SCTR's Pune Institute of Computer Technology Dhankawadi, Pune

A.Y. 2023-24

WADL MINI PROJECT REPORT ON

E-commerce Website for Plants: ML-driven Selection

Submitted By

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ABSTRACT

PLANTX is an innovative e-commerce platform designed to revolutionize the way consumers interact with and purchase plants online. In response to the growing demand for greenery and the increasing popularity of online shopping, PLANTX offers a convenient and efficient solution for plant enthusiasts to discover, select, and purchase a wide variety of plants from the comfort of their homes.

One of the key features that set PLANTX apart is its integration of machine learning technology for plant selection. Leveraging advanced algorithms, PLANTX provides personalized recommendations to users based on their preferences, location, and environmental factors. This machine learning-based system ensures that customers are presented with plants that are well-suited to their unique needs and growing conditions, enhancing their overall shopping experience and increasing the likelihood of plant success post-purchase.

In conclusion, PLANTX represents a cutting-edge approach to e-commerce in the realm of plant retailing, combining the convenience of online shopping with the sophistication of machine learning technology to deliver a seamless and personalized experience for customers.

INTRODUCTION

The rise of e-commerce has transformed the way we shop for a multitude of products, and plants are no exception. With an increasing number of individuals seeking to bring greenery into their homes and lives, the demand for online platforms offering a wide selection of plants has surged. Recognizing this growing trend and the need for personalized recommendations in the realm of plant selection, we introduce PLANTX – an innovative e-commerce website tailored specifically for plant enthusiasts.

PLANTX is not just another online plant store; it represents a fusion of technology and nature, where machine learning algorithms are employed to enhance the shopping experience. The platform aims to address the challenges faced by consumers when selecting plants online, such as uncertainty about suitability for their environment and lack of personalized guidance.

In its conception, PLANTX is propelled by a mission to seamlessly merge cutting-edge technology with the timeless allure of nature. Through the integration of advanced algorithms and a meticulously curated collection of plants, PLANTX aims to redefine the online plant retailing experience. By providing users with personalized recommendations and empowering them to make informed choices, PLANTX endeavours to cultivate a deeper appreciation for plants while simplifying the process of bringing greenery into homes and lives across the globe.

LITERATURE SURVEY

E-commerce Trends in Plant and Gardening Industry
This section delves into recent trends in e-commerce specifically within the plant and gardening industry. Explore statistics, consumer behavior, and market analysis reports to understand the growth and potential of this niche market.

MERN Stack Development in E-commerce
Investigate existing literature on the MERN (MongoDB, Express.js, React.js, Node.js) stack and its application in e-commerce platforms. Analyze case studies and best practices for building robust, scalable, and user-friendly web applications using this technology stack.

User Experience Design in E-commerce
Explore principles of user experience (UX) design and its significance in e-commerce platforms. Review studies on optimizing user interfaces (UI), navigation, search functionalities, and checkout processes to enhance user satisfaction and increase conversion rates.

Database Management with MongoDB
Discuss the advantages of using MongoDB as the database management system for an e-commerce platform. Examine literature on schema design, data modeling, indexing strategies, and scalability considerations in MongoDB for handling product catalogs, user profiles, and transactional data.

Express.js for Backend Development
Review literature on Express.js and its role in building RESTful APIs for server-side logic and data manipulation. Explore topics such as authentication, authorization, session management, and middleware integration to ensure secure and efficient backend development.

Frontend Development with React.js
Investigate the benefits of using React.js for building dynamic and interactive user interfaces in e-commerce applications. Explore literature on component-based architecture, state management, client-side routing, and performance optimization techniques for React.js applications.

Node.js for Server-side Operations
Examine literature on Node.js and its event-driven architecture for handling concurrent requests and asynchronous I/O operations in e-commerce platforms. Discuss topics such as server-side rendering, caching mechanisms, error handling, and performance tuning strategies using Node.js.

Security and Compliance
Discuss literature on security best practices and compliance requirements for e-commerce platforms, including data encryption, secure authentication, GDPR, PCI DSS, and other regulatory standards. Explore case studies and frameworks for mitigating risks and ensuring compliance with industry standard.

IMPLEMENTATION DETAILS

Web technologies used: MERN stack.

Frontend development:

3) React: The core library for building the user interface of Elegance Edge. It will be responsible for:
   a) Displaying product listings and details.
   b) Creating user interfaces for price tracking features like watchlists and price charts.
   c) Handling user interactions with notifications, search bars, and product filtering.
4) React Router: For managing navigation between different views within the application (e.g., product listings, shopping cart, account settings).

Backend development:

5) Node.js: The runtime environment for the server-side code.
6) Express.js: A web framework built on Node.js that simplifies building APIs and handling server-side logic. Key functionalities include:
   i) Processing user requests for product data and price tracking information.
   ii) Interacting with the database to store and retrieve product information and user preferences.
   iii) Managing user authentication and authorization.
   iv) Potentially implementing a background process for scraping price data from external websites (requires responsible web scraping practices and adherence to terms of service).

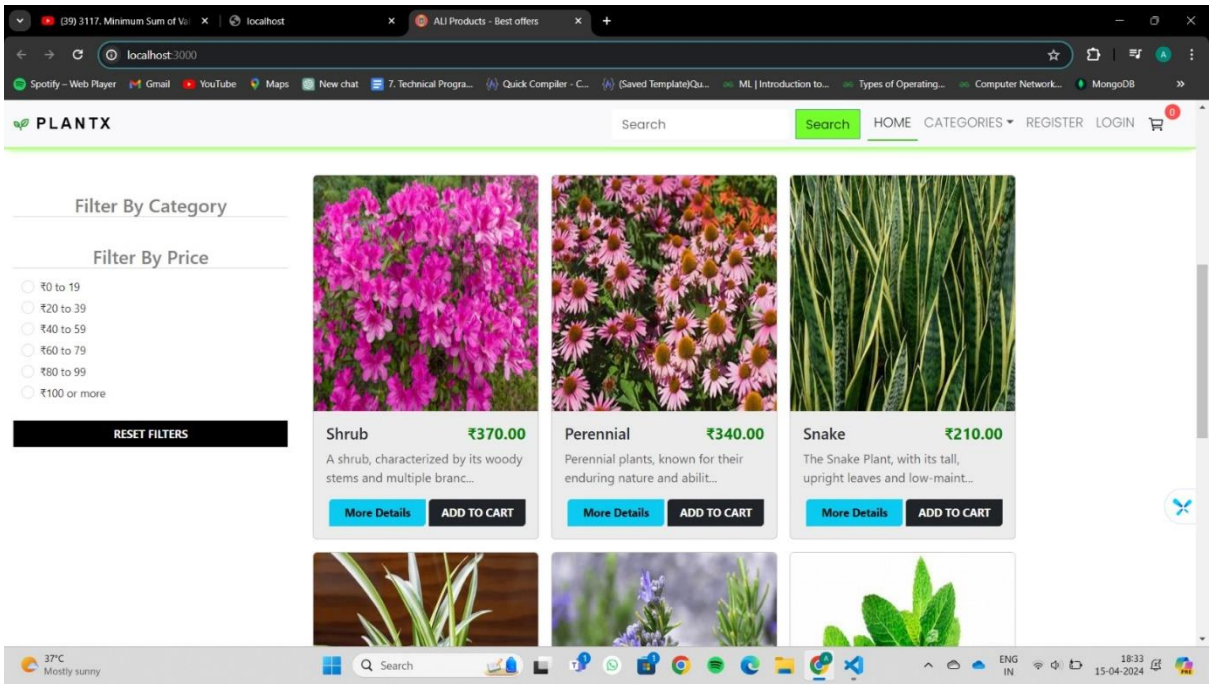
7) MongoDB: A NoSQL document database that offers flexibility and scalability for storing product information, user data, and price tracking history. It will be used to store product details like name, description, image, and price history.
8) FLASK : A flask Application to predict the crop using python using parameters of soil. This helps the customer to choose the best crop using our service and add to their benefit.

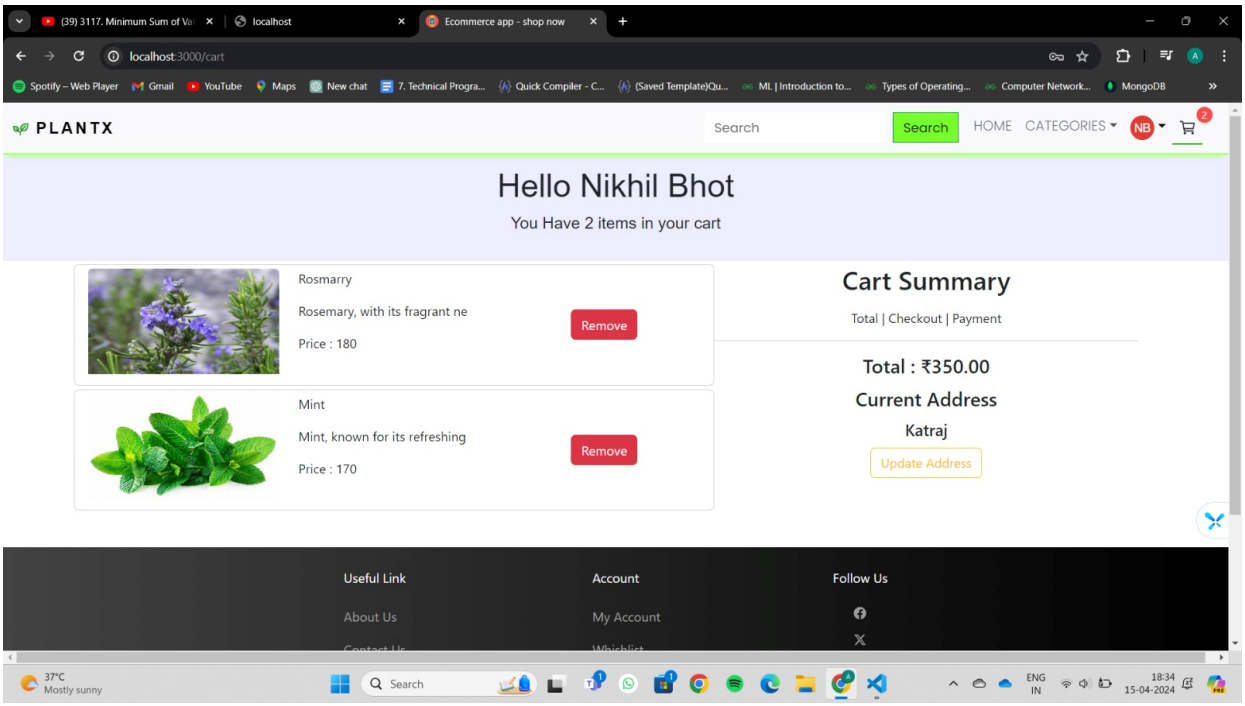
Integration:

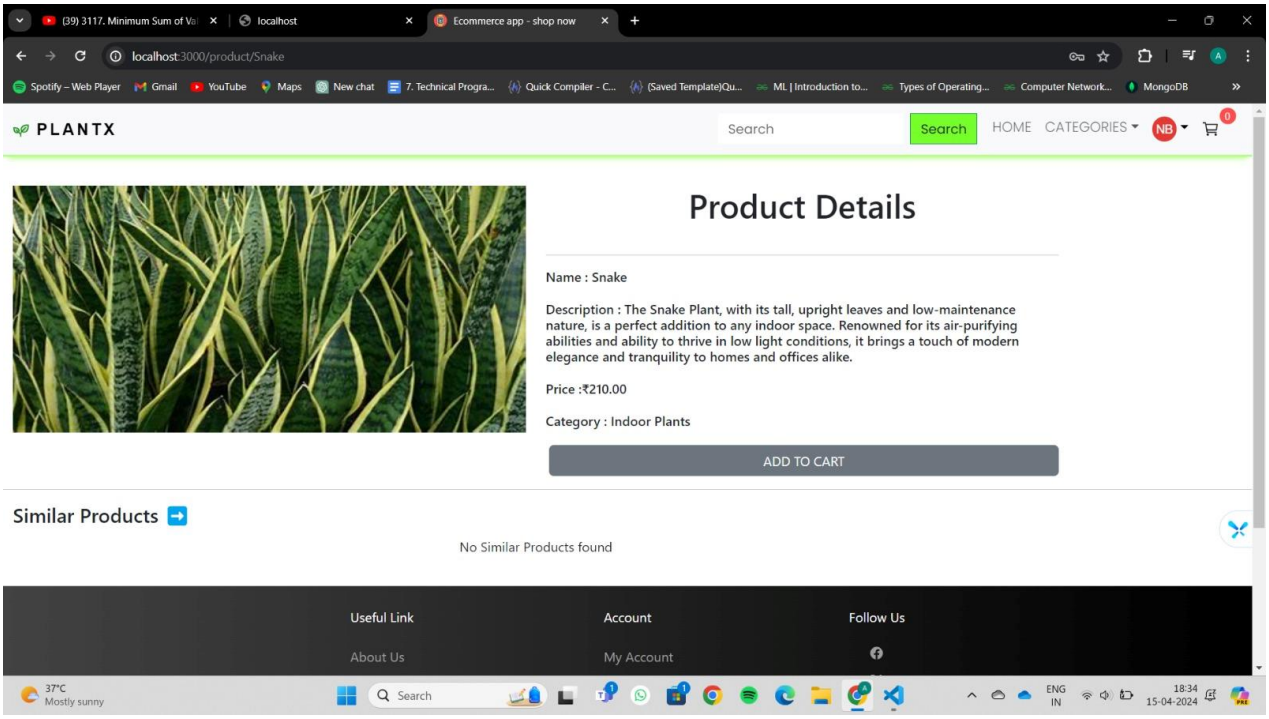
Email API Integration: An email API service will be required to send price drop notifications to users.

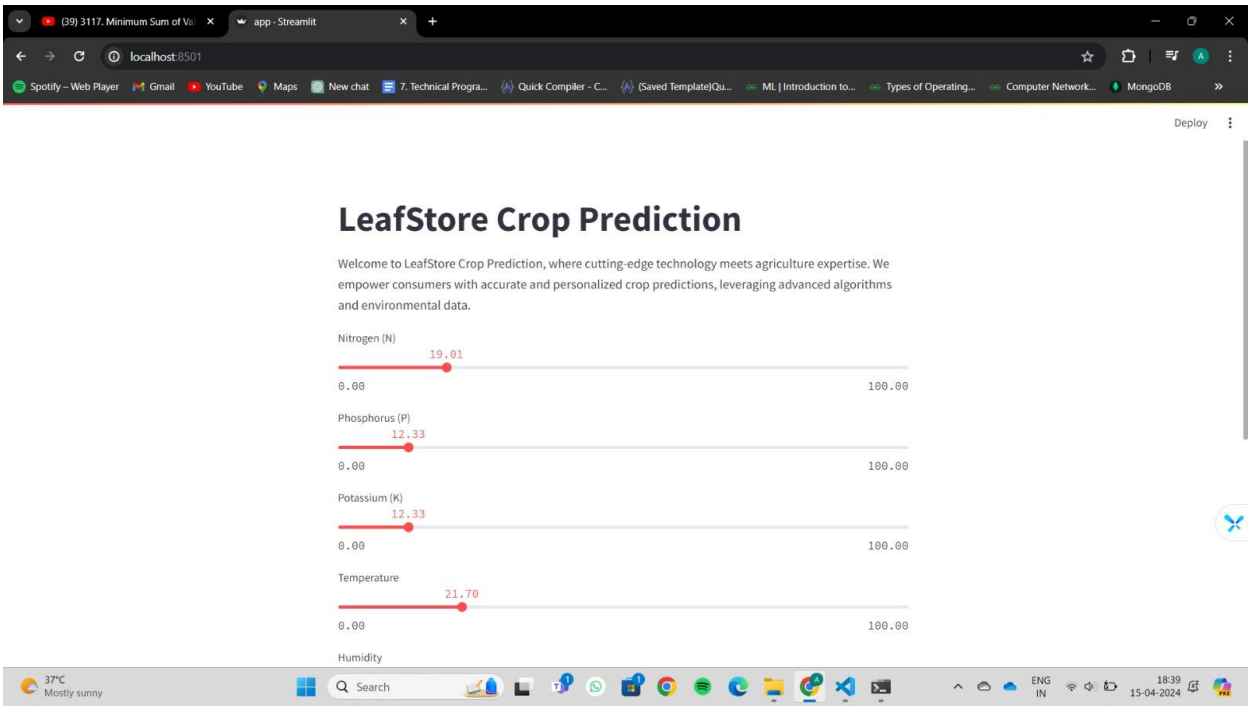
OUTPUT

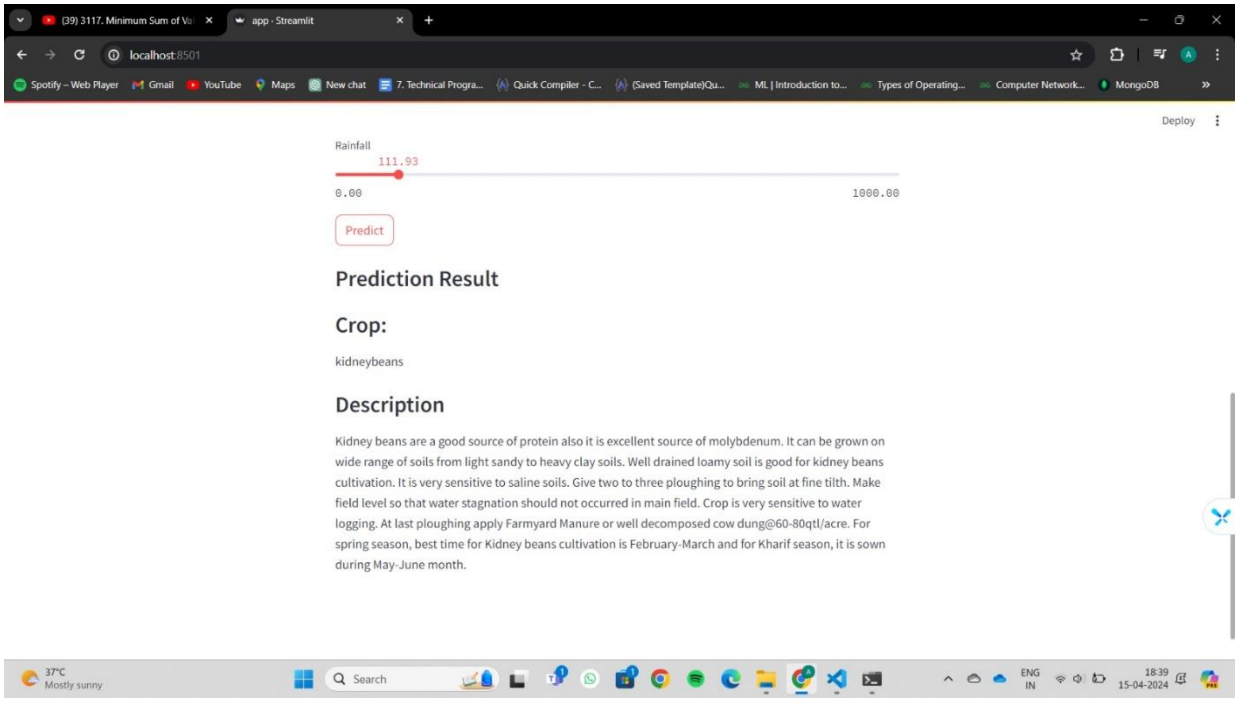

PLANTX
Search
Search
HOME
CATEGORIES
REGISTER
LOGIN
Spring Fling with
Planters!
Explore our new range
of premium planters!
All Products


localhost:3000
PLANTX
Search
Search
HOME
CATEGORIES
REGISTER
LOGIN
Filter By Category
Filter By Price
₹0 to 19
₹20 to 39
₹40 to 59
₹60 to 79
₹80 to 99
₹100 or more
RESET FILTERS
Shrub
₹370.00
A shrub, characterized by its woody stems and multiple branc...
More Details
ADD TO CART
Perennial
₹340.00
Perennial plants, known for their enduring nature and abilit...
More Details
ADD TO CART
Snake
₹210.00
The Snake Plant, with its tall, upright leaves and low-maint...
More Details
ADD TO CART


PLANTX
Search
Search
HOME
CATEGORIES
Hello Nikhil Bhot
You Have 2 items in your cart
Rosmarry
Rosemary, with its fragrant ne
Price : 180
Remove
Mint
Mint, known for its refreshing
Price : 170
Remove
Cart Summary
Total | Checkout | Payment
Total : ₹350.00
Current Address
Katraj
Update Address
Useful Link
About Us
Account
My Account
Follow Us


PLANTX
Search
Search
HOME
CATEGORIES
Product Details
Name : Snake
Description : The Snake Plant, with its tall, upright leaves and low-maintenance nature, is a perfect addition to any indoor space. Renowned for its air-purifying abilities and ability to thrive in low light conditions, it brings a touch of modern elegance and tranquility to homes and offices alike.
Price :₹210.00
Category : Indoor Plants
ADD TO CART
Similar Products
No Similar Products found
Useful Link
About Us
Account
My Account
Follow Us


(39) 3117. Minimum Sum of Va
app - Streamlit
localhost:8501
Spotify – Web Player
Gmail
YouTube
Maps
New chat
7. Technical Progra...
Quick Compiler - C...
(Saved Template)Qu...
ML | Introduction to...
Types of Operating...
Computer Network...
MongoDB
Deploy
LeafStore Crop Prediction
Welcome to LeafStore Crop Prediction, where cutting-edge technology meets agriculture expertise. We empower consumers with accurate and personalized crop predictions, leveraging advanced algorithms and environmental data.
Nitrogen (N)
19.01
0.00
100.00
Phosphorus (P)
12.33
0.00
100.00
Potassium (K)
12.33
0.00
100.00
Temperature
21.70
0.00
100.00
Humidity
37°C
Mostly sunny
Search
ENG
IN
18:39
15-04-2024


(39) 3117. Minimum Sum of Va
app - Streamlit
localhost:8501
Spotify – Web Player
Gmail
YouTube
Maps
New chat
7. Technical Progra...
Quick Compiler - C...
(Saved Template)Qu...
ML | Introduction to...
Types of Operating...
Computer Network...
MongoDB
Deploy
Rainfall
111.93
0.00
1000.00
Predict
Prediction Result
Crop:
kidneybeans
Description
Kidney beans are a good source of protein also it is excellent source of molybdenum. It can be grown on wide range of soils from light sandy to heavy clay soils. Well drained loamy soil is good for kidney beans cultivation. It is very sensitive to saline soils. Give two to three ploughing to bring soil at fine tilth. Make field level so that water stagnation should not occurred in main field. Crop is very sensitive to water logging. At last ploughing apply Farmyard Manure or well decomposed cow dung@60-80qtl/acre. For spring season, best time for Kidney beans cultivation is February-March and for Kharif season, it is sown during May-June month.
37°C
Mostly sunny
Search
ENG
IN
18:39
15-04-2024

Conclusion

In conclusion, our ecommerce platform stands at the forefront of technological innovation, transforming the retail landscape by offering a comprehensive selection of plants. Through intuitive navigation, vibrant imagery, and robust search functionalities, we provide a seamless shopping experience tailored to plant enthusiasts.

Our dedication to continuous enhancement ensures that our platform evolves alongside consumer preferences. By harnessing data analytics and customer insights, we refine our offerings and optimize user interactions, elevating satisfaction and loyalty.

More than a mere digital marketplace, our website cultivates a virtual oasis where customers can immerse themselves in the beauty of nature. With a commitment to excellence and customer-centricity, we are poised to shape the future of online plant retailing, inviting customers and partners to join us on this green journey.

References

1) https://nodejs.org/en
2) https://flask.palletsprojects.com/en/3.0.x/
3) https://react.dev/
4) https://www.mongodb.com/
5) https://www.geeksforgeeks.org/learn-data-structures-and-algorithms-dsa-tutorial/