A Roof Top Decoration Solution System

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL[

This Project titled "A Roof Top Decoration Solution System - RoofTopDecor, submitted by Md. Nazmus Saadat, ID No: 172-15-997, Farjana Alam Pushpo, ID No: 181-15-11081 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 25 Jan 2023.

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We hereby declare that, this project has been done by us under the supervision of **Professor Dr. Md. Ismail Jabiullah, Professor,** Department of CSE Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

The first online platform for Bangladeshi tree lovers to display their roof tops is RoofTopDecor. There are various buildings in our country. Nowadays, roof top decor is very trendy. However, there is no platform for Roof Top to showcase their different Roof Top Decor ideas. A targeted audience can use RoofTopDecor as a solution to decorate their roof top according to their personal preferences. A roof top management with trees e-commerce solution is also included in RoofTopDecor. Before changing the look of the decor roof, an online store will observe the registered member's payment status. Anyone may purchase a prepackaged pack or a custom pack using this solution, and we will handle user payments. It includes ecommerce management, a blog, and an online store in addition to the portfolio. Users may discuss their recent or past experiences, the cost of tree planting and roof top decoration in the blog area. They can offer fresh concepts to the community. Different kinds of trees, soil, tools, or equipment are needed for each type of roof. It is challenging to gather various tools from various locations. Users may get the necessary trees, soil, equipment, and gadgets in one location in our online store at affordable prices. RoofTopDecor is an open-source project that is free to use, so users may benefit fully from it without having to pay anything by utilizing the internet. This platform will provide some packs with automated. Anyone can get our packs to décor roof top with different trees. We will provide A to Z like, trees, soil, gadgets, tools, labour to set everything. In this report we discussed about all features of this solution with technical overview.

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CHAPTER 1

GENERAL INFORMATION

1.1 Introduction:

For Bangladeshi tree lovers who want to keep track of their experiences, there is RoofTopDecor. There are several venues available to display their everyday activities. We use Facebook to capture daily activities, LinkedIn to record professional postings, and GitHub to store old code. However, there isn't a website dedicated to showcasing simply roof top décor. Facebook makes it simple to share photos taken from rooftops, but when daily updates are made, it gets cluttered. Thus, individuals may only upload information about their roofs on RoofTopDecor, a totally independent online platform. They are able to fill up their profile completely and share it with other users of the network. Establishing a blog and effectively organizing the subject will be simple for them. This is Bangladesh's first all-in-one solution that allows users to arrange rooftops. Finding out how many individuals in our country are interested in roof top decor is simple here. A user's roof top decorating experiences can be shared in the blog area in addition to their portfolio. To assist individuals with decorating their roof tops and managing payments, we offer an e-commerce solution. Controlling payments inside the solution is quite simple. A user may locate all the equipment, plants, labor, and accessories for roof-top decoration in the web store. A user may easily order various equipment and receive home delivery service so they can have a ready-made roof top garden before thinking to decorate a roof top. It is a small platform with four solutions: a blog, an online store, a labor solution, and a portfolio.

1.2 Objectives:

- To establish an unique platform for those who like trees.
- To improve networks of communication for tree lovers.
- To build a Bangladeshi community that is welcoming to tree lovers.
- To make Attention to the decor of the roof top by supply of valuable materials.

1.3 Motivation

Rooftop gardening is popular today and offers excellent earning potential. Trees on roofs may have several positive effects on the economy, society, and ecology, especially in rural areas of developing nations like our own. People may learn more about roof top decor ideas, rules, and costs according to our project. People can give their own experiences while also learning from the experience of others. It will be Bangladesh's first community platform for those who appreciate trees on rooftops. They are not depending on other social media networks or groups. This will be the best platform in our country that make things easy for people.

1.4 Expected Outcome

With our web-based solution, users won't need to focus on other social networking platforms and will experience high levels of user experience. They may utilize our platform to access all of the solutions in one place. We are confident that the community's recommendations and feedback will motivate more people who love trees to check out our suggestions for roof-top decor, which will improve our country's environment, economy, and social view.

CHAPTER 2

BACKGROUND STUDY

2.1 Introduction

Urban dwellers may get a closer look at nature by growing on their rooftops. Rooftop gardening is a personal, environmentally responsible pastime that allows us an opportunity to connect with nature. Roof gardens, or gardens on buildings' rooftops, are becoming more and more common in urban structures since they provide a comfortable haven and enhance the breathtaking view from a rooftop. They serve as an attraction to the building and have positive effects on the environment.

There are many corporate-type services available in our nation, but our effort focuses on building a huge community where users can share their experiences or ask questions in the blog area and choose services that fit their budgets.

Link: https://www.londonlawnturf.co.uk/rooftop-gardens

It is a company based in Uk. Process everything necessary in roof gardening and successfully run the business.

Link: https://m.indiamart.com/impcat/roof-gardening-services.html

It is an Indian online store. India-MART InterMESH Ltd is the company's name. It provides B2B and customer-to-customer sales services via its web platform. They have launched and have been successfully operating a roof gardening service for some time.

Link: https://www.urbanlandscape.com.sg/services/roof-garden/

It is a Singapore-based business that offers rooftop gardening design and maintenance services. Additionally, offers specialized services based on the requirements of its clients.

It's a Bangladeshi business. They deal with gardening on rooftops and interior plants. The corporate kind, however, does not focus on the community and charges very hefty maintenance fees.

2.2 Related Work

Related work for a roof top decoration project includes the growing trend of purchasing plants and decoration accessories through social media platforms. Many individuals are turning to these platforms as a way to purchase unique and rare plants that may not be available at traditional gardening stores.

- One of the key aspects of the roof top decoration project is the use of plants. Many people are turning to social media to purchase plants for their roof top spaces. Social media platforms like Instagram and Facebook have become popular places to find and buy plants, with many nurseries and plant sellers using these platforms to connect with customers. This trend is a reflection of the growing interest in indoor and outdoor gardening, and the increasing popularity of green roofs and rooftop gardens.

- In addition, there are also corporate companies and individuals who offer similar services, but at a much higher cost. These companies may provide a wide range of services, including design consultation, installation, and maintenance. However, their prices can be prohibitively expensive for many individuals.

- One area where there is a lack of service is in the area of labour support. Many companies do not offer support for the installation and maintenance of plants and decorations on rooftops. This can be a significant challenge for those who are not experienced in gardening or landscaping.

CHAPTER 3

PROJECT MODEL & SPECIFICATIONS

3.1 Introduction

In this section, we are seeking to further develop the suggested model with significant charts and descriptions. What kind of model should we use to properly describe our concept and to make it user-friendly? Once a model is selected, what features might it need to be built upon?

3.2 BPM (Business Process Modeling)

Business process modeling (BPM) is a task in business process management and systems engineering that represents a company's business so that they may be evaluated, enhanced, and automated. Business analysts with skills in modeling generally carry out BPM. BPM aids in the development of a working business model.

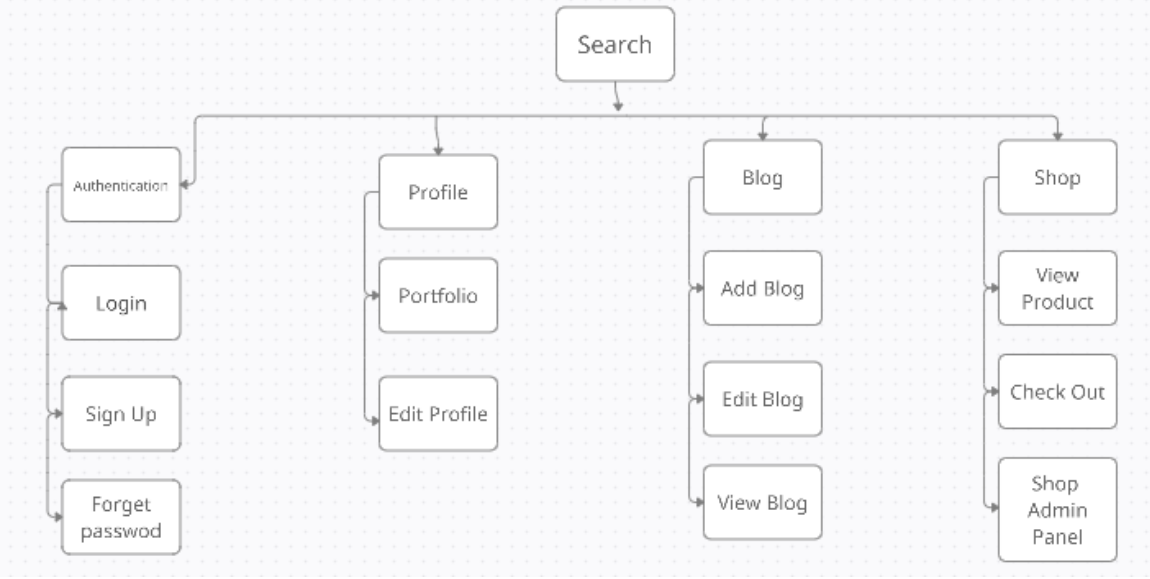

Fig 3.1: Business Process Model

3.3 Relational Schemas

This is the Relational Schemas of our database.

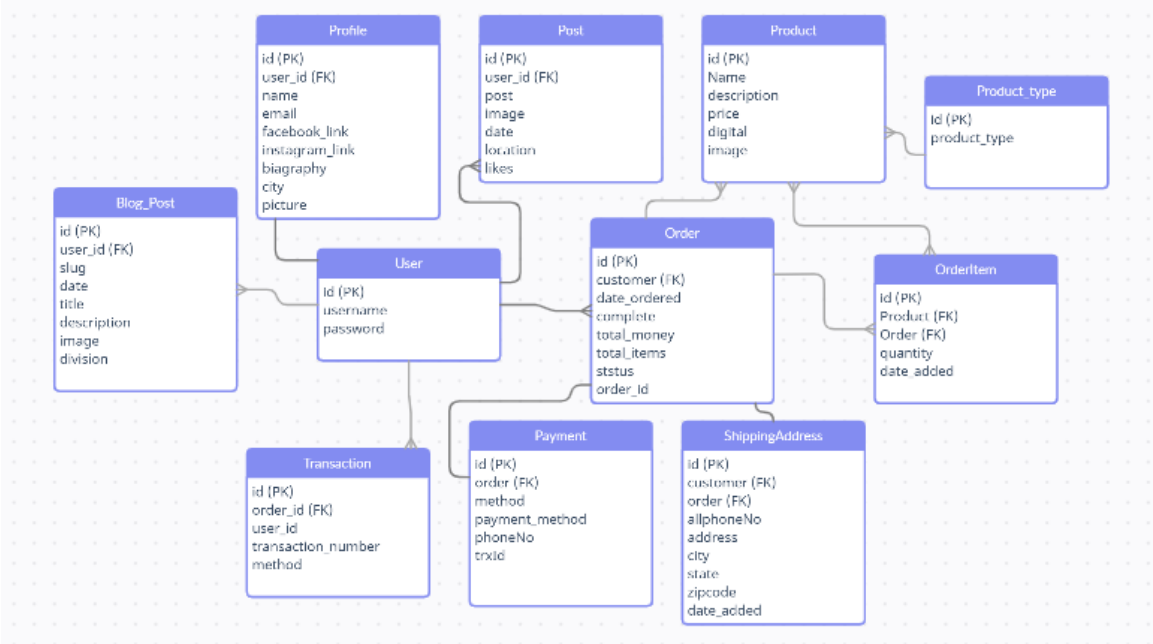

Fig 3.2: Relational Schemas

3.4 Requirements & Specifications

A project's requirements and specifications are important because they specify the materials needed to construct the project. For a while, depending on how the project develops and how much demand there is, requirements and specifications may vary.

3.4.1 Hardware Requirements

In order to develop the project, we'll need hardware elements like:

- Computer (Desktop/Laptop)
- Internet Connection

3.4.2 Technical Requirements

We utilized a variety of programming languages and frameworks to create the application in order to make it user-friendly.

Frontend: HTML5, CSS3, JavaScript, jQuery and Bootstrap.

Backend: Python, Django, Django Rest Framework.

Database: PostgreSQL

3.4.2.1 HTML5

Hypertext Markup Language is what HTML stands for. A web page or web application can be shown using HTML. CSS assists in the creation of designs and color schemes. A web page is mostly built using HTML. The implementation of tags makes HTML operate. There are several tags available for page design. HTML has attributes and elements. It has a variety of content types, each of which is acceptable in some situations but not others [1]. Users of the Internet navigate the web via hypertext. Users are directed to new sites by clicking on hyperlinks—special text that can be found in text. Users can access any page on the Internet by clicking on one of the accessible links because the usage of hyper implies that it is not linear. HTML tags designate the content they contain as a certain sort of text by applying markup to it. To specifically highlight a word or phrase, markup language can take the shape of boldface or italicized font, for instance.

3.4.2.2 CSS3

To integrate premium colors and designs, CSS is an adjunct programming language to HTML. HTML pages are modified via CSS. The layout of websites is controlled by CSS. It is capable of performing it for everyone at once. There are three kinds of CSS. The best CSS is Inline CSS, followed by Internal or Embedded CSS, and External CSS. To function, the CSS file must be linked to the HTML page. The HTML file wouldn't change if the CSS file wasn't linked. Cascading Style Sheet Level 3 is known as CSS3, and it is the most recent version of CSS. Structure, layout, and formatting of web pages are performed using it. All contemporary web browsers now support CSS3, which now

has a number of new capabilities. The division of CSS standards into distinct modules makes them easier to learn and apply, and this is CSS3's most significant feature. New CSS3 features include: (1) Combinator: CSS3 introduces a new General Sibling combinator that uses the tilde () combinator to match up with sibling elements.(2) CSS Selectors: CSS3 selections are a series of straightforward and simple selectors that are far more sophisticated than the basic selectors provided by CSS.(3) Pseudo-elements: CSS3 now has a ton of new pseudo-elements that make in-depth customization simple. Even the new double colon convention:: is included.(4) New border style elements include border-radius, image-slice, image-source, values for "width stretch," etc. in the most recent version of CSS3.(5) Background-clip, size, style, and origin properties, among other new capabilities, have been introduced to CSS3. [2]

3.4.2.3 JavaScript

For making websites interactive, JavaScript is a language that is applied to both of the server-side and client-side. Users can access engage components thanks to JavaScript. JavaScript lends HTML and CSS a helping hand to make a website more interactive. In order to use ajax and manipulate the DOM, we employed JavaScript. Web developers frequently utilize JavaScript, a simple programming language, to build highly dynamic interactions into web sites, servers, and sometimes even video games. JavaScript is typically used by developers in addition to HTML and CSS. When formatting HTML components, the scripting language and CSS function well together. However, JavaScript continues to provide user interaction, something CSS cannot achieve on its own. [3]

3.4.2.4 jQuery

The JavaScript library jQuery provides easy-to-use API endpoints for DOM tree manipulation. Working with ajax and CSS modification with jQuery is fairly simple. The JavaScript library jQuery is compact, lightweight, and quick. It supports a wide range of browser types and is cross-platform Write little, do some more is another term for it. because it combines several routine operations that often require many lines of JavaScript code into methods that may be invoked whenever necessary. Numerous complex

JavaScript features, such as DOM manipulation and AJAX operations, may also be greatly streamlined. The jQuery JavaScript library is compact, quick, and light. Platforms don't matter to jQuery. With jQuery, you can "write less, accomplish more." AJAX calls and DOM manipulation are easier using jQuery. [4]

3.4.2.5 Bootstrap

An open-source CSS framework is known as Bootstrap. Fonts, forms, buttons, navigational, and other interface elements are all beneficial. Because the JavaScript extension is supported, creating a visually attractive website is simple. A free and open source front-end development framework called Bootstrap is used to build websites and internet-based applications. Bootstrap offers a set of vocabulary for template designs and is designed to allow responsive construction of mobile-first websites. Developers merely need to place the code into a pre-defined grid structure because Bootstrap contains the fundamentals for developing flexible websites. Hypertext Markup Language (HTML), cascading style sheets (CSS), and JavaScript serve as the foundation for the Bootstrap framework. By using Bootstrap, web designers may create websites much more quickly without having to spend time thinking about fundamental instructions and functionalities.

3.4.2.6 Python

A powerful general-purpose programming language is Python. The developer community favors Python above other languages. It is a language that is interpreted. mostly used in desktop applications, online servers, and machine learning. Guido van Rossum created Python, an interpreted, object-oriented, high-level programming language with dynamic semantics. It was first made available in 1991. The name "Python" is a tribute to the British comedy troupe Monty Python and is meant to be both simple and entertaining. Because it manages most of the complexity for the user, Python has a reputation for being a newcomer language, displacing Java as the most popular beginning language and allowing novices to concentrate on completely understanding programming ideas instead of small details. Python is famous for rapid development of applications and as a scripting or glue language to tie existing components together because of its high-level,

built-in data structures, dynamic typing, and dynamic binding. Python is also used for server-side application development, software engineering, math and science, and device scripting. Python's easy-to-learn syntax and emphasis on reading result in lower software maintenance fees. Furthermore, Python's support for modules and packages makes it easier to reuse code and create modular programs. As an open source community language, Python is constantly being developed by multiple independent programmers.[5]

3.4.2.7 Django

Django is a web server framework built in Python. Model-template-view architecture is used. The majority of the major hassles in web server building are handled by it. It has an integrated admin panel and is a fairly developed framework. WSGI and ASGI are used to make it function in both synchronous and asynchronous modes. Python is a computer language used to develop the web application framework known as Django. Model View Template (MVT) is the design pattern on which it is based. Due to its capability for quick evolution, the Django is quite demanding. After gathering customer requirements, building an application takes less time. The web framework for deadline-driven perfectionists describes itself with a well-known tagline. [6]

3.4.2.8 Django Rest Framework

Along with the Django framework, it provides a fully working web API generation framework. We may create API endpoints for our mobile or other devices using the Django Rest Framework. It employs all class-based as well as function-based views. The Django REST framework (DRF) is a Python/Django toolkit that is open source, established, and widely supported with the goal of creating complex online APIs. Although the Django REST framework comes with a large number of functionality, the fundamental view class is fairly basic, as well as the framework is generally straightforward to use. The DRF's major goal is to clearly distinguish between a model, a generalized wire representation (such as JSON, XML, etc.), and a collection of generic Class-Based Views that may be tailored to fulfill any individual API endpoint using a Serializer which thus outlines their mapping. [7]

3.5 USE-CASE Diagram

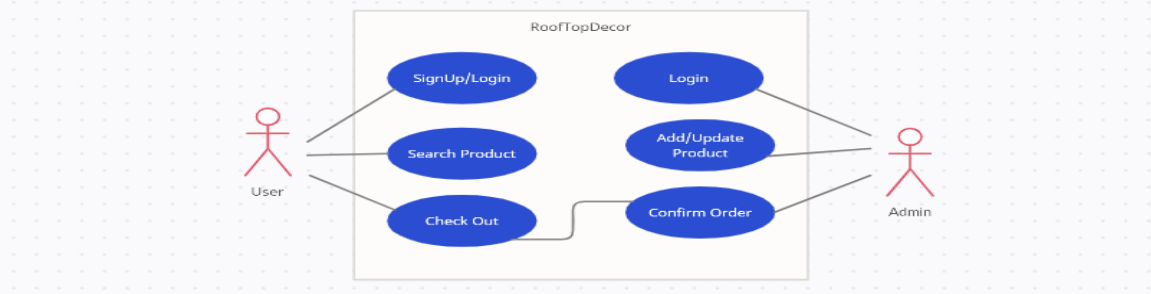

Fig 3.3: Shop - Use-Case Diagram

3.6. PR Model

This model represents manual part of the project. Here we can see the project development and implementation steps from scratch physically.

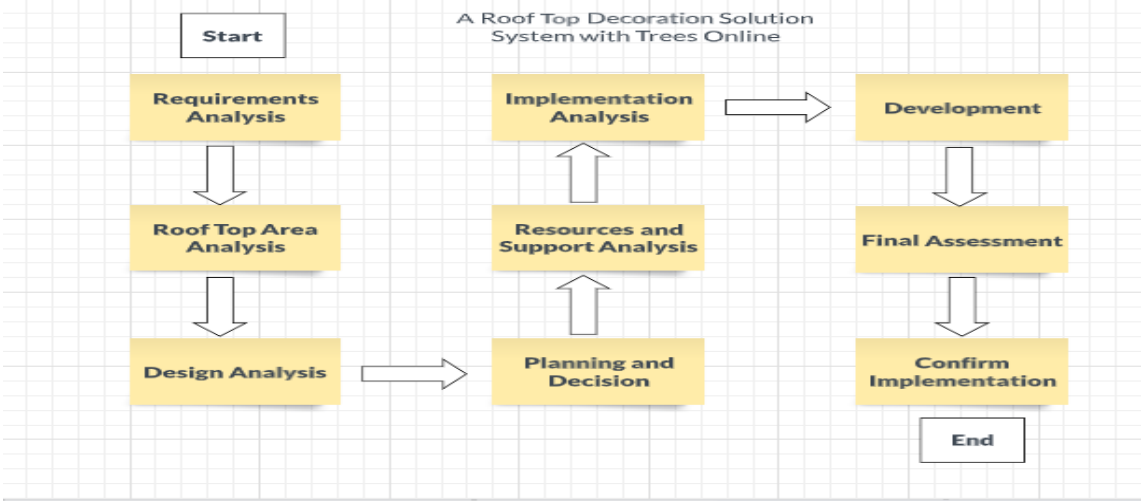

Fig 3.4: PR Model

3.7. Description

3.7.1. Requirements Analysis

An A roof top decoration project typically involves the installation of decorative elements on the roof of a building. These elements can include lighting, landscaping, or other decorative features. The process of planning and executing a roof top decoration project typically involves several steps, including:

- Defining the project goals: The first step in any roof top decoration project is to define the goals and objectives of the project. This might include identifying the specific decorative elements that will be included, as well as determining the overall aesthetic or theme of the roof top space.
- Assessing the roof structure: Before any decorative elements can be installed on the roof, it is important to assess the structural integrity of the roof itself. This includes evaluating the condition of the roofing material, checking for any signs of damage or wear, and ensuring that the roof can support the weight of the decorative elements.
- Obtaining necessary permits: Depending on the location of the building, it may be necessary to obtain permits or approvals from local authorities before proceeding with the roof top decoration project. This might include building permits, electrical permits, or other types of approvals.
- Designing the roof top space: Once the goals and requirements of the project have been defined, the next step is to design the roof top space. This might involve creating a layout for the decorative elements, selecting materials and colors, and determining the overall aesthetic of the space.
- Installing the decorative elements: The final step in the process is to install the decorative elements on the roof. This might involve installing lighting, landscaping, or other decorative features. It is important to follow proper safety protocols during the installation process to ensure the safety of all workers and to prevent any damage to the roof or building.

3.7.2. Roof Top Area Analysis

Roof top area analysis is the process of evaluating and assessing the roof top space of a building. This analysis is typically conducted as part of the planning process for a roof top decoration or development project. The goal of a roof top area analysis is to gather information about the roof top space, including its size, shape, and condition, as well as any existing structures or features.

To conduct a roof top area analysis, the following steps might be taken:

- Measure the roof top area: The first step in the analysis process is to accurately measure the size and shape of the roof top space. Involve using a tape measure, laser measure, or other measuring tool to determine the dimensions of the roof.
- Evaluate the roof structure: It is important to assess the structural integrity of the roof before proceeding with any decorative or development projects. This might involve evaluating the condition of the roofing material, checking for any signs of damage or wear, and ensuring that the roof can support the weight of any additional structures or features.
- Identify any existing structures or features: The roof top space might already have some existing structures or features, such as HVAC units, vent pipes, or skylights. It is important to identify and document these elements as part of the analysis process.
- Assess the surrounding environment: The roof top area is not isolated from the rest of the building and the surrounding environment. Therefore, it is important to assess the surrounding environment to understand any potential impacts on the roof top space. This might include evaluating the location of the building, the surrounding weather conditions, and any nearby structures or features.

So that, a roof top area analysis is an important step in the planning process for any roof top decoration or development project. It helps to gather information about the roof top space and identify any potential challenges or constraints, which can inform the design and execution of the project.

3.7.3. Design Analysis

Roof top decoration design analysis is the process of evaluating and assessing the design plans for a roof top decoration project. This analysis typically involves reviewing the proposed design elements, such as lighting, landscaping, or other decorative features, to ensure that they are appropriate for the space and meet any necessary requirements or guidelines.

During the design analysis process, the following steps might be taken:

- Review the design plans: The first step is to carefully review the design plans for the roof top decoration project. This might include reviewing drawings, sketches, or other visual representations of the proposed design elements.
- Evaluate the feasibility of the design: The next step is to assess the feasibility of the proposed design. This might involve evaluating the structural integrity of the roof, determining whether the proposed elements are appropriate for the space, and identifying any potential challenges or constraints.
- Review any necessary guidelines or requirements: Depending on the location of the building and the nature of the project, there may be certain guidelines or requirements that must be followed. It is important to review these guidelines and ensure that the design plans meet any necessary requirements.
- Identify any potential issues or concerns: As part of the design analysis process, it is important to identify any potential issues or concerns that might arise during the execution of the project. This might include identifying potential safety concerns, determining whether any special equipment or materials will be needed, or identifying any other potential challenges.

Overall, roof top decoration design analysis is an important step in the planning process for any roof top decoration project. It helps to ensure that the design plans are feasible, meet any necessary guidelines or requirements, and address any potential issues or concerns that might arise during the execution of the project.

3.7.4. Planning and Decision

Roof top decoration planning and decision-making involves the process of developing a plan for a roof top decoration project and making informed decisions about the various aspects of the project. This might include defining the goals and objectives of the project, assessing the roof top space, obtaining necessary permits, and designing the roof top space.

During the planning and decision-making process, it is important to consider a variety of factors, including the size and shape of the roof top space, the condition of the roof, any existing structures or features, and any necessary guidelines or requirements. It may also be necessary to consult with experts or specialists, such as architects, engineers, or contractors, to ensure that the project is feasible and meets any necessary standards or regulations.

Ultimately, the goal of roof top decoration planning and decision-making is to develop a comprehensive and well-informed plan for the project that meets the goals and objectives of the project while also taking into account any potential challenges or constraints. This requires careful analysis and decision-making to ensure that the project is executed successfully and meets the desired outcomes.

3.7.5. Resources and Support Analysis

Roof top decoration resources and support analysis involves the process of identifying and assessing the resources and support that will be needed to successfully execute a roof top decoration project. This might include identifying the materials and equipment that will be needed, as well as the personnel and expertise required to complete the project.

The following steps might be taken:

- Identify the materials and equipment needed: The first step is to identify the materials and equipment that will be required to complete the project. This might include items such as lighting, landscaping materials, or other decorative elements.
- Determine the personnel and expertise required: It is important to assess the personnel and expertise that will be needed to complete the project. This might include identifying the specific skills and expertise that are required, as well as determining the number of workers that will be needed to complete the project.
- Assess the availability of resources and support: Once the resources and support that are needed have been identified, the next step is to assess their availability. This might involve evaluating the cost of the materials and equipment, determining whether the necessary personnel and expertise are available, and identifying any potential challenges or constraints.
- Develop a plan for acquiring the necessary resources and support: Based on the availability of resources and support, it may be necessary to develop a plan for acquiring them. This might involve identifying potential suppliers or contractors, negotiating prices or terms, and developing a timeline for acquiring the necessary resources and support.

Finally, roof top decoration resources and support analysis is an important step in the planning process for any roof top decoration project. It helps to ensure that the necessary resources and support are available and that the project has the best chance of being completed successfully.

3.7.6. Implementation Analysis

Implementation analysis for a roof top decoration project involves the process of evaluating and assessing the steps that will be taken to execute the project. This might include identifying the specific tasks and activities that will be required to complete the project, as well as developing a timeline and budget for the project.

During the implementation analysis process, the following steps might be taken:

- Identify the specific tasks and activities required: The first step is to identify the specific tasks and activities that will be required to complete the project. This might include installing lighting, landscaping, or other decorative elements, as well as any necessary preparatory work or cleanup.
- Develop a timeline for the project: It is important to develop a timeline for the project that outlines the specific tasks and activities that will be completed, as well as the sequence in which they will be completed. This timeline should also include any necessary milestones or deadlines.
- Determine the budget for the project: Another important aspect of the implementation analysis process is determining the budget for the project. This might involve estimating the cost of materials and labor, as well as any other expenses that will be incurred during the project.
- Assess any potential risks or challenges: As part of the implementation analysis process, it is important to assess any potential risks or challenges that might arise during the project. This might include identifying potential safety hazards, determining the impact of weather or other external factors, and identifying any other potential challenges.

Overall, implementation analysis for a roof top decoration project is an important step in the planning process that helps to ensure that the project is completed successfully and on time.

3.7.7. Development

Manual Implementation The development process for a roof top decoration project typically involves several steps, including:

- Defining the goals and objectives of the project: The first step in the development process is to define the goals and objectives of the project. This might include identifying the specific decorative elements that will be included, as well as determining the overall aesthetic or theme of the roof top space.
- Assessing the roof top space: Before proceeding with the project, it is important to assess the size, shape, and condition of the roof top space. This might involve measuring the space, evaluating the structural integrity of the roof, and identifying any existing structures or features.
- Obtaining necessary permits: Depending on the location of the building, it may be necessary to obtain permits or approvals from local authorities before proceeding with the project. This might include building permits, electrical permits, or other types of approvals.
- Designing the roof top space: Once the goals and requirements of the project have been defined, the next step is to design the roof top space. This might involve creating a layout for the decorative elements, selecting materials and colors, and determining the overall aesthetic of the space.
- Developing a plan for implementation: The final step in the development process is to develop a plan for implementing the project. This might involve identifying the specific tasks and activities that will be required, developing a timeline for the project, and determining the budget for the project.

So that, the development process for a roof top decoration project requires careful planning and attention to detail to ensure that the end result is both functional and aesthetically pleasing.

3.7.8. Final Assessment

The final assessment of a roof top decoration project involves evaluating the completed project to determine whether it meets the goals and objectives that were set out in the planning process. This assessment might include reviewing the finished product, evaluating the quality and appearance of the decorative elements, and determining whether the project was completed within the agreed upon timeline and budget.

The final assessment is an important step in the roof top decoration process, as it helps to determine whether the project was successful and whether any changes or improvements should be made in the future. It is also an opportunity to gather feedback from stakeholders, such as building owners or occupants, and to identify any areas for improvement in the planning and execution process.

3.7.9. Confirm Implementation

Confirming the implementation of a roof top decoration project involves verifying that all of the necessary preparations have been made and that the project is ready to proceed. This might involve reviewing the project plans and ensuring that all necessary materials and equipment are available, as well as verifying that all necessary permits and approvals have been obtained.

It is also important to confirm that all necessary personnel and expertise are in place and that any necessary safety protocols are in place. This might involve conducting safety training, issuing personal protective equipment, and establishing a safety plan for the project.

Before proceeding with the implementation of the project, it is also important to confirm that all necessary stakeholders, such as building owners or tenants, are aware of the project and have provided their approval. Overall, confirming the implementation of a roof top decoration project involves ensuring that all necessary preparations have been made and that the project is ready to proceed safely and efficiently.

3.8. Project Development Process

The project development process for a roof top decoration project typically involves several steps, including:

3.8.1. Define the project goals: The first step in the project development process is to define the goals and objectives of the project. This might include identifying the specific decorative elements that will be included, as well as determining the overall aesthetic or theme of the roof top space. It is important to clearly define the goals of the project to ensure that the project is aligned with the desired outcomes and that all stakeholders are on the same page.

3.8.2. Assess the roof top space: Before proceeding with the project, it is important to assess the size, shape, and condition of the roof top space. This might involve measuring the space, evaluating the structural integrity of the roof, and identifying any existing structures or features. This assessment will help to inform the design and layout of the roof top space.

3.8.3. Obtain necessary permits: Depending on the location of the building, it may be necessary to obtain permits or approvals from local authorities before proceeding with the project. This might include building permits, electrical permits, or other types of approvals. It is important to ensure that all necessary permits are obtained before starting the project to avoid any delays or issues.

3.8.4. Design the roof top space: Once the goals and requirements of the project have been defined and the roof top space has been assessed, the next step is to design the roof top space. This might involve creating a layout for the decorative elements, selecting materials and colors, and determining the overall aesthetic of the space. It is important to carefully consider the design of the space to ensure that it meets the goals of the project and is functional and aesthetically pleasing.

3.8.5. Develop a plan for implementation: The final step in the project development process is to develop a plan for implementing the project. This might involve identifying the specific tasks and activities that will be required, developing a timeline for the project, and determining the budget for the project. It is important to carefully plan the execution of the project to ensure that it is completed on time and within budget.

3.8.6. Identify resources and support: Identifying and acquiring the necessary resources and support is an important step in the project development process. This might include identifying the materials and equipment that will be needed, as well as the personnel and expertise required to complete the project. It is important to ensure that all necessary resources and support are in place before starting the project to avoid any delays or issues.

3.8.7. Conduct a risk assessment: It is important to conduct a risk assessment to identify any potential risks or challenges that might arise during the project. This might include identifying potential safety hazards, determining the impact of weather or other external factors, and identifying any other potential challenges. A risk assessment will help to inform the development of contingency plans and ensure that the project is completed safely and successfully.

3.8.8. Develop a budget and timeline: Developing a budget and timeline for the project is an important step in the project development process. The budget should include an estimation of the cost of materials and labor, as well as any other expenses that will be incurred during the project. The timeline should outline the specific tasks and activities that will be completed, as well as the sequence in which they will be completed. It is important to carefully plan the budget and timeline to ensure that the project is completed on time and within budget.

3.8.9. Evaluate and monitor progress: Regularly evaluating and monitoring the progress of the project is an important step in the project development process. This might involve reviewing project milestones and deadlines, tracking the budget and timeline, and identifying any potential issues or challenges. By regularly evaluating and monitoring progress, it is possible to make adjustments or course corrections as needed to ensure that the project is completed successfully.

In conclusion, the project development process for a roof top decoration project involves several steps, including defining the project goals, assessing the roof top space, obtaining necessary permits, designing the roof top space, and developing a plan for implementation. It is important to carefully consider each of these steps to ensure that the project is completed successfully and meets the desired outcomes. Other considerations that might be part of the project development process include identifying and acquiring necessary resources and support, conducting a risk assessment, developing a budget and timeline, communicating with stakeholders, and evaluating and monitoring progress. By following a careful and thorough project development process, it is possible to successfully complete a roof top decoration project that meets the goals and objectives of the project.

3.9. Algorithm

The following is a detailed algorithm for planning and executing a roof top decoration project physically/manually:

Step 1: Define the project goals

Step 2: Assess the roof top space

Step 3: Identify and acquire necessary resources and support

Step 4: Develop a plan for implementation

Step 5: Resources gathering for the project

Step 6: Start developing the project

Step 7: Confirm Project Completion

Step 8: Evaluate the project

Step 9: Review final result

CHAPTER 4

FEATURES & DESIGNS FOR WEB APPLICATION

4.1 Introduction

A roof top decoration service would likely offer a range of features to help clients decorate and enhance their rooftop spaces. Some potential features of such a service might include:

Consultation services, in which a design expert would visit the client's rooftop to assess the space and offer decorating ideas and suggestions. A community or blog can help people to get and share relevant ideas for a perfect roof top decoration.

Custom design plans, in which the service creates a detailed plan for decorating the rooftop space, including recommendations for furniture, plants, lighting, and other decor items.

Installation/Labour services manually, in which the service handles the actual installation of the chosen decor items on the rooftop. This could include tasks like setting up furniture, planting plants, and hanging lighting.

Maintenance services, in which the service helps clients keep their rooftop spaces looking beautiful and well-maintained over time. This could include tasks like cleaning, pruning plants, and replacing worn or damaged items.

A wide range of decor options, including furniture, plants, lighting, and other accessories, to suit a variety of styles and budgets. Customization options, such as the ability to choose different colors, patterns, and finishes for decor items.

4.2 Design and Layout

Effective website design and layout should work together to create a seamless and engaging experience for visitors, with a clear hierarchy of information and easy-to-use navigation. By considering both design and layout, we developed the website that are visually appealing and user-friendly, and that effectively communicate their message to their audience.

4.3 Main Features

We have some features that solve problem and difficulty to users.

4.3.1 Blog

Customer will do nothing physically. They will order and we will provide A-Z resources including labours. Offline labor support can potentially make rooftop decoration easier in several ways:

There are several ways in which a rooftop blog can be important and beneficial:

- A rooftop blog can provide valuable information and inspiration for those looking to create or improve their rooftop spaces. This could include ideas for decorating, tips for maintaining a rooftop garden, and information about the latest products and trends in rooftop design.
- A rooftop blog can serve as a platform for sharing ideas and experiences with others who have an interest in rooftop spaces. This could help to foster a sense of community and allow individuals to learn from and connect with others who share their interests.
- A rooftop blog can be a useful resource for businesses and organizations that offer products or services related to rooftop design and decor. By sharing information and ideas on a blog, these companies can reach a wider audience and showcase their expertise in the field.

- By regularly publishing articles and posts featuring new decor trends and products, a rooftop blog can help to keep readers up-to-date on the latest developments in the field. This can be especially useful for those who are looking for new and innovative ideas for their rooftop spaces.
- A rooftop blog can also serve as a platform for showcasing the work of designers and decorators who are working on new and innovative projects. By featuring these projects on the blog, readers can get a sense of what is possible and be inspired to try new ideas in their own rooftop spaces.
- A rooftop blog can also serve as a marketing tool for businesses and organizations that offer products or services related to rooftop decoration. By sharing information about new products and services on the blog, these companies can reach a wider audience and generate interest in their offerings.
- In this rooftop blog readers can submit their own ideas and projects to be featured on the blog. This can be a great way for individuals to share their work with a wider audience and get feedback and support from others in the community.

4.3.2 Ecommerce

A rooftop decoration idea sharing blog or community that includes an ecommerce component can offer several benefits to users:

By featuring a range of decor products and accessories on the blog, readers can easily purchase items they are interested in without having to search multiple websites. This can save time and make the process of decorating their rooftop spaces more convenient.

An ecommerce component can also make it easier for readers to find and purchase the specific products and items that are featured in the blog and shop page. This can help to bring the ideas and inspiration from the blog to life and make it easier for readers to implement them in their own spaces.

In some cases, a rooftop decoration blog with an ecommerce component may offer exclusive discounts or promotions to readers, which can make it more attractive to follow and shop on the blog.

An ecommerce component can also provide a revenue stream for the blog and help to support its ongoing operations and content creation.

Overall, a rooftop decoration idea sharing blog with an ecommerce component can offer a range of benefits to users, making it easier and more convenient to find and purchase products and ideas for decorating their rooftop spaces.

4.4 Search

A search bar is a common feature on websites and online platforms that allows users to search for specific content, such as users, blog posts, or products. By using a search bar, users can quickly and easily find the information or items they are looking for, rather than having to navigate through multiple pages or menus.

On a rooftop decoration blog or platform, a search bar could be used to allow users to search for specific users, blog posts, or products related to rooftop decoration. For example, if a user is looking for information about rooftop gardening, they could use the search bar to find relevant blog posts or products. Similarly, if a user is looking for a specific product, such as a particular type of outdoor furniture, they could use the search bar to find it.

A search bar can be a valuable feature on a rooftop decoration blog or platform, as it allows users to easily find the information or items they are looking for, and can help to make the site more user-friendly and accessible.

4.5 User Sign Up

User sign up is the process of creating an account on a website or application. This typically involves providing personal information, such as a name and email address, and creating a username and password. Once a user has completed the sign up process, they

can access the features and services of the website or application. Signing up for an account on a rooftop decoration blog, for example, might allow a user to save and share their favorite decor ideas, leave comments on blog posts, and access exclusive discounts or promotions.

4.6 User Login

A user login feature allows users to create an account and log in to a website or application. This can provide several benefits, such as:

Personalization: A user login feature can allow a website or application to personalize the user's experience based on their preferences and previous interactions.

Security: A user login feature can help to protect the user's personal information and prevent unauthorized access to their account.

Convenience: A user login feature can allow users to easily access their account and saved information from any device, without having to enter their information repeatedly.

Community: A user login feature can also allow users to connect and interact with other members of a community or platform, and share ideas and experiences.

4.7 Profile

A user profile on a rooftop decoration idea sharing platform could include an image of the user, their name, links to their social media accounts, and a feature for posting and sharing their own ideas and projects. This type of profile would allow users to connect with each other and share their ideas and experiences, and could also provide a way for users to showcase their own work and get feedback from others in the community.

4.8 Profile Post

A profile post is a type of online content that is published on a user's personal profile or page. We have this feature on our platform like other social media profile, a personal blog, or any other type of online platform that allows users to share content with their followers or friends. Profile posts are typically written by the user themselves, and can take the form of text, images, video, or other types of media. Profile posts can be used to share updates, thoughts, experiences, or other personal content with others.

4.9 Blog Post

A rooftop blog posts can be a valuable resource for individuals and communities interested in creating and maintaining beautiful and functional rooftop spaces. It can provide inspiration and ideas for decorating, as well as a platform for sharing experiences and connecting with others who have an interest in rooftop spaces. A rooftop blog that includes an ecommerce component can also make it easier for readers to purchase decor items and bring the ideas from the blog to life in their own spaces. An offline labor support team can also make rooftop decoration easier by providing skilled labor and handling the more labor-intensive aspects of the project.

4.10 Buy product and service

An ecommerce component can make it easier for users to buy products and services related to rooftop decoration. This can include items like outdoor furniture, plants, lighting, and other decor items. An offline labor support team can provide services like installation, maintenance, and customization to help homeowners create and maintain beautiful and functional rooftop spaces. By featuring these products and services on a rooftop decoration idea sharing blog, readers can easily find and purchase the items and services they are interested in, and bring the ideas and inspiration from the blog to life.

4.11 Admin panel

The admin panel of a rooftop decor website is a tool that allows the website administrator to manage and update various aspects of the site, including posts, users, products, and personal data. Through the admin panel, the administrator can add, delete, and update these items as needed. By using the admin panel, the administrator can effectively manage and maintain the website, ensuring that it remains up-to-date and functioning.

4.12 Design Layout

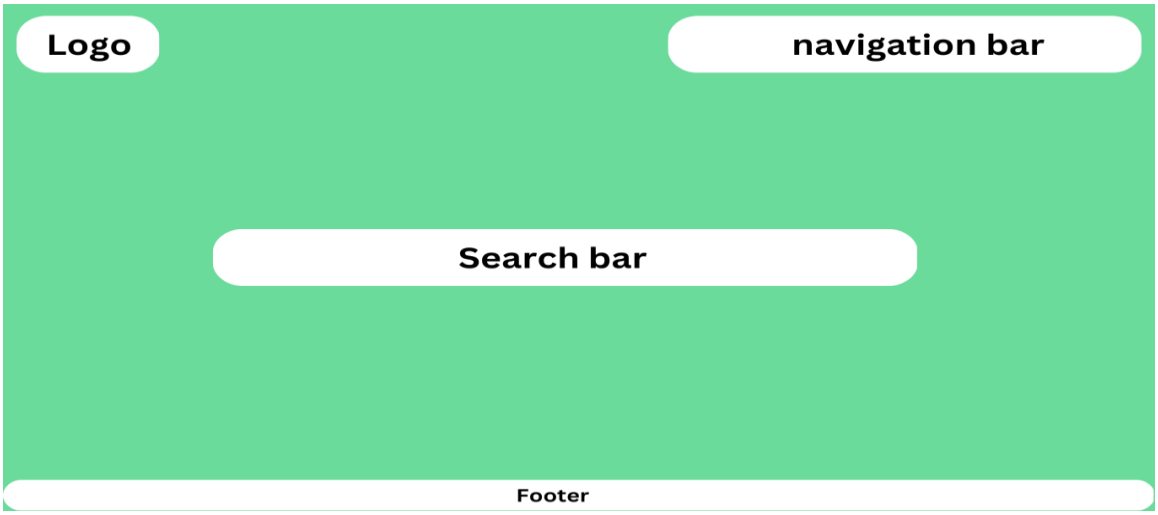

Fig 4.1: Home page layout

Fig 4.2: Sign Up layout

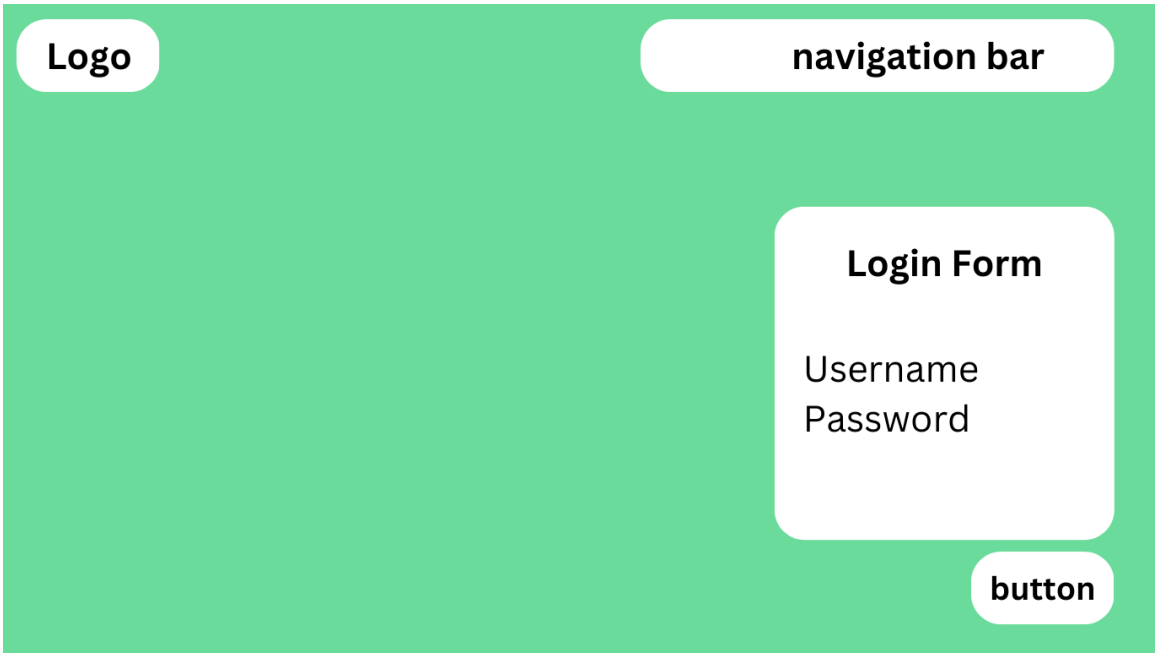

Fig 4.3: Login layout

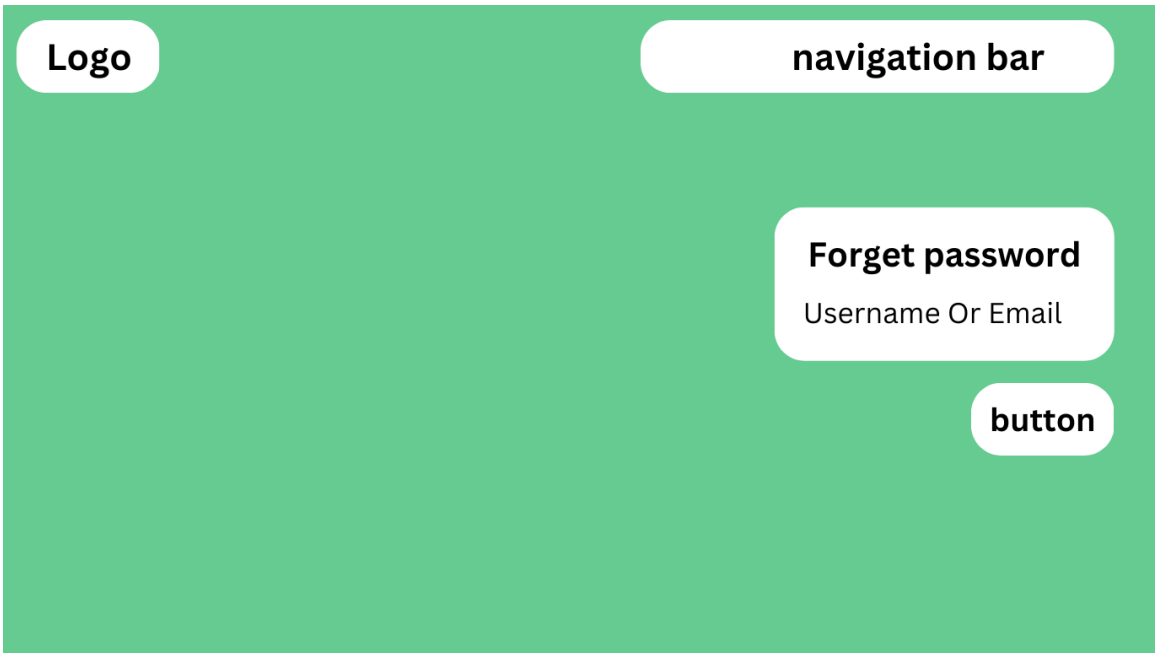

Fig 4.4: Forget Password layout

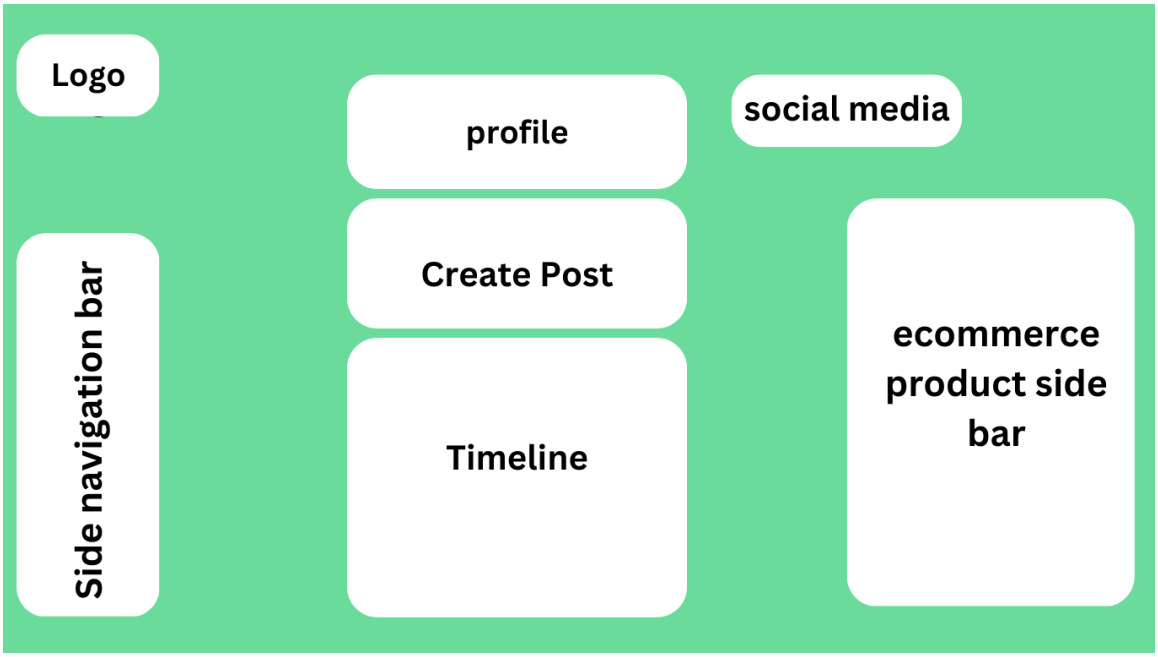

Fig 4.5: Profile layout

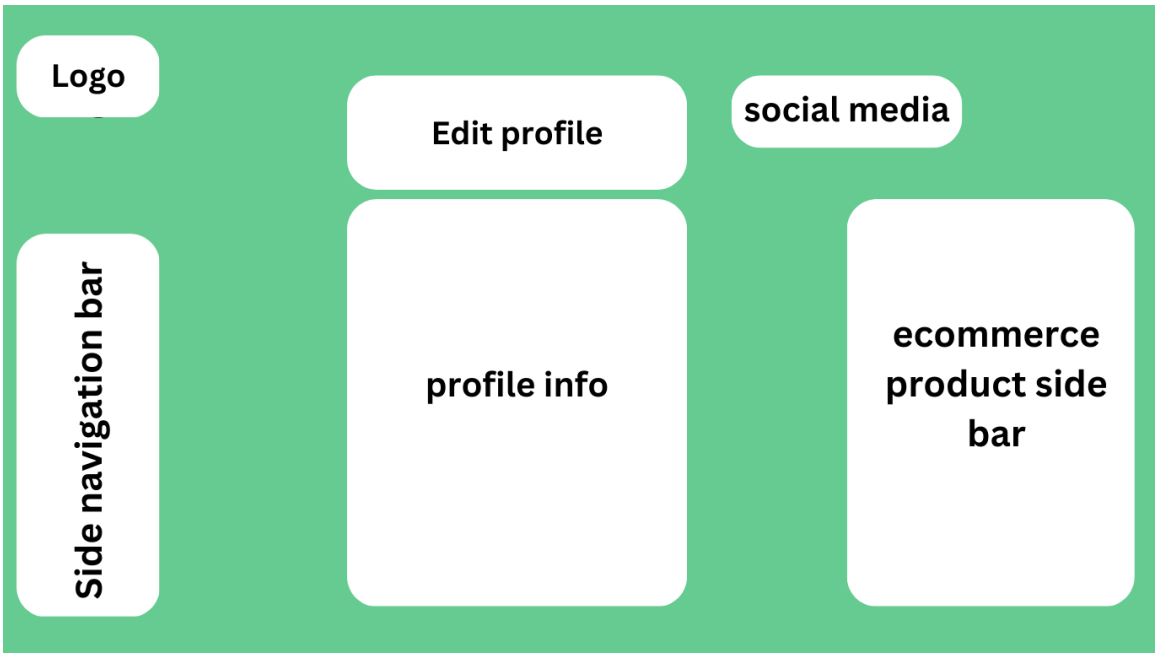

Fig 4.6: Edit profile layout

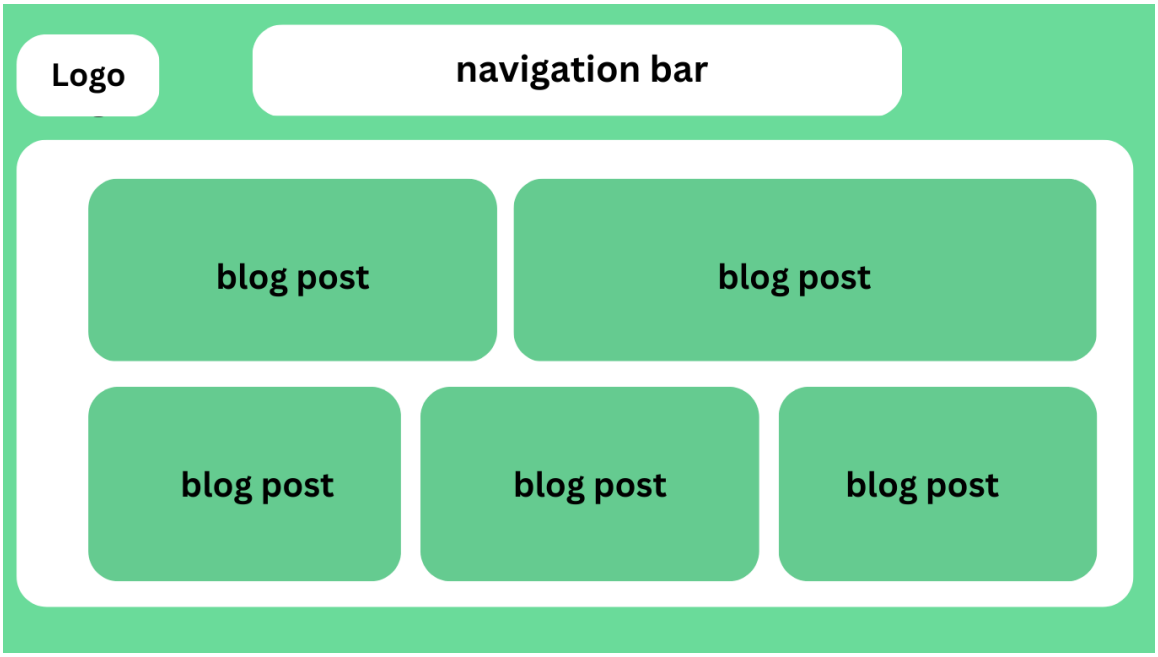

Fig 4.7: Blog layout

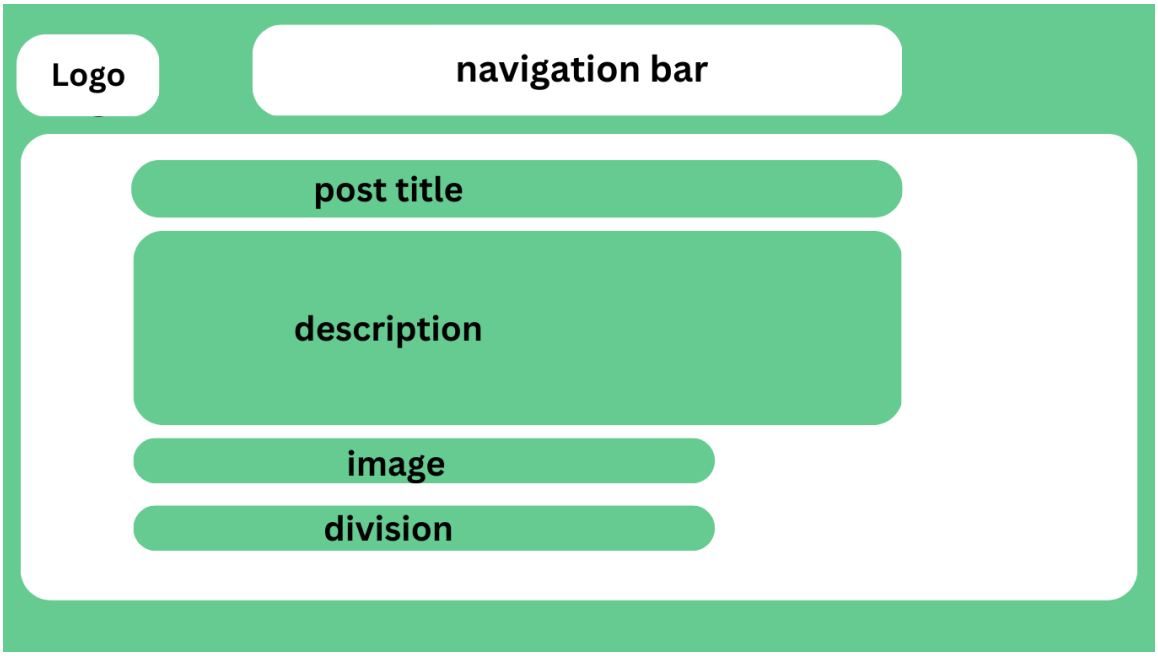

Fig 4.8: Post layout

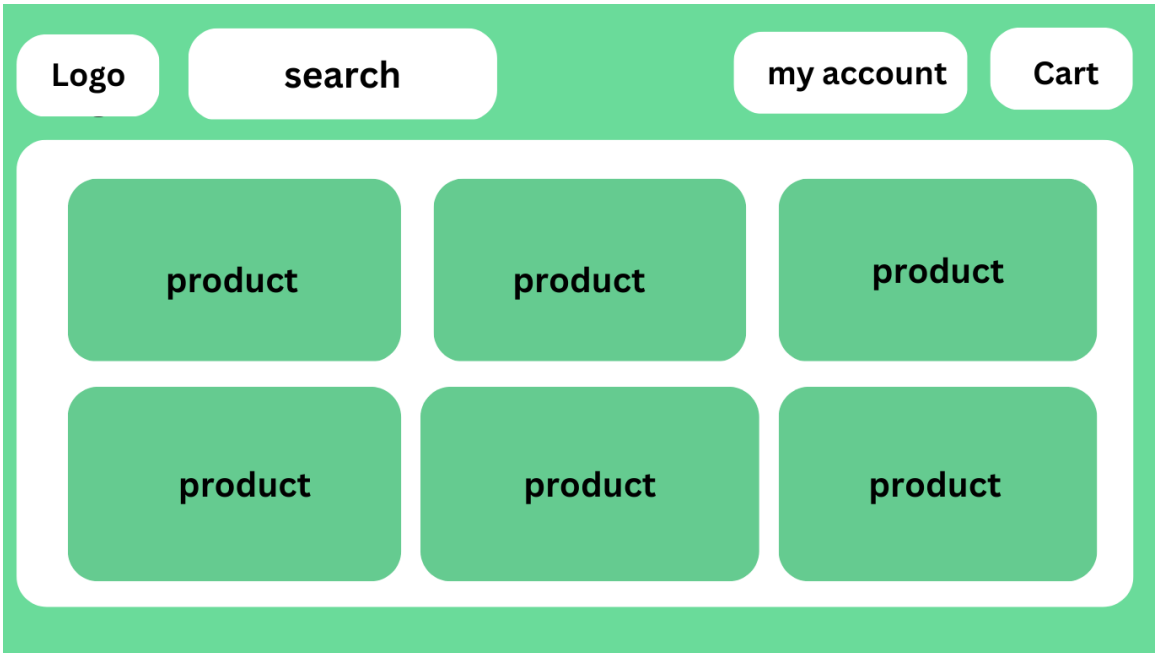

Fig 4.9: Shop page layout

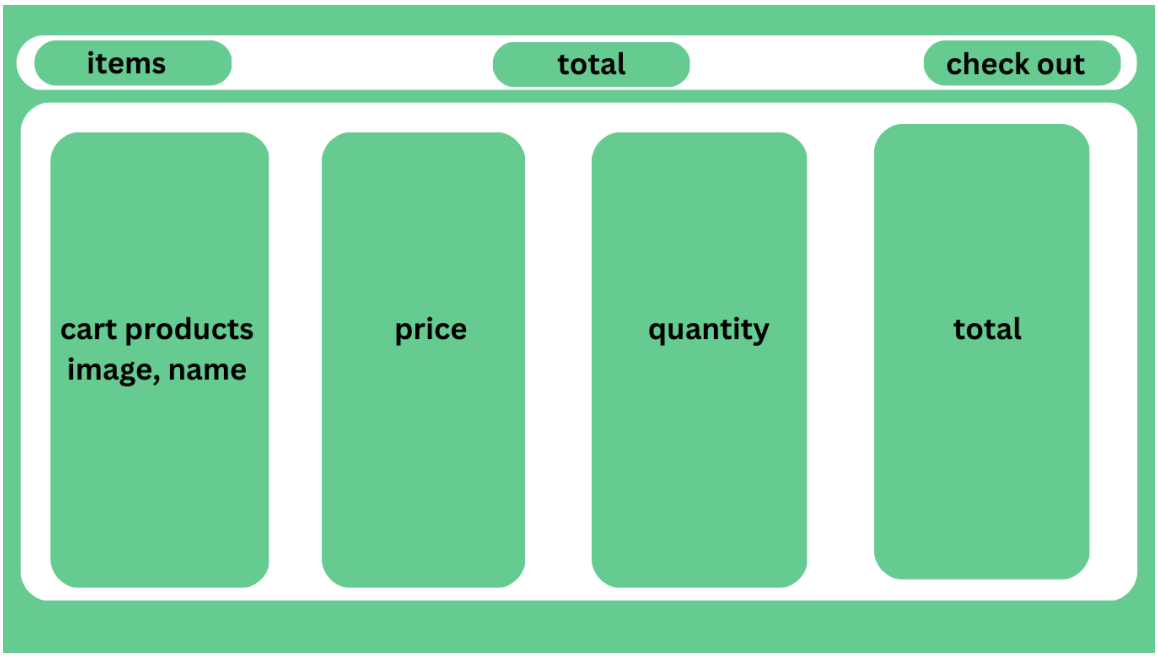

Fig 4.10: Cart page layout

CHAPTER 5

IMPLEMENTATION

5.1 Introduction

In this section, we will talk about our project's characteristics and the aesthetics of the designs.

5.2 Front-End Design

Every website should have a good user interface. The success of the website depends on its usability and design for users. The front-end design of a website is crucial. We create a really straightforward user interface. The creation of our simplest interface was challenging. We structured our website around this section.

5.2.1 Home Page

A user may do a search on our main page to locate anything they are looking for. On the Search page, we display all relevant Blog, User, and Product results.

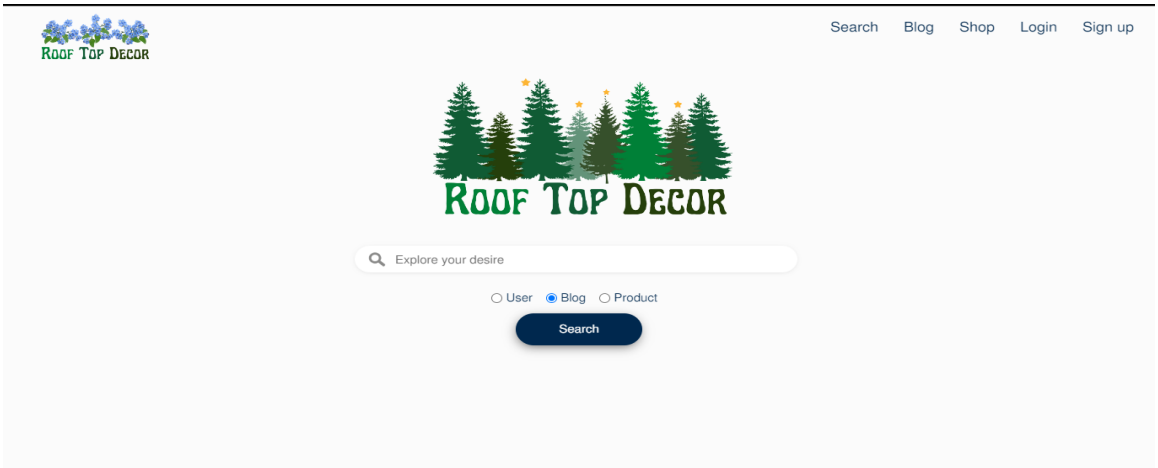

Fig 5.1: Home page

5.2.2 Authentication

A fundamental authentication system that identifies the user and grants access to particular pages is required for any website. We'll go through the login, registration, and password-reset functions in this section.

5.2.2.1 Sign Up

A user requires an account in order to create a powerful portfolio and access all pages. He or she can make a new account if they don't already have one. A user requires an original user name, a working email address, and an 8-character password in order to establish an account. The first three letters of the user name must be three.

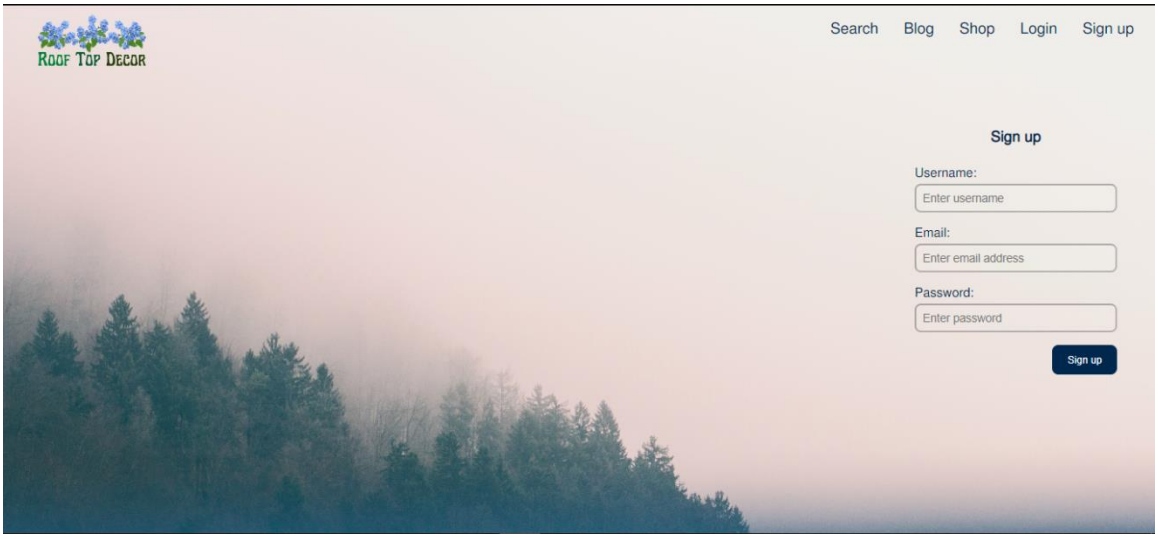

Fig 5.2: Sign Up

5.2.2.2 Login

A user can access the website by logging in if they already have an account. After filling out all the fields with legitimate credentials, a user may establish a blog, buy, and a roof top decor profile portfolio.

Fig 5.3: Login

5.2.2.3 Reset Password

If a user forgets their password, they may reset it using the lost password option. We will email that person a password reset code, which they may use to create a new password.

Fig 5.4: Reset Password

5.2.3Profile

A user may construct their profile with their info in the Profile area. You can also edit it as needed. In our profile area, which is a special feature of our project, users may highlight and share their ideas. Instead of publishing images everywhere, it will be simple to share his or her profile on other social media sites. It will maintain a tree lovers journal.

5.2.3.1 Portfolio

Every user is required to have a profile. A user's experience and recollections of their roof top decorating can be shared in the profile area. We provide links to social media platforms such as Facebook, Messenger, Instagram, and Email.

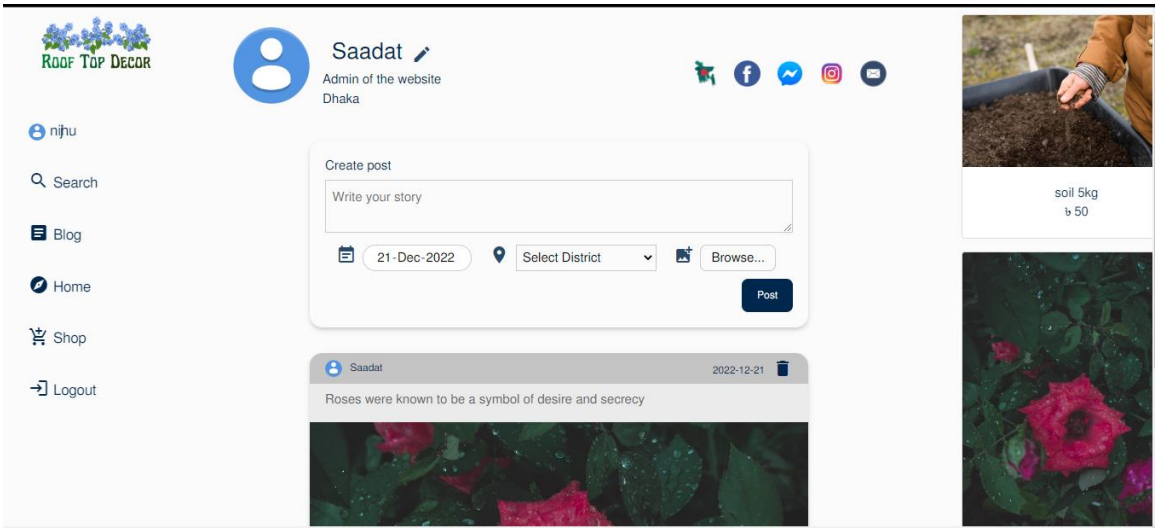

Fig 5.5: Portfolio

5.2.3.2 Edit Profile

A user may view additional options under Edit Profile, such as editing his or her name, images, social links, and so on. If a user has not completed his or her profile, he or she will be unable to purchase any products from the shop or publish any posts on the blog. One can erase his/her account if he/she desires.

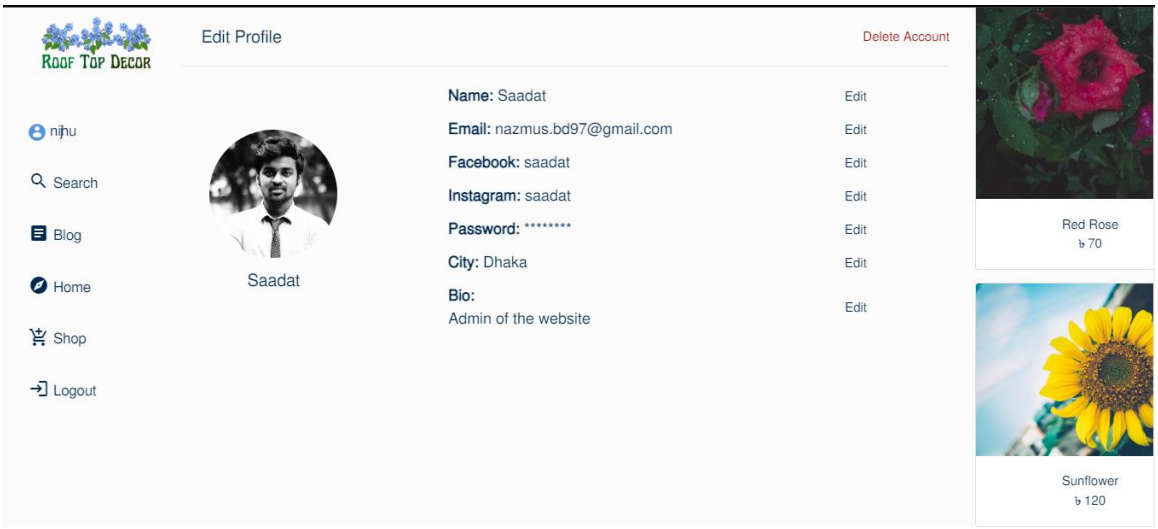

Fig 5.6: Edit profile

5.2.4 Blog

This is our website's blog section. Users may share their experiences with roof top decor and express their thoughts in detail. A user may view author information and the number of posts made by a certain author.

5.2.4.1 Home Pages

One navbar is included on the home page of RoofTopDecor for page navigation. Users may read topics here that are directly connected to roof top decor.

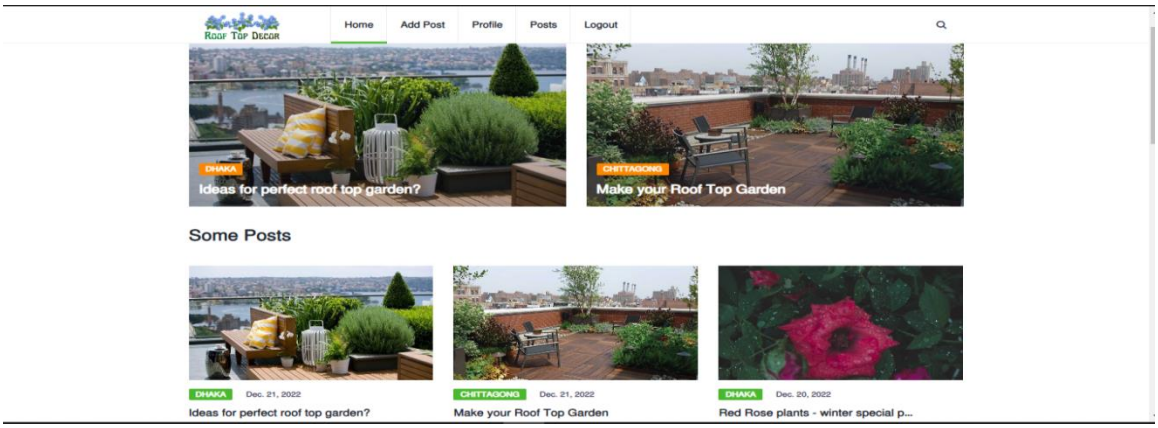

Fig 5.7: Blog Home Pages

5.2.4.2 Add Post

A user who has been authorized can upload articles based on knowledge and experiences from roof top decor. He or she may include roof top images from several locations. We implemented a specialized editor (CKeditor) in the description section that allows users to quickly alter the text color and font size.

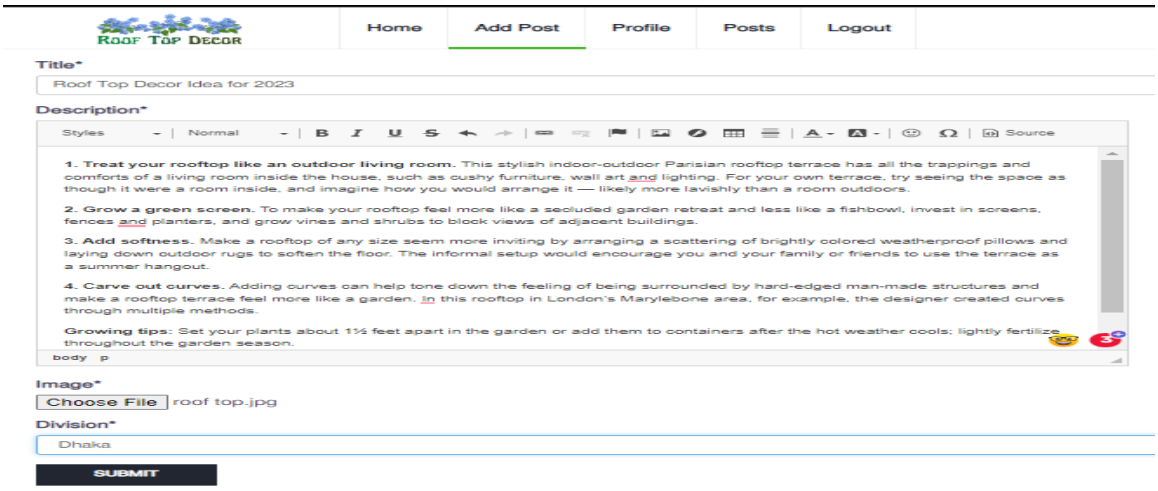

Fig 5.8: Add post

5.2.4.3 Details post:

A user may read the post's information here and share it on his or her social networking accounts, including Facebook, Twitter, and LinkedIn. Through Facebook, a user may leave like particular posts. This page's sidebar will display highlighted posts and related posts that have been divided up.

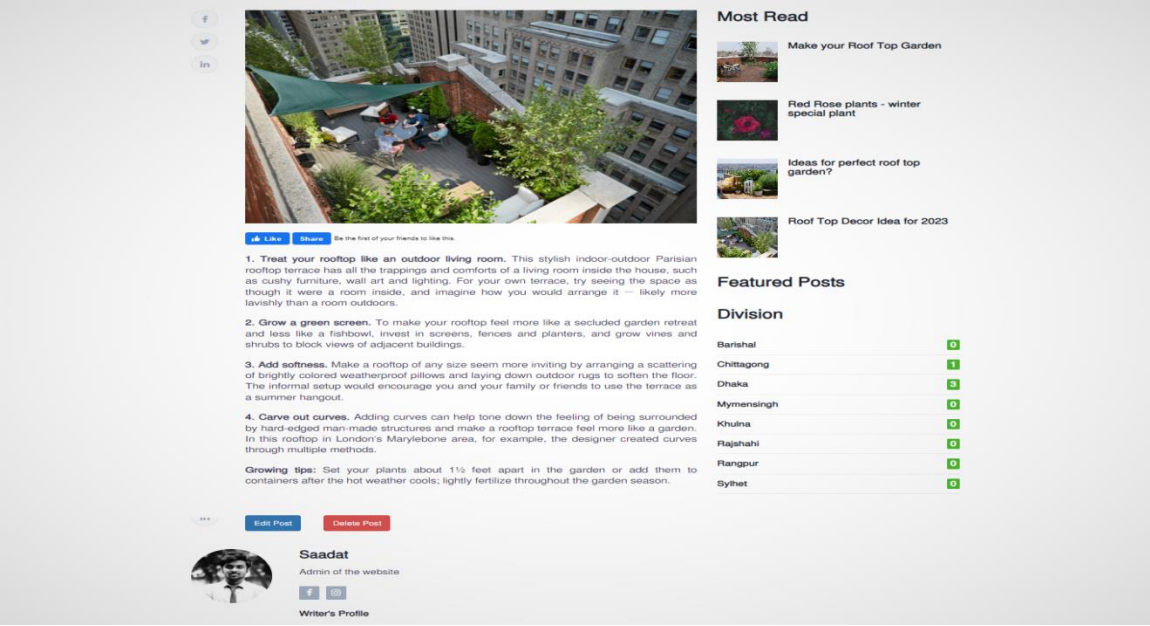

Fig 5.9: post details

5.2.5 Online Shop

All the equipment and gadgets needed to explore the true beauty of roof top decor are available in our online store. We gathered all relevant items and posted them on the website. A user can quickly and easily locate key products.

5.2.5.1 Shop Home Page:

This is the shop homepage for RoofTopDecor.com. A user may view a variety of items relating to plants/gardening. Additionally, these pages include product details including price, category, availability, and description. Any authorized user may purchase goods using payment or cash on delivery.

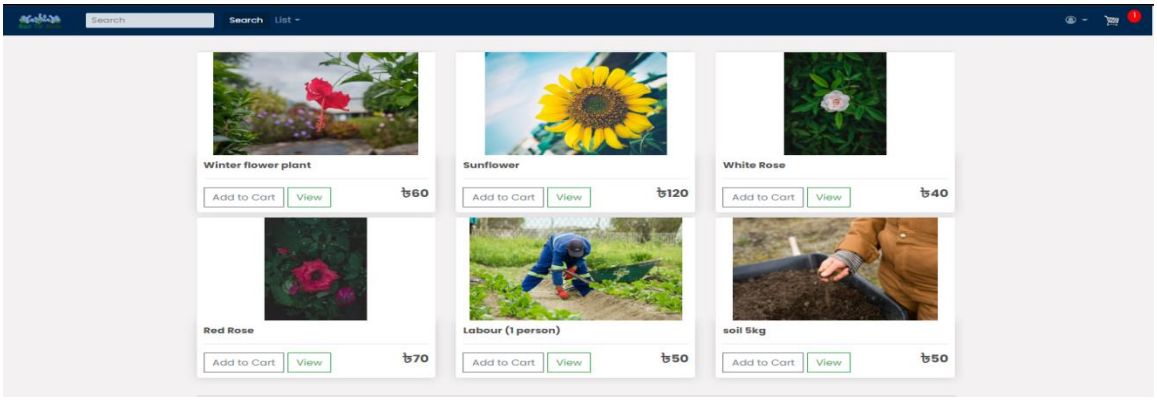

Fig 5.10: Shop Homepage

5.2.5.2 Add to Cart

Every website that sells goods online has to include this area. One may view product details, including the product price, quantity, and total amount, on the RoofTopDecor store. Changes to product quantity and cart removal are also possible.

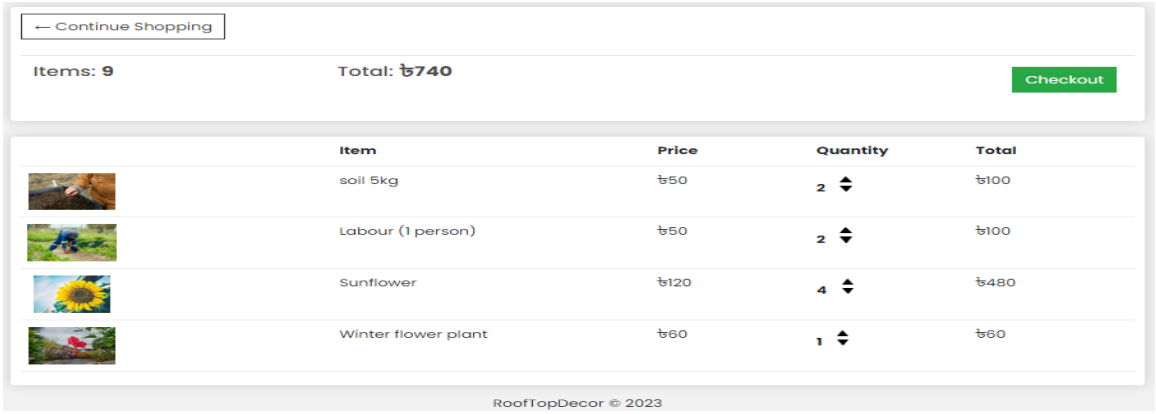

Fig 5.11: Cart

5.2.5.3 Checkout:

This page will provide the order summary, including the total number of products and the total amount. Users' purchasing information and shopping methods consistently require the necessary information for checkout products. Any goods may be checked out by a user using online payment or cash on delivery. Rocket and bKash are accepted forms of online payment.

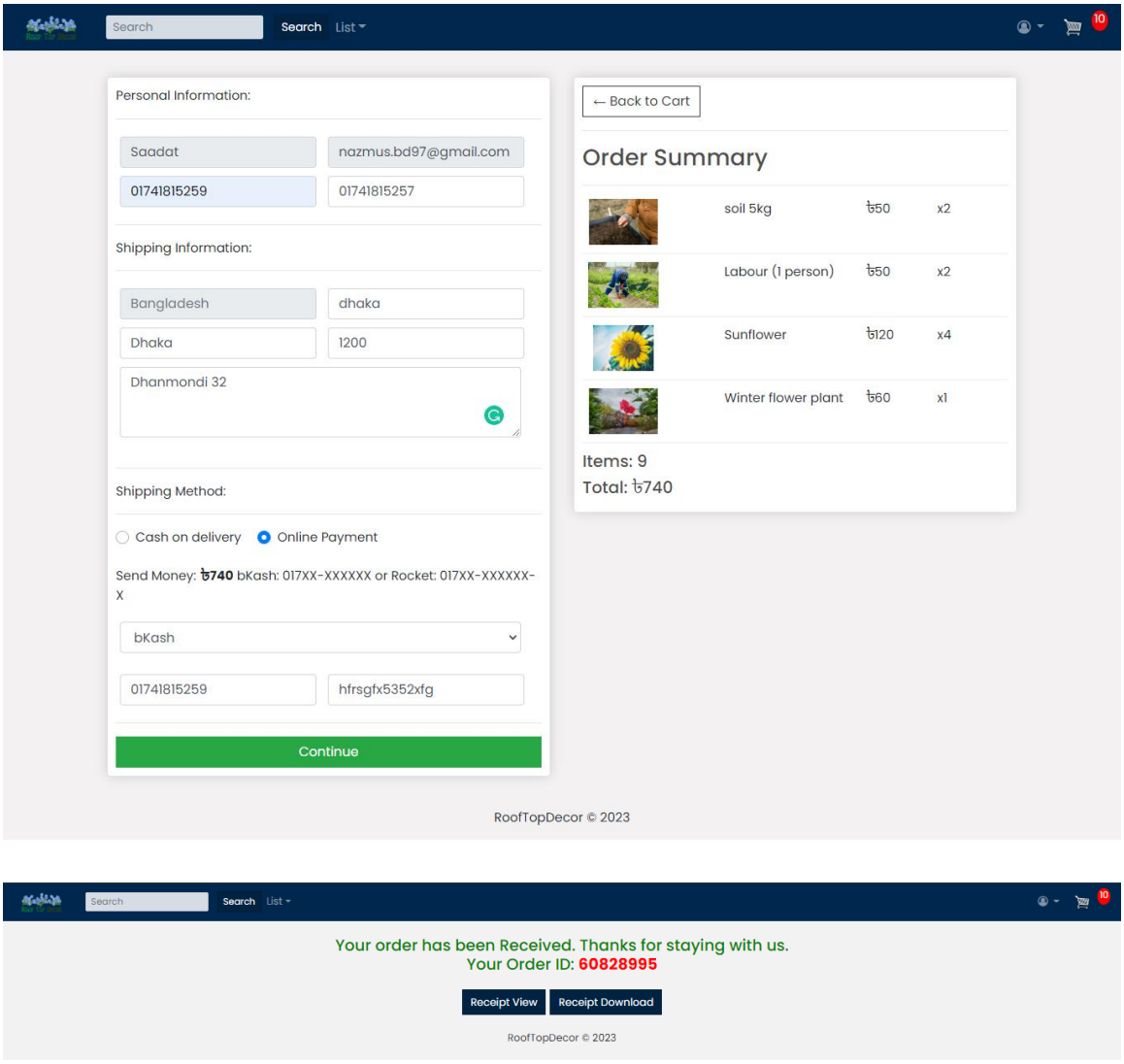

Fig 5.12: Check-Out

5.2.5.4 My Order Page

This area will provide information about previous orders, including total order cost, the number of items you've ordered at a time, product details, and order status. This page may be seen by an authenticated user who has already checked out any goods.

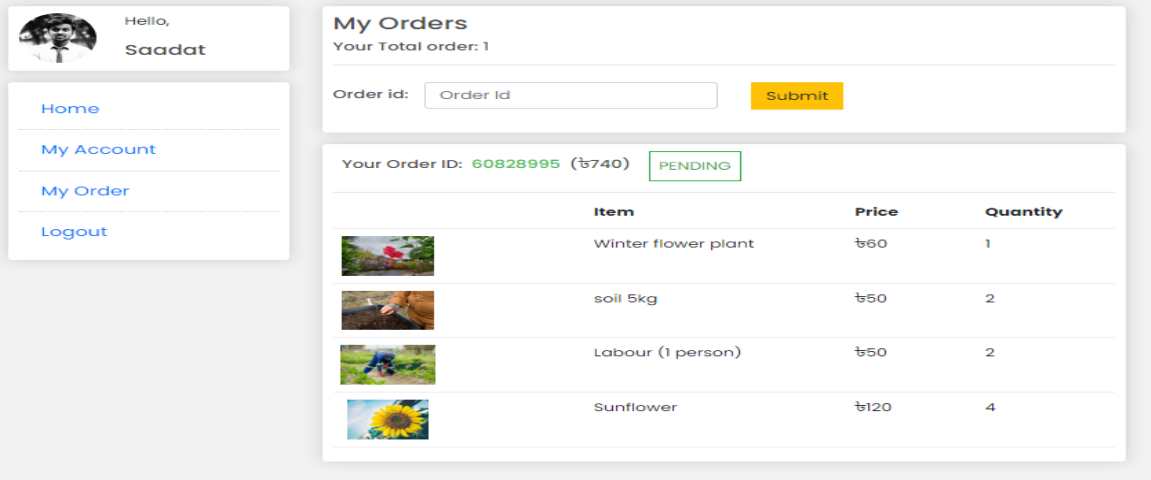

Fig 5.13: Order Page

5.2.5.5Check product

A staff or admin user may quickly review all goods. Products may be added, searched for, their availability statuses, prices, and can be deleted. All product information may be readily monitored by an admin or staff user

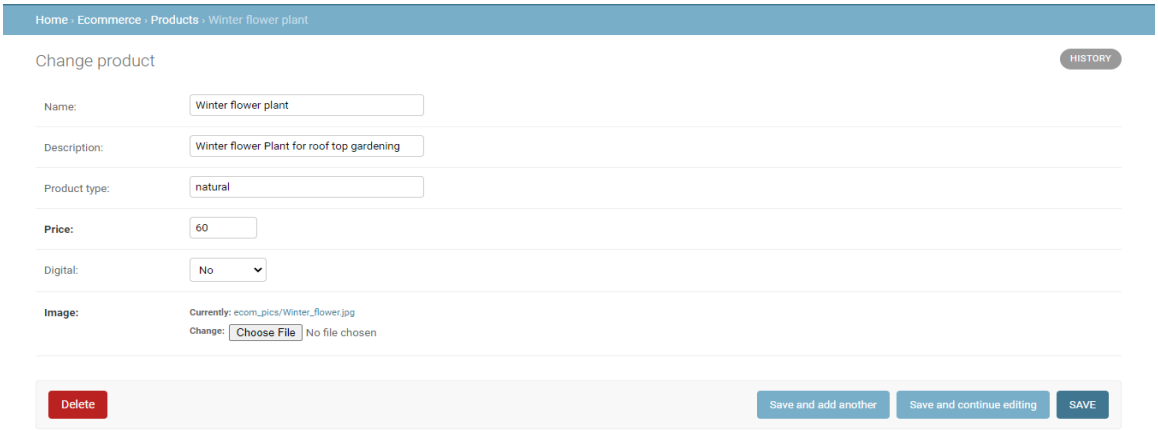

Fig 5.14: Check product

5.2.5.6 Check & Update Order

An admin or staff member may simply keep track of all Order details in this area. Display information on the home page such as the date, total cost, and person who placed the transaction. An administrator or staff member may simply view the whole order details by clicking the Details button on a single order item. They can also modify the order status, such as authorized, shipped, etc.

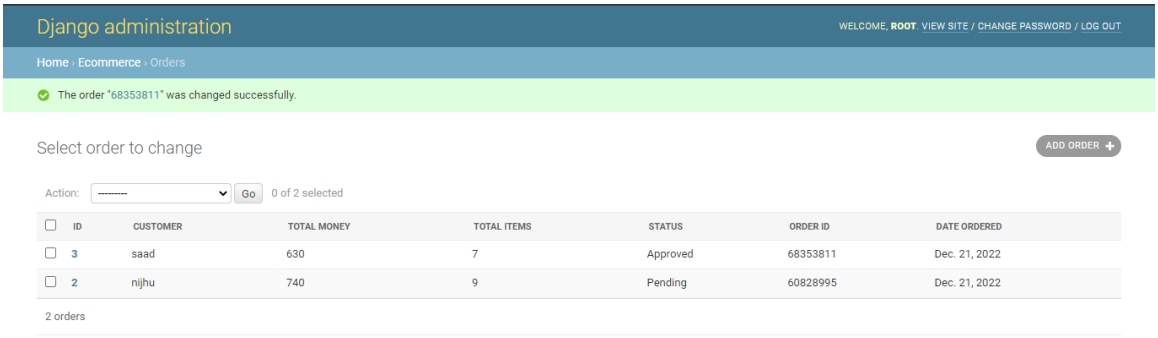

Fig 5.15: Check order

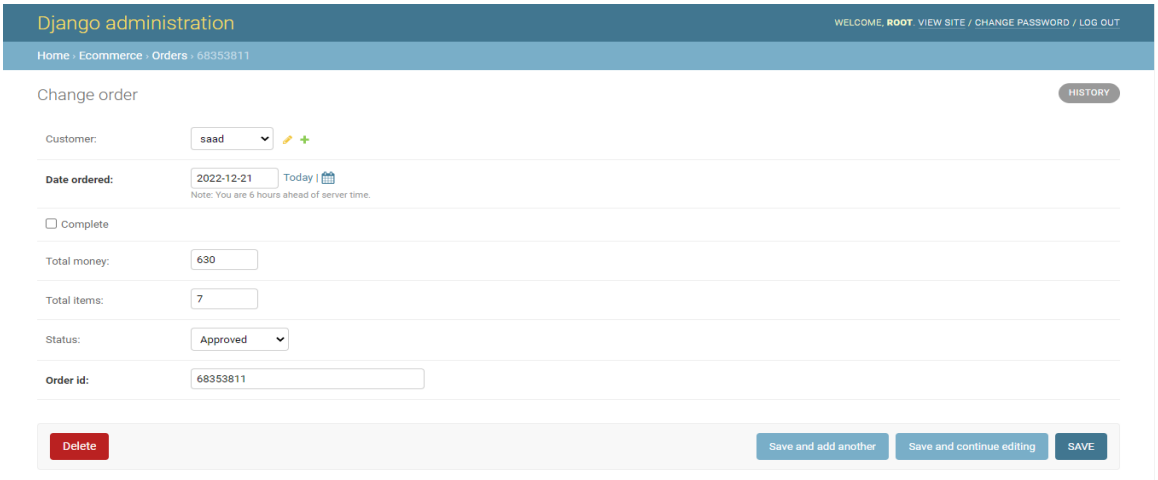

Fig 5.16: Update order

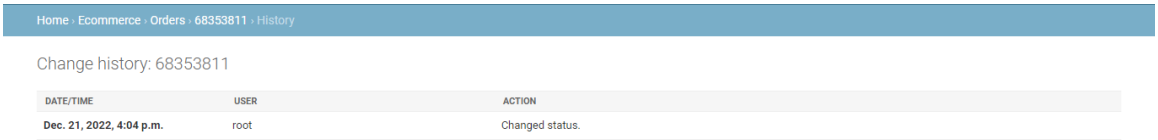

Fig 5.17: Order history check

5.2.5. Admin role

An admin or staff member has some access to make changes with users authentication and authorization like add, remove users and their data, profile update, etc. An admin can add, edit, and remove any blog post of any user. For ecommerce management a staff can update orders, payments, product and all access.

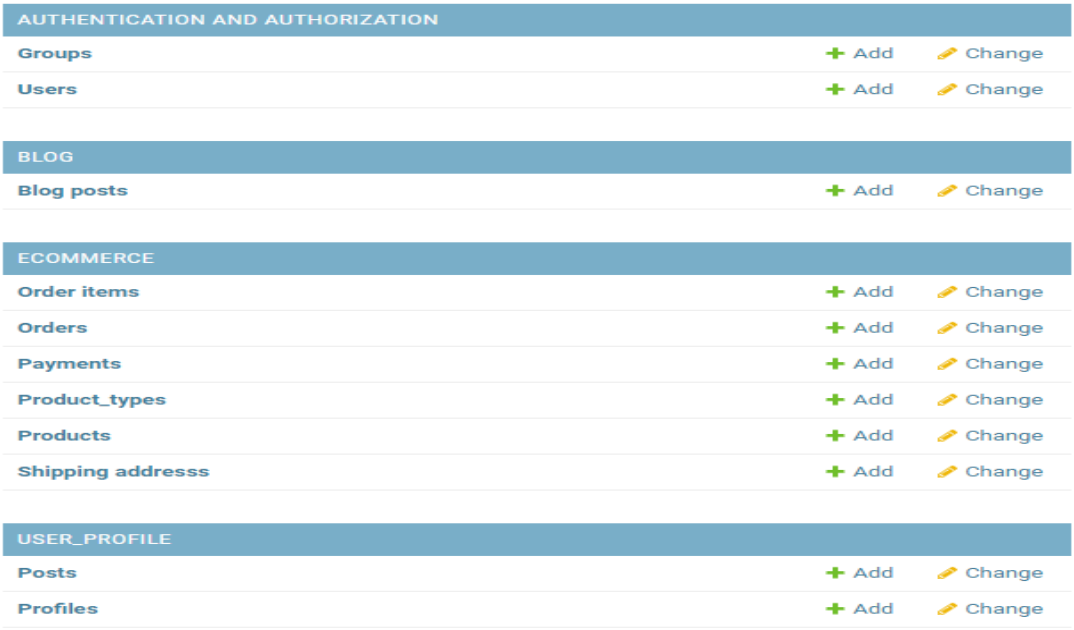

Fig 5.18: Admin role

CHAPTER 6

CONCLUSION

6.3. Future Work

Our project has a lot of potential future directions. Our project is still being developed. To improve the user experience for the users, we could offer more features. We'll add a dark style to the website, a message socket, and a payment gateway for accepting payments online. In the future, we can develop an android app, a pre-booking system for roof top decoration consultations might be included.

6.1. Summary

The rooftop decoration project is a platform designed to provide inspiration and ideas for decorating rooftop spaces with trees. Located in Bangladesh, the project is aimed at creating a community of tree lovers who can share their experiences and ideas with one another through the blog section of the site. In the city like Dhaka, where resource management and time can be challenging, the project aims to make rooftop decoration easier and more accessible by providing a range of ideas and resources. In addition to sharing ideas and experiences, the project may also offer products and accessories for decorating rooftop spaces, as well as services like installation and maintenance. The project may also provide tips and guidance on how to care for rooftop trees and keep the space looking beautiful and well-maintained. Overall, the rooftop decoration project aims to be a comprehensive resource for those looking to create and enjoy beautiful and functional rooftop spaces in Bangladesh.

The rooftop decoration project offers a convenient and hassle-free solution for customers looking to decorate their rooftop spaces. The main feature of the project is that customers can simply order the items they need and have them delivered and installed, without having to handle any of the tasks manually. The project provides a range of resources, including plants, soil, labor, and lighting, to ensure that customers have everything they

need to create a beautiful and functional rooftop space. As a result, the project makes it easy for customers to decorate their rooftop spaces without having to worry about sourcing and installing the various items themselves.

So, it will be a great community and a complete roof top decoration solution system with trees online

6.2. Conclusion

The tree lovers will benefit from this project's management of their profiles. Having ideas for roof top decoration in one location will make it simpler for everyone to handle. By reading blog posts, a person may learn more about roof top decor and come up with fresh ideas and expenses. Online stores offer all the supplies required to set up a complete roof garden. Since we have a website, it will be simpler for a user to use the platform in any location and circumstance. The community of tree lovers will benefit more from this project, we hope, and the management and planning will be improved to make every roof eco-friendly and attractive.

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