EEC 626 Software Engineering Project

Washkewicz College of Engineering

Cleveland State University

Unishopper Report

Team Members

Sujit Reddy Mudhunoor (CSU ID- 2845634)

Akhila Chanam (CSU ID- 2830308)

1. Introduction

1.1. Purpose and Scope

The UniShopper is an innovative software solution specifically designed to cater to the unique needs of organic food-related eCommerce businesses. At its core, the project's scope encompasses creating a responsive web template that seamlessly adapts to various devices, including desktop computers, tablets, and mobile phones. The primary objective is to provide a platform where organic food businesses can effectively showcase their products and information to customers.

This scope is deliberately high-level, focusing on the overarching goals without delving into the nitty-gritty of implementation. By keeping the scope at this level, we ensure that the plan leftovers are flexible and adaptable to the dynamic demands of the organic food e-commerce landscape. Whether a business needs to emphasize branding, content presentation, or performance optimization, the UniShopper aims to offer a versatile framework that can be tailored to specific requirements.

The purpose of the Green Template project is to provide a responsive and customizable web template specifically tailored for organic food-related eCommerce businesses. The scope encompasses developing a user-centric design that adapts seamlessly to various devices, offering businesses the flexibility to showcase their products effectively. The goal is to create an innovative solution that enhances the online presence of organic food businesses.

1.2. Project Overview

The Green Template offers the following capabilities:

- Responsive Design: Ensuring a seamless experience across devices.
- Customization Options: Allowing businesses to personalize their websites.
- Compatibility: Supporting modern and legacy browsers, tablets, and mobile devices.
- User-centric design: Focusing on intuitive navigation and performance optimization.
- SEO-Friendly Structure: Implementing clean code and SEO best practices.

Scenarios for using the product include businesses looking to establish an online presence, showcase their organic products, and engage with customers in an aesthetically pleasing and user-friendly environment.

2. Project Management Plan

2.1. Project Organization

The project will be organized into cross-functional teams including:

- Development Team: Responsible for coding, customization, and integration.
- Design Team: Focused on creating a user-centric and visually appealing interface.
- Testing Team: Conducting thorough testing and quality assurance.
- Customer Support Team: Handling inquiries and providing ongoing support.

A project manager will oversee the coordination of these teams, ensuring efficient communication and collaboration.

2.2 Risk Analysis

A comprehensive risk analysis identified potential challenges, including technical customization issues, updates to the Bootstrap framework, and changes in browser standards. Mitigation strategies, monitoring processes, and management protocols are in place to address these risks effectively.

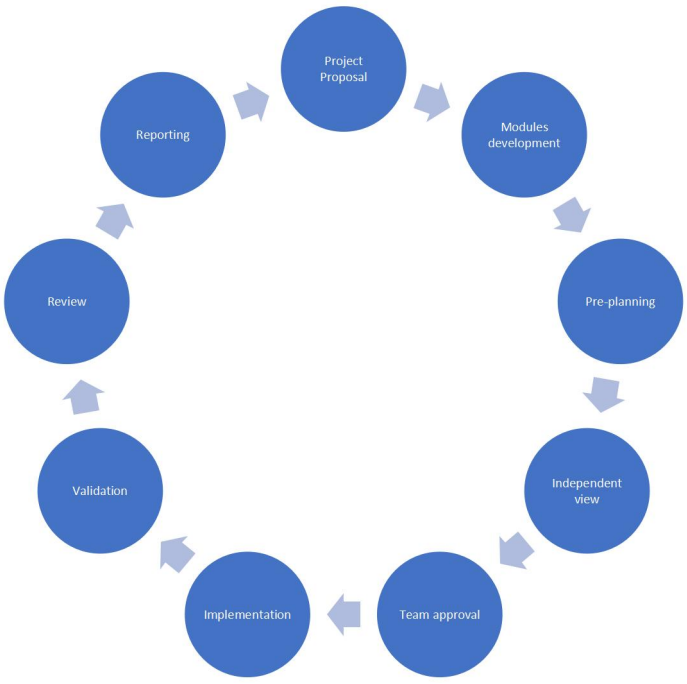
2.3 Hardware and Software Resource Requirements

The project will require standard development hardware (computers, servers) and software tools such as code editors, design software, and collaboration platforms. Specific requirements will be detailed in the resource plan.

2.4 Deliverables and Schedule

Deliverables include the fully developed Green Template, documentation, and ongoing support protocols. The project will be executed in sprints, starting from September 22, 2023, and concluding in Dec 2023, with detailed task breakdowns and timelines.

1.1. Lifecycle Model Used



1.2. Hardware and Software Resource Requirements

Operating System	Windows/Mac or Linux
Processor	x86 or x64
RAM (recommended)	512 MB (minimum), 1 GB
Hard Disk	up to 200 MB
PHP	5.3.3

Server	Apache Tomcat
Database	MySQL

3. Requirement Specification

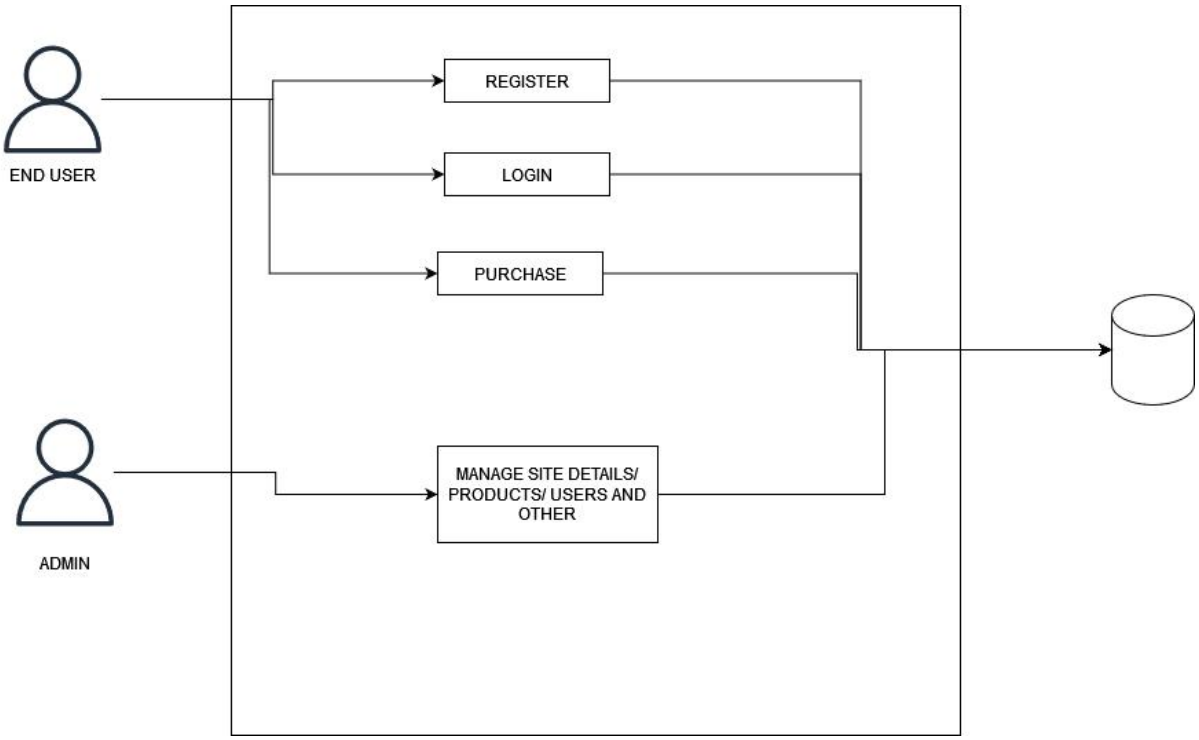
3.1. Stakeholder for the system

The application would be used by the following people.

- End Users
  - Customer
- Administrators

3.2. Use Cases

3.2.1. Graphic Use Case Model



3.2.2. Textual Description for each use case

Use Case UC-1: Register: - End User creates a new account on the website. As soon as user register, he or she will get one-time password via email

Use Case UC-1: Register
Initiation Actor: End User Actor's Goal: - To register a user account to make purchase. Participating Actors: Database Preconditions: - The user is not yet registered and has a valid email address. Postconditions: - The user has an account Flow of Events for Main Success Scenario for User: - ->1. End User: - inputs the required details. <-2. System: - verifies the information and sends confirmation mail with OTP to the

user. ->3. End User: - verifies the OTP. <-4. System: - activates the user account for login

Use Case UC-2: Login: - End User Logs into the website. This will allow them to access the full features of the site, such as purchase, checkout, and other functions.

Use Case UC-2: Login
Initiating Actor: - End User/Admin Actor's Goal: - To login into the system. Participating Actors: Database Preconditions: - The user has already created an account. Postconditions: - The user will be logged into the site to use its functionalities Flow of Events for Main Success Scenario: - ->1. End User/Admin: - enters the user login and password <-2. System: - does a basic validation to make sure that the password and username are not empty string <-2. System: - verifies the entered data by checking the Database. It then logs the user in and displays the End User/Admin dashboard Flow of Events for Alternative Scenario: - ->1a. End User/Admin: - enter an invalid username and password <-2a. System: - shows an error

Use Case UC-3: Purchase: - End User Logs into the site and gets access to purchase products and make payments.
Use Case UC-4: Admin: - Admin Logs into the site and manage products, blogs, and other details of the application.

Non-functional requirements

3.2.3. Performance Requirements: -

- Online Organic food shopping shall support up to a million customers at a time.
- The response time of the server should be less.

3.2.4. Safety and Security: -

- purchase must be placed securely.

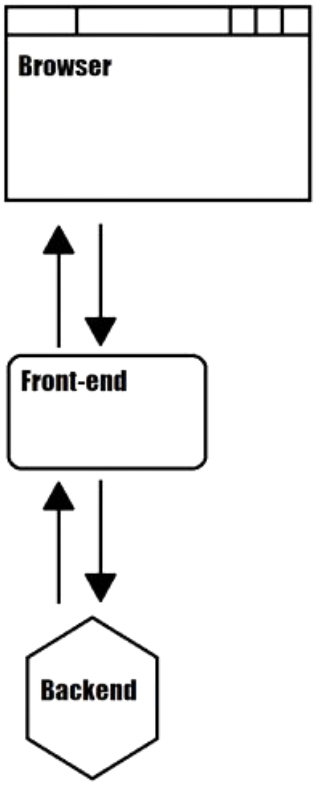
3.2.5. Security

- Data is decentralized.
- Unfeasibly hard to hack.

4. Architecture

4.1. The architecture follows a modular and component-based approach, allowing for flexibility and scalability. It incorporates elements of the microservices architectural style to enhance maintainability and deployment independence.

4.2. Architectural model (includes components and their interactions)



Front-End	Database	Backend
Register VerifyRegInfo Login VerifyLogInfo purchase Database	admin user/customer	database purchased emailer manage add remove

4.3. Technology, software, and hardware used.

Technology: Bootstrap 5.x framework, HTML5, CSS3, JavaScript.

Software: Code editors, design tools, version control systems.

Hardware: Standard development and hosting servers.

5. Design

User Interface Design

Use Case UC-1: Register

If the user does not have an account a link “Register” is provided in UC-1 Login. This link takes the user to the register page. This register page allows new users to create their accounts.

Use Case UC-2: Login

This page allows a user to log into the system by entering their username and password.

Use Case UC-3 Purchase: - this page allows end users to purchase.

Use Case UC-4 Admin: - admin dashboard Here admin can manage the site, products, blogs, and other details.

5.1. Components Design (static and dynamic models of each component)

Customization Component: Allows users to modify colors, fonts, and other branding elements dynamically.

SEO Optimization Component: Ensures clean code and implements SEO best practices.

Database Component: Manages data related to user accounts, customization settings, and content.

Database Design

The database design includes tables for user accounts, customization settings, and content storage. Relationships ensure data integrity and efficient retrieval.
(please take from MySQL database)

5.2. Traceability from requirements to detailed design models

Project Concepts			
Constraints	Register	Login	Purchase
End Users	x	X	x
Admin	x	x	

6. Test Management

6.1. A complete list of system test cases

Test Case 1: End-User Register	
Use Cases: UC-1	
Techniques	Test Results and Assessments
End-User fills in all required details of the registration form	The system creates a new account and stores it in the database
End-User already has an account that exists	the system will not create another account
End-users do not fill in all the required fields	The system notifies the user to fill in the required fields

Test Case 2: End-User/Admin Login

Use Cases: UC-1, UC-2	
Techniques	Test Results and Assessments
End-User insert their correct username and password	The system verifies with the database and allows access to the user
End-User inserts an incorrect username and password	The system redirects to the login page
End-users enter the correct username and password	Admin needs to change the status of the account

Test Case 3: End-User Purchase	
Use Cases: UC-3	
Techniques	Test Results and Assessments
End-User select products and purchase	The system verifies with the database and insert purchase order in database

Test Case 4: Admin	
Use Cases: UC-4	
Techniques	Test Results and Assessments
Admin Add/Edit	Add products and edit
Admin Delete	Admin deletes products

6.2. Traceability of test cases to use cases

Use Case	Test Cases			
	1	2	3	4
1	x	x		
2		x	x	
3			x	x
4				x

7. Conclusions

7.1 Outcomes of the Project

The Green Template project has achieved its goals, delivering a responsive, customizable, and user-centric web template for organic food eCommerce businesses. The product meets or exceeds all specified requirements, providing a valuable asset for businesses looking to establish a compelling online presence.

7.2 Lessons Learned

- **Effective Risk Management**: Proactive identification and mitigation of risks contribute significantly to project success.

- **Agile Development**: Adopting an Agile approach allows for flexibility and adaptability throughout the development process.
- **User-Centric Design Matters**: Prioritizing user experience and customization options enhances the product's appeal.

In conclusion, the Green Template project has successfully created a solution that addresses the unique needs of organic food eCommerce businesses. The comprehensive project report details each phase of development, from inception to implementation, providing a valuable resource for future projects and continuous improvement initiatives. Lessons learned will inform future endeavours, ensuring ongoing success and innovation in software development.

Future Development

In the future development of this project, we will try to evolve this to the mobile user interface, as well as mobile OTP login and register. We will try to make UI more attractive. We are thinking to add more secure way for authorization and avoid cyber hacking.