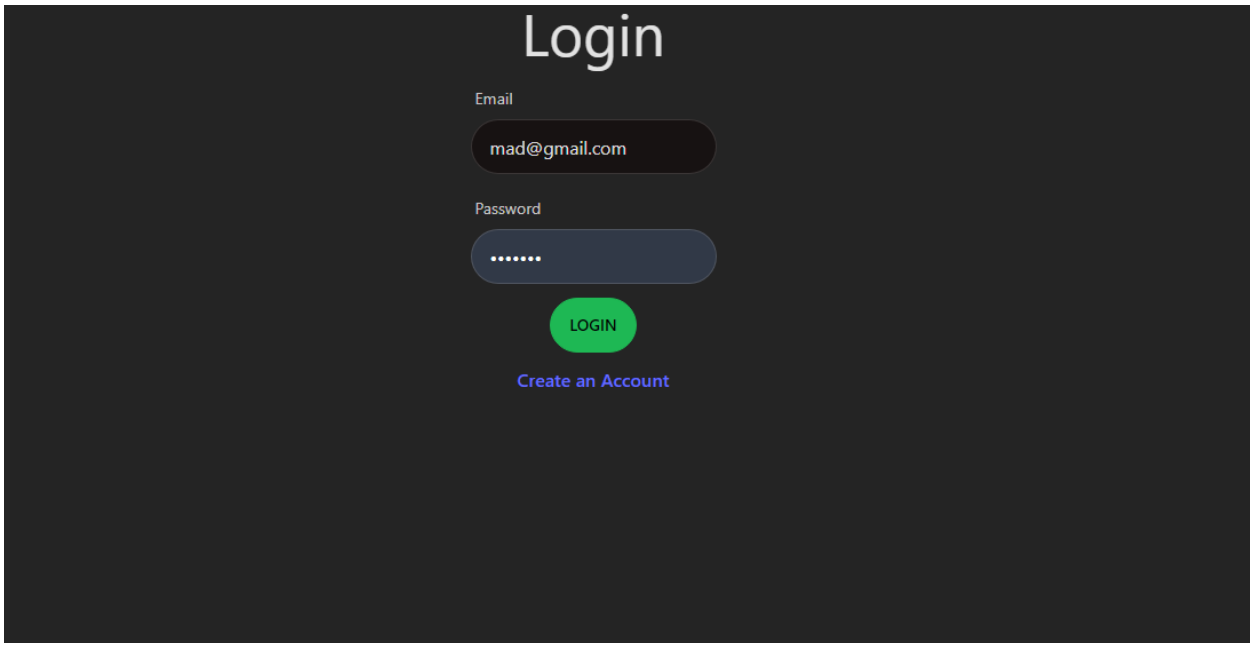
The Farming Management Software, built on the MERN (MongoDB, Express, React, Node.js) stack, is a comprehensive solution tailored for farm managers and owners. This software streamlines agricultural management by providing modules for crop cultivation, livestock maintenance, inventory control, and workforce management. Its intuitive dashboard enables users to monitor crop lifecycles, input planting and harvesting dates, and predict yields. The Livestock Management module empowers users to track species, quantities, and health status, facilitating informed breeding decisions. Inventory Management ensures efficient oversight of resources, and Workforce Management offers insights into labor expenses. With security measures and a user-friendly interface, this software modernizes agricultural practices, empowering stakeholders to optimize productivity, decision-making, and sustainability.

Functional Requirements

1. **Crop Lifecycle Tracking**
2. **Livestock Health Monitoring**
3. **Inventory Management and Maintenance**
4. **Workforce and Labor Management**

Frontend Development

The front end of our web application is a seamless dashboard where users can navigate visually separate the different processes that are being tracked in the farm using cards. The user can add any tracking parameters from the card or view all the parameters being tracked for a specific field or livestock or a worker. The tracked parameters are also kept using cards for visual simplicity. The cards can further be used to Edit and Delete the data.

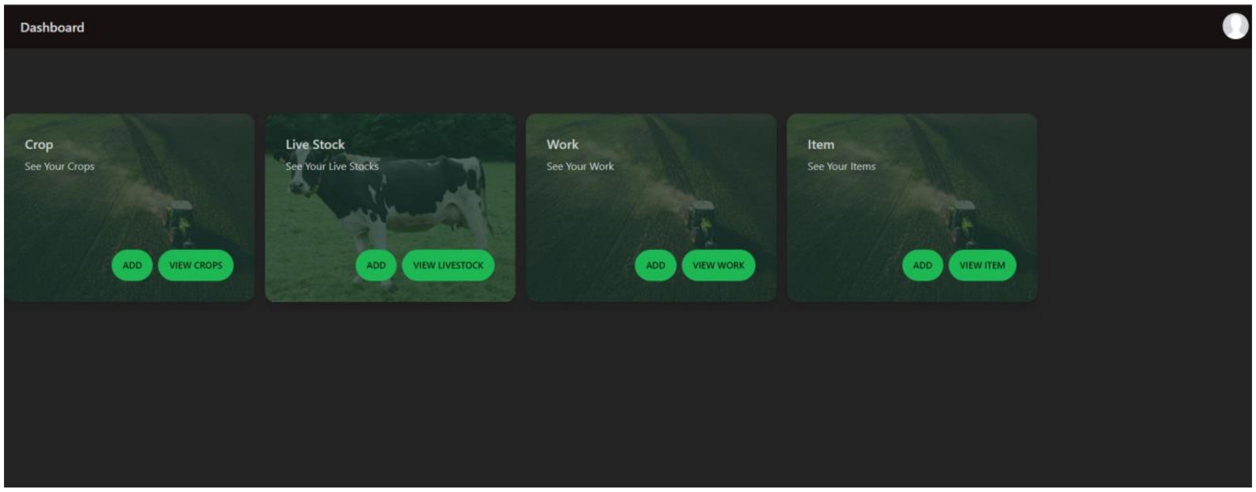


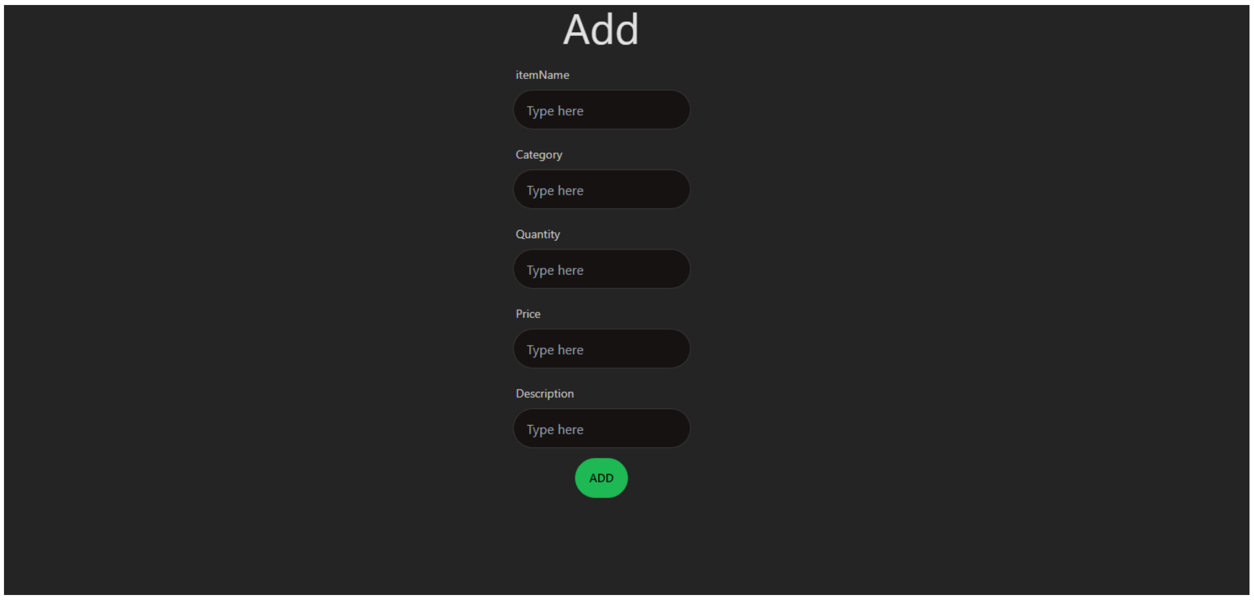
Email

mad@gmail.com

Password

•••••••




Add

itemName

Type here

Category

Type here

Quantity

Type here

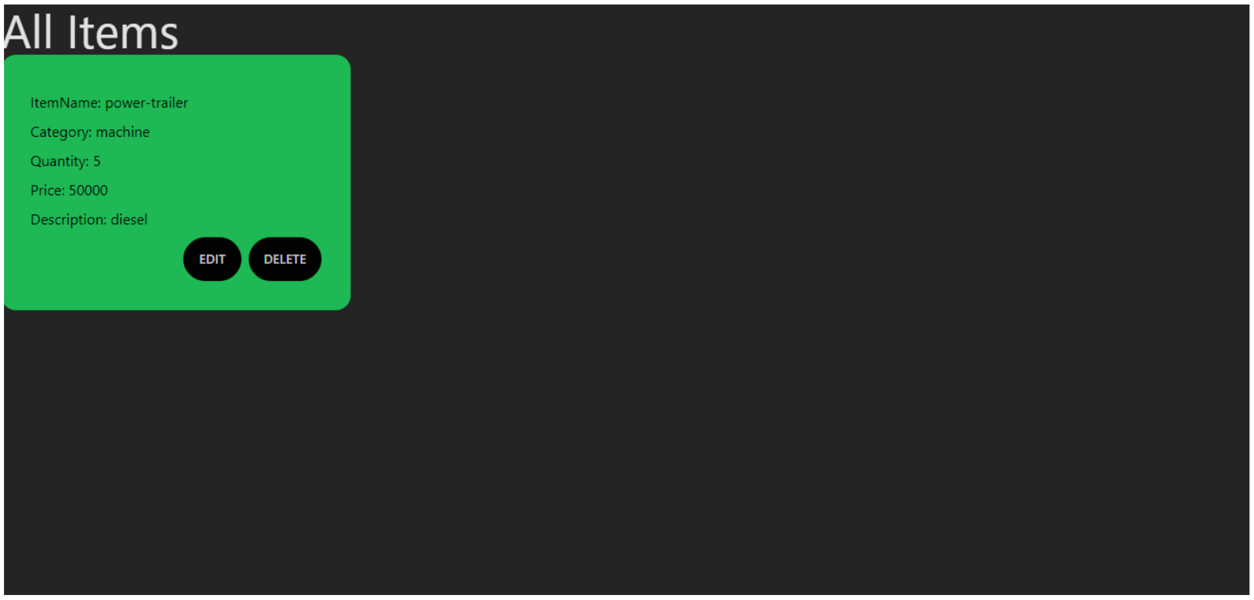
Price

Type here

Description

Type here

ADD


All Items

ItemName: power-trailer

Category: machine

Quantity: 5

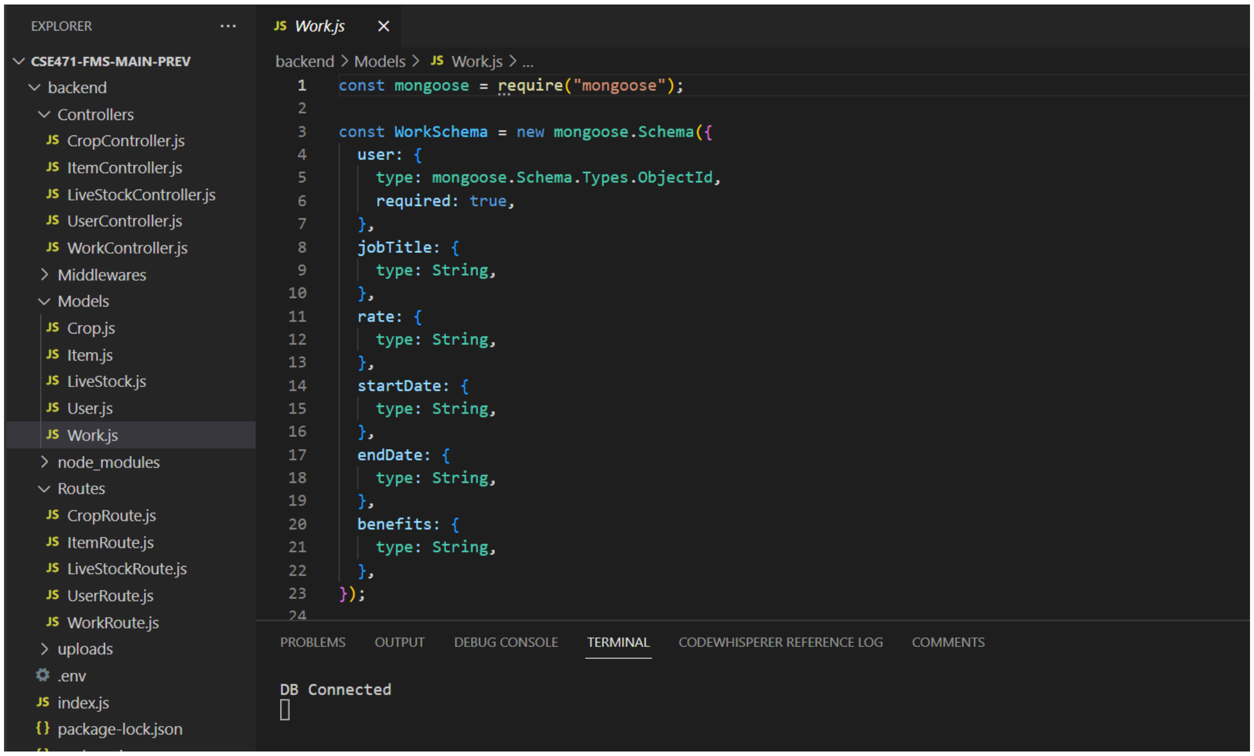
Price: 50000

Description: diesel

EDIT DELETE

Backend Development

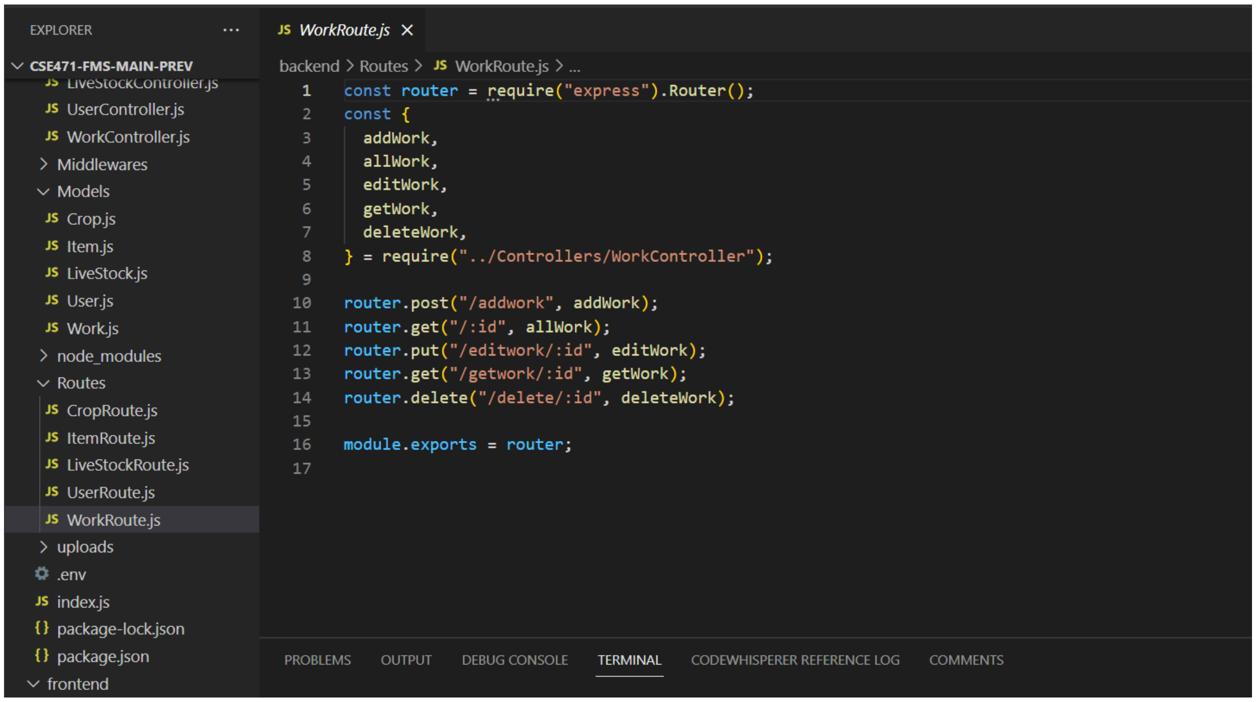
The backend of the Farming Management Software, developed using Node.js and Express, serves as the backbone that facilitates data processing, storage, and communication. Leveraging the power of the MERN stack, the backend seamlessly integrates with the frontend to enable smooth user interactions. It manages user authentication, ensuring secure access to the system's functionalities. The backend handles data storage and retrieval through MongoDB, offering a flexible and scalable database solution. It also implements the logic behind various features, such as crop and livestock management, inventory control, and workforce optimization. By employing RESTful API endpoints, the backend enables the frontend to request and receive data efficiently, fostering a cohesive and dynamic user experience.



```javascript
const mongoose = require("mongoose");

const WorkSchema = new mongoose.Schema({
  user: {
    type: mongoose.Schema.Types.ObjectId,
    required: true,
  },
  jobTitle: {
    type: String,
  },
  rate: {
    type: String,
  },
  startDate: {
    type: String,
  },
  endDate: {
    type: String,
  },
  benefits: {
    type: String,
  },
});
```

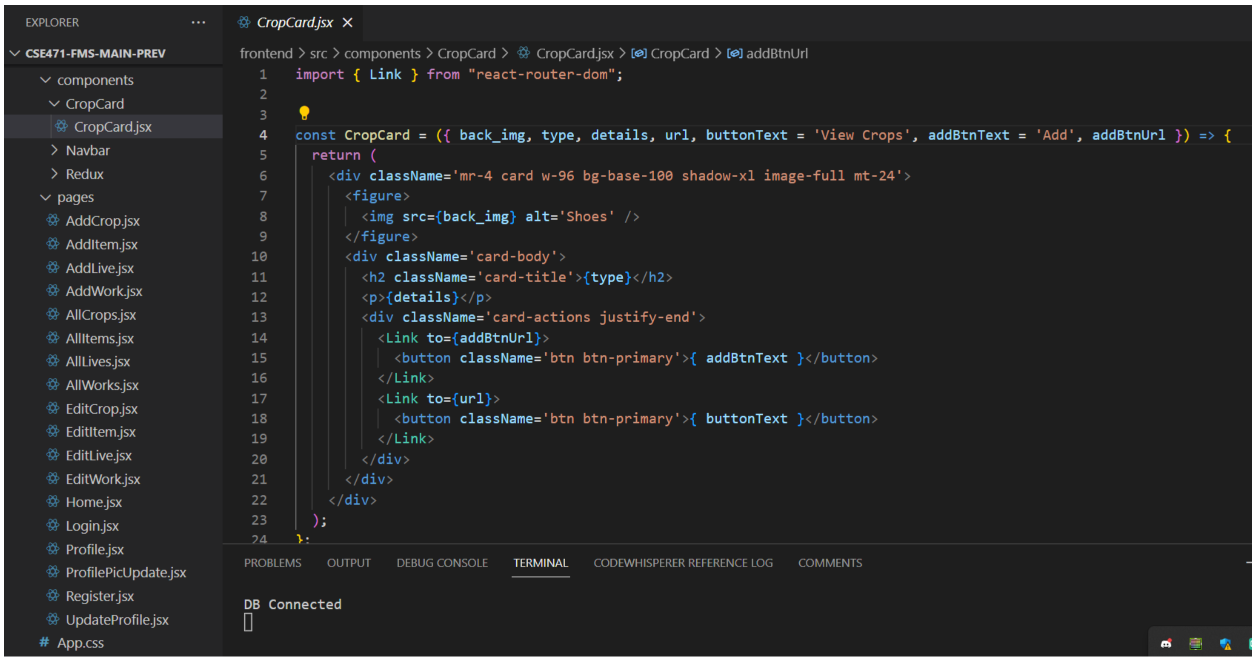
```
DB Connected
```



```javascript
const router = require("express").Router();
const {
  addWork,
  allWork,
  editWork,
  getWork,
  deleteWork,
} = require("../Controllers/WorkController");

router.post("/addwork", addWork);
router.get("/:id", allWork);
router.put("/editwork/:id", editWork);
router.get("/getwork/:id", getWork);
router.delete("/delete/:id", deleteWork);

module.exports = router;
```



```jsx
import { Link } from "react-router-dom";


const CropCard = ({ back_img, type, details, url, buttonText = 'View Crops', addBtnText = 'Add', addBtnUrl }) => {
  return (
    <div className='mr-4 card w-96 bg-base-100 shadow-xl image-full mt-24'>
      <figure>
        <img src={back_img} alt='Shoes' />
      </figure>
      <div className='card-body'>
        <h2 className='card-title'>{type}</h2>
        <p>{details}</p>
        <div className='card-actions justify-end'>
          <Link to={addBtnUrl}>
            <button className='btn btn-primary'>{ addBtnText }</button>
          </Link>
          <Link to={url}>
            <button className='btn btn-primary'>{ buttonText }</button>
          </Link>
        </div>
      </div>
    </div>
  );
};
```

```
DB Connected
```

Technology (Framework, Languages)

Framework: MERN (MongoDB, Express, React, Node.js)

Github Repository

Link: https://github.com/MadTMan/Farm-Management.git

Individual Contribution

ID	Name	Contribution
23341075	**MD.FAHIM SHAHRIAR**	Backend Development
19201141	**S.M Toufique**	Frontend Development