

IMPLEMENTING QR CODES AND SMARTPHONES TO ASSIST STUDENTS IN EXPLORING TREE SPECIES

Submitted in partial fulfillment of the requirements for the award of
Master of Engineering degree in Computer Science and Engineering

By

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
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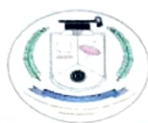
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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **INITHA S (42310004)** who carried out the Project entitled **"IMPLEMENTING QR CODES AND SMARTPHONES TO ASSIST STUDENTS IN EXPLORING TREE SPECIES "**entitled under my supervision from January 2024 to April 2024.


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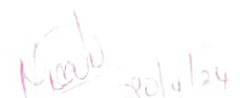

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DECLARATION

I, **INITHA.S(42315004)**, hereby declare that the Project Report entitled "**IMPLEMENTING QR CODES AND SMARTPHONES TO ASSIST STUDENTS IN EXPLORING TREE SPECIES**" done by me under the guidance of **Dr.K.ASHOK KUMAR M.E.,Ph.D.** at Sathyabama Institute of Science and Technology is submitted in partial fulfillment of the requirements for the award of Bachelor of Engineering Degree in **Computer Science and Engineering**.

DATE: 20/4/24



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ABSTRACT

Smart phones are being used increasingly commonly on field trips to help pupils learn about the natural world. The preparation and analysis of a field trip for students participating in inquiry-based learning are presented in this study. One design problem is figuring out how to employ smartphones such that they help pupils interact with the actual world instead of getting in the way. In order to address this problem, we compare two distinct designs in which students utilize their phones to identify various tree species by either reading a textual description or using an identification tool. The results show that students looked up different tree species using text descriptions and utilized the identification method, QR codes, to identify various tree species. By connecting contextual data from smartphones to the real world, QR codes serve as a teaching tool that may be utilized to assist students in their interactions with it

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CHAPTER 1

INTRODUCTION

The usage of mobile devices can enhance extracurricular learning opportunities. Smartphones, for example, include capabilities that make it simple for students to access, alter, and share information. Additionally, they make it easier for students to access the Internet, applications, and their own resources. Students may now take, edit, and share images and videos thanks to the use of cell phones. When digital information is linked to a real place, using smartphones in conjunction with positioning technology can assist students in choosing appropriate targets for their own learning objectives and in learning about their surroundings. When combined, mobile devices can help pupils focus during outdoor learning activities. Small-scale uses of mobile technology have been made to help kids learn about the natural environment while on field excursions. Support for seeing birds and butterflies [1, 2], going to a botanical garden [3], or studying the ecology of woodlands [4] are a few instances from past studies. Smartphones can also be used by students as instruments for observing or investigating the places they are visiting [5]. Research in this area has discovered, however, that bringing cellphones along on field excursions might cause students to become more preoccupied with the device than with the actual surroundings [3, 6–8].

The study of human-computer interaction (HCI) focuses on the interfaces that people, or users, use to interact with computers. Human-computer interaction (HCI) researchers look at how people use computers and create tools that enable people to utilise them in novel ways.

This research focuses on the specific challenge of having students use cellphones to identify different types of trees. In order to tackle this challenge, we compare how students use cell phones in two different designs—one with QR codes and the other not.

CHAPTER 2

LITERATURE SURVEY

Recently, there has been an increase in interest in learning more about how visitors' interactions with their surroundings might be enhanced by using personal digital devices like smartphones [5, 6].

In order to prioritise their classification of thirty distinct botanical gardens from across the globe, Karasah et al. [7] looked into the purposes of botanical gardens. They investigated the botanic garden in Turkey known as Nezahat Gökyiğit's leisure uses. The writers cite a number of polls about the preferences of visitors to botanical gardens in addition to their own. The seasons that tourists prefer, the frequency of trips, and the reasons why people love being in a botanical garden were among the things that piqued the interest of the writers.

Heywood et al. [8] suggested that Mediterranean botanical gardens have a part in the local plant life. Their research contributes to conservation and recovery efforts, the reintroduction of endangered species, and the introduction of new material. Specifically, they brought up the unequal distribution of botanical gardens in the nations of the eastern and southern Mediterranean. They observed that these locations lay less importance on the botanical gardens. They also looked at several botanical gardens that are too tiny or ancient to hold conservation collections of living plants. Ultimately, they put out a few ideas for fixing these issues.

Botanical gardens frequently prioritise ecological goals, such as the need to conserve biodiversity, while placing less emphasis on educational and social objectives, according to Blaszak et al. [9]. When it comes to education, the combination of emotions and intellect has a positive impact on learning. A threefold criterion has been used to introduce the idea of a "useful botanical garden": rationality (the visitors' contemplation of values like care and authority and how these relate to the elements present in the botanical garden and the visitors' emotions), sensibility (the features that lead to welcoming comfort, safety, and homeostasis), and functionality (the features that promote interactions and cognitive processes). The design of botanical garden areas,

formative procedures based on garden areas, visitor expectations, and interactive activities may all benefit from their concepts.

Plant disease detection Android smartphone applications are widely available [10, 11, 12]. Plant disease is a significant issue for plant development. Plant diseases should be identified with extreme caution by farmers. However, farmers might not be able to detect plant illnesses early on because of a lack of awareness about how to identify them. Applications can assist the farmer in determining which plant diseases exist.

An Android phone app was used by Vesali et al. [13] to calculate the chlorophyll content of maize leaves. To lessen the impacts of actual circumstances, contact imaging, a novel imaging technique, was employed. To estimate SPAD values, both neural network and linear models were created.

In a different work, they presented a novel approach to spectral absorption photometry that uses cellphones to determine the chlorophyll content of maize leaves [14]. The first technique adjusts for variations in lighting by using a smartphone camera to capture light streaming through a leaf. Due to their improved and quicker processors and sensors, which convert them into useful metres suitable for field usage, smartphones would contribute to making this feasible. Given the widespread availability of smartphones and free apps in the modern world, this gadget may have uses other than communication. For example, farmers may now build bespoke reference values for acceptable chlorophyll content by implementing straightforward field-based testing, wherein they only need to apply known quantities of nitrogen fertiliser and monitor plant development.

The application to obtain plant information was proposed by Patil et al. [15]. Additionally, they included QR codes so that users of smartphones or tablets could access information on plants. Their research's objective was to develop a system that makes use of QR codes to enhance students' understanding of the Dada Patil College campus.

According to Neto et al. [16], a more effective strategy for teaching about biodiversity is to use technology and creative ways. They also unveiled a handy AI-powered web tool that served as a guide for those funding educational biodiversity programmes. They used transfer learning to apply deep CNN techniques for the classification challenge.

An integrated system for managing and touring urban parks was proposed by Pistorius et al. [17]. It is based on online apps for park administrators and a mobile application for park visitors. They demonstrated how integrating modern technology into urban parks may improve their aesthetics and administration, resulting in more efficient use of urban green areas. In actuality, it results in an increase in visitors to urban parks, an improved touring experience, and some environmental advantages.

In conclusion, the majority of relevant studies on examining various contemporary methods utilising IoT to learn about the world of plants focus on classifying plants [7, 8, 13, 14], identifying plant diseases [10, 11, 12], and gathering plant data for tourism reception [9, 15, 16, 17]. There is a study void in this field in Iran, despite certain studies in the literature that developed web-based or Android-based applications for accessing plant information in some of the world's most renowned botanical gardens. Furthermore, we have suggested using a machine learning method to identify novel plants.

2.1. Existing System

Mobile devices can enhance learning experiences even outside of the classroom. For example, smartphones offer features that facilitate students' access to, usage of, and sharing of information. They also facilitate students' access to the Internet, apps, and their own resources. With the use of cell phones, students may take pictures and videos, edit them, and share them. Using smartphones to connect digital data to physical locations might help kids learn about their surroundings and identify goals that are suited for their personal learning. During outdoor sessions, mobile technology as a whole can be used to focus pupils' attention.

Disadvantage

- Inadequate knowledge outside of the curriculum
- Improper use of technology.

2.2 Proposed System

The suggested solution offers a method for approaching this issue by contrasting how students use their cellphones in two designs: one with QR codes and the other without. The comparison of student smartphone interactions may be useful for creating learning tasks and activities that align with learning objectives, even though it does not centre on learning performance or quality. This research focuses on the specific challenge of having students use cell phones to identify different types of trees. The specific design issue addressed in this study is how to use cell phones to help students connect with their actual surroundings instead of causing distractions.

Advantage

- To address this problem, we examine the ways in which students use their cellphones in two distinct designs—one with QR codes and the other not.
- Even if learning performance and quality are not the comparison's main focus
- It is feasible to take into account how students use their smartphones when creating assignments and activities that meet learning objectives.

2.3 System Specification

Hardware Requirements

Hard disk	:	1 TB
RAM	:	4 GB
Processor	:	Core i3
Monitor	:	15"Color Monitor

Software Requirements

Front-End	:	HTML, CSS, and React JS
Back end	:	SQLite
Operating System	:	Windows 10
IDE	:	Visual studio code

CHAPTER 3

REQUIREMENT ANALYSIS

3.1 SOFTWARE SPECIFICATION

Frontend

- HTML provides the basic structure of sites, which is enhanced and modified by other technologies like CSS and JavaScript.
- CSS is used to control presentation, formatting, and layout.
- JavaScript is used to control the behavior of different elements.

Now, let's go over each one individually to help you understand the roles each plays on a website and then we'll cover how they fit together. Let's start with good ol' HTML.

HTML

HTML is at the core of every web page, regardless the complexity of a site or number of technologies involved. It's an essential skill for any web professional. It's the starting point for anyone learning how to create content for the web. And, luckily for us, it's surprisingly easy to learn.

Markup languages work in the same way as you just did when you labeled those content types, except they use code to do it -- specifically, they use HTML tags, also known as "elements." These tags have pretty intuitive names: Header tags, paragraph tags, image tags, and so on.

Every web page is made up of a bunch of these HTML tags denoting each type of content on the page. Each type of content on the page is "wrapped" in, i.e. surrounded by, HTML tags.

For example, the words you're reading right now are part of a paragraph. If I were coding this web page from scratch (instead of using the WYSIWG editor in HubSpot's COS), I would have started this paragraph with an opening paragraph tag: `<p>`. The

"tag" part is denoted by open brackets, and the letter "p" tells the computer that we're opening a paragraph instead of some other type of content.

Once a tag has been opened, all of the content that follows is assumed to be part of that tag until you "close" the tag. When the paragraph ends, I'd put a closing paragraph tag: `</p>`. Notice that closing tags look exactly the same as opening tags, except there is a forward slash after the left angle bracket. Here's an example:

```
<p>This is a paragraph.</p>
```

Using HTML, you can add headings, format paragraphs, control line breaks, make lists, emphasize text, create special characters, insert images, create links, build tables, control some styling, and much more.

To learn more about coding in HTML, I recommend checking out our guide to basic HTML, and using the free classes and resources on codecademy -- but for now, let's move on to CSS.

CSS

CSS stands for Cascading Style Sheets. This programming language dictates how the HTML elements of a website should actually appear on the frontend of the page.

Whereas HTML was the basic structure of your website, CSS is what gives your entire website its style. Those slick colors, interesting fonts, and background images? All thanks to CSS. This language affects the entire mood and tone of a web page, making it an incredibly powerful tool -- and an important skill for web developers to learn. It's also what allows websites to adapt to different screen sizes and device types.

To show you what CSS does to a website, look at the following two screenshots. The first screenshot is my colleague's blog post, but shown in Basic HTML, and the second screenshot is that same blog post with HTML and CSS.

React JS

React.js, more commonly known as React, is a free, open-source JavaScript library. It works best to build user interfaces by combining sections of code (components) into full websites. Originally built by Facebook, Meta and the open-source community now maintain it. One of the good things about React is that you can use it as much or as little as you want! For example, you can build your entire site in React or just use one single React component on one page.

React.js is built using JSX – A combination of JavaScript and XML. Elements are created using JSX, then use JavaScript to render them on your site. While React has a steep learning curve for a junior developer, it's quickly shaping into one of the most popular and in-demand JavaScript libraries.

React is considered a JavaScript library rather than a framework, whereas the other options we'll consider today are considered frameworks. It helps to think of a library as a tool that developers could use in any project and a framework as a whole design.

There has been a massive rise in the popularity of React.js, as found in the studies by State Of JS. This is partially due to its flexibility and speed of development but also helped by the fact that it is supported by Meta, making developers and companies feel safe in their decision to use React. Therefore, the demand for React developers is very high. As a result, there is a wide range of jobs for developers who know how to use React.

3.2 Back end

SQLite

SQL is a language to operate databases; it includes database creation, deletion, fetching rows, modifying rows, etc. SQL is an ANSI (American National Standards Institute) standard language, but there are many different versions of the SQL language.

What is SQL?

SQL is Structured Query Language, which is a computer language for storing, manipulating and retrieving data stored in a relational database.

SQL is the standard language for Relational Database System. All the Relational Database Management Systems (RDMS) like MySQL, MS Access, Oracle, Sybase, Informix, Postgres and SQL Server use SQL as their standard database language.

Also, they are using different dialects, such as –

- MS SQL Server using T-SQL,
- Oracle using PL/SQL,
- MS Access version of SQL is called JET SQL (native format) etc.

Why SQL?

SQL is widely popular because it offers the following advantages –

- Allows users to access data in the relational database management systems.
- Allows users to describe the data.
- Allows users to define the data in a database and manipulate that data.
- Allows embedding within other languages using SQL modules, libraries & pre-compilers.
- Allows users to create and drop databases and tables.
- Allows users to create view, stored procedure, functions in a database.

CHAPTER 4

SOFTWARE DEVELOPMENT

4.1 METHODOLOGY

A popular error correcting method that gives the data being encoded more redundancy is the Reed-Solomon algorithm. Because of this redundancy, the original data may still be reconstructed by the QR code scanner even in cases when some code segments are distorted or absent. The three sizable squares that surround a basic QR code allow a QR reader to recognise it. It is aware that any object inside the square is a QR code after it has recognised these three forms. After that, the QR scanner deconstructs the entire code into a grid in order to analyse it.

4.2 MODULES DESCRIPTION

Android application

This module represents our platform's Android component. It is designed for cellphones running Android 5 or later and is developed in Java. Upon opening the app, the user is prompted to provide permission to utilise the camera. The app shuts down on its own if people reject; else, it launches. The user may explore the surroundings using the camera view that appears immediately in front of their eyes as the programme starts. To obtain any information on the plants in the Botanical Garden, the user can choose to scan the QR-Barcodes. In addition, the app may link users to the Botanical Garden, where they can have an engaging virtual tour. Through a smartphone application, the guests and the garden's surroundings may interact.

The following will be carried out:

- Installing the programme is recommended.
- After opening it, the user aims the phone's camera at each plant's QR-Barcode and chooses "Scan QR-Barcode" from the menu;
- The name of the scientific plant, the name of the Persian plant, its provenance, and a description are among the many details that the user may view after the photograph has been analysed.

Web application

Both the Botanical Garden website and the Admin portion of our application are created using this module. It's an online application. The administrator will have access to the application's admin section, where they may establish an account from which they will get authentication. The Botanical Garden's many plant species can be added, edited, and deleted by the administrator. Anyone who is not an admin can browse and search all plant information in the other portion of this online application. The application's main page features a straightforward UI designed to facilitate easy and enjoyable interaction.

Admin

The following is the admin portion of the web app task:

- One of the Botanical Garden's employees will be assigned the task of entering information about the plants in the garden.
- This employee will log in to the web application using an administrative account.
- The user can add a new plant to the application by providing the following details: the name of the scientific plant, the name of the Persian plant, its origin, and a description.
- Once all required fields have been filled out, the record can be saved. The user can also use the application to view, edit, and delete records.

CHAPTER 5

SYSTEM DESIGN AND ANALYSIS

5.1 Architecture Diagram

An architecture diagram is a graphic representation that shows how various software system components will be physically implemented. It displays the overall architecture of the software system along with the relationships, constraints, and divisions among its many components.

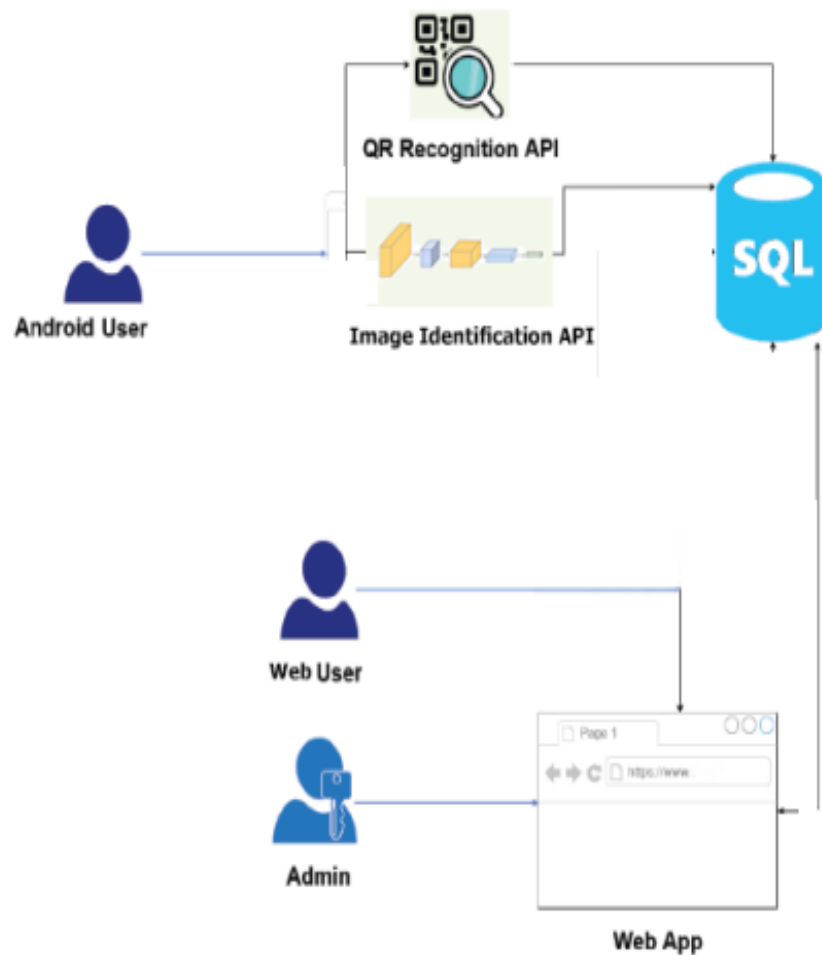


Fig:5.1: Architecture Diagram

5.2 Data Flow Diagram

A data-flow diagram (DFD) is a visual aid for illustrating how data moves through a system or process. Information on each entity's inputs and outputs as well as the process itself are also provided by the DFD. A data-flow diagram lacks decision rules, loops, and control flow. A flowchart can be used to illustrate certain operations based on the data.

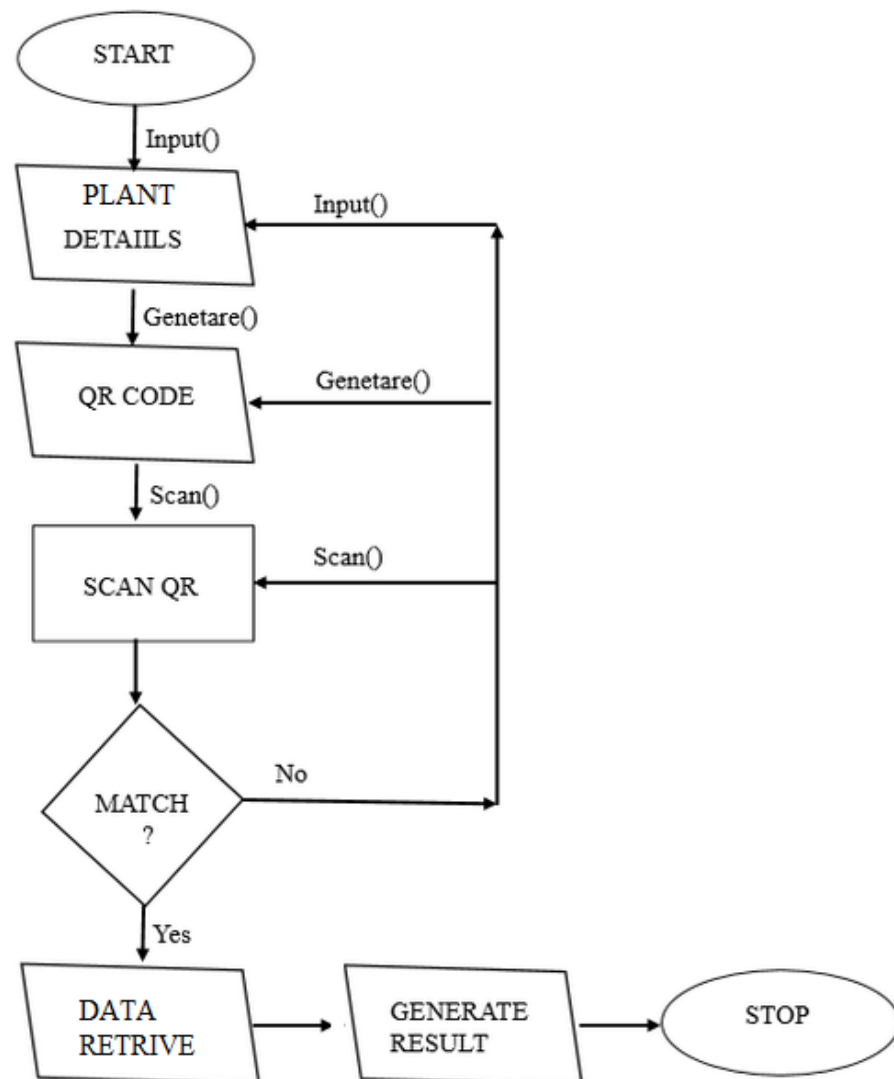


Fig:5.2: Data flow diagram

5.3 UML Diagrams

Use Case Diagram

A use case diagram is a visual representation of how a system's components interact with one another. In system analysis, a use case diagram is a technique for organising, defining, and identifying system needs. the actor, who are often those whose duties within the system are established.

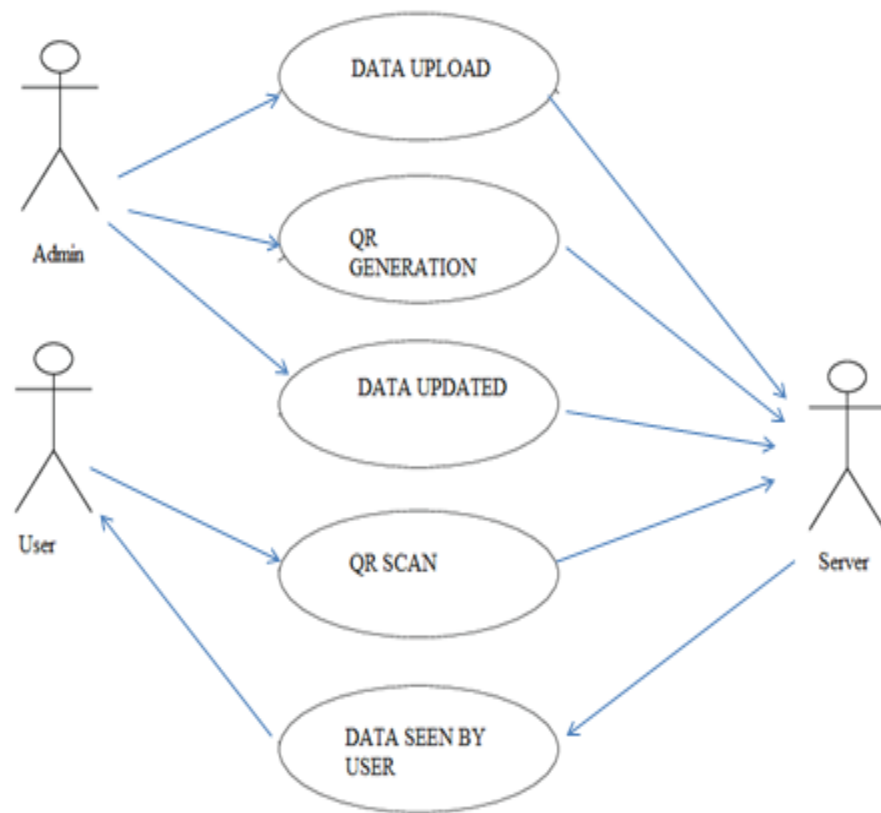


Fig:5.3: UML diagram

5.4Data Base Design

Admin Table

Field Name	Data Type	Constraints	Description
id	int(6)	Primary key	User ID
Title	Varchar(15)	Not Null	Title of the content
Content	Varchar(200)	Not Null	Description
Views	int(15)	Not Null	Count
Img	Boolean	Not Null	True(1) or False(0)
Reg_Date	Date	Not Null	Register Date

User Table

Field Name	Data Type	Constraints	Description
Img	Boolean	Not Null	True(1) or False(0)
Content	Varchar(200)	Not Null	Description

5.5 INPUT AND OUTPUT DESIGN

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processing can be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things:'

- What data should be given as input?
- How the data should be arranged or coded?
- The dialog to guide the operating personnel in providing input.
- Methods for preparing input validations and steps to follow when error occur.

OBJECTIVES

1. Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system.

2. It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.

3. When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the

user will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow

OUTPUT DESIGN

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

1. Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should Identify the specific output that is needed to meet the requirements.
2. Select methods for presenting information.
3. Create document, report, or other formats that contain information produced by the system.

The output form of an information system should accomplish one or more of the following objectives.

- ❖ Convey information about past activities, current status or projections of the
- ❖ Future.
- ❖ Signal important events, opportunities, problems, or warnings.Trigger an action.
Confirm an action.

CHAPTER 6

RESULT AND DISCUSSION

6.1 RESULT

Our final year project aimed to revolutionize the traditional method of getting information of tree is empowered by my project Implementing QR code and Smartphones to assist students in exploring Tree species.

In this method user can easily Scan the QR Code to fetch the information about tree. one with QR codes and the other without. The comparison of student smartphone interactions may be useful for creating learning tasks and activities that align with learning objectives, even though it does not centre on learning performance or quality. This research focuses on the specific challenge of having students use cell phones to identify different types of trees. The specific design issue addressed in this study is how to use cell phones to help students connect with their actual surroundings instead of causing distractions.

6.2 Screenshot

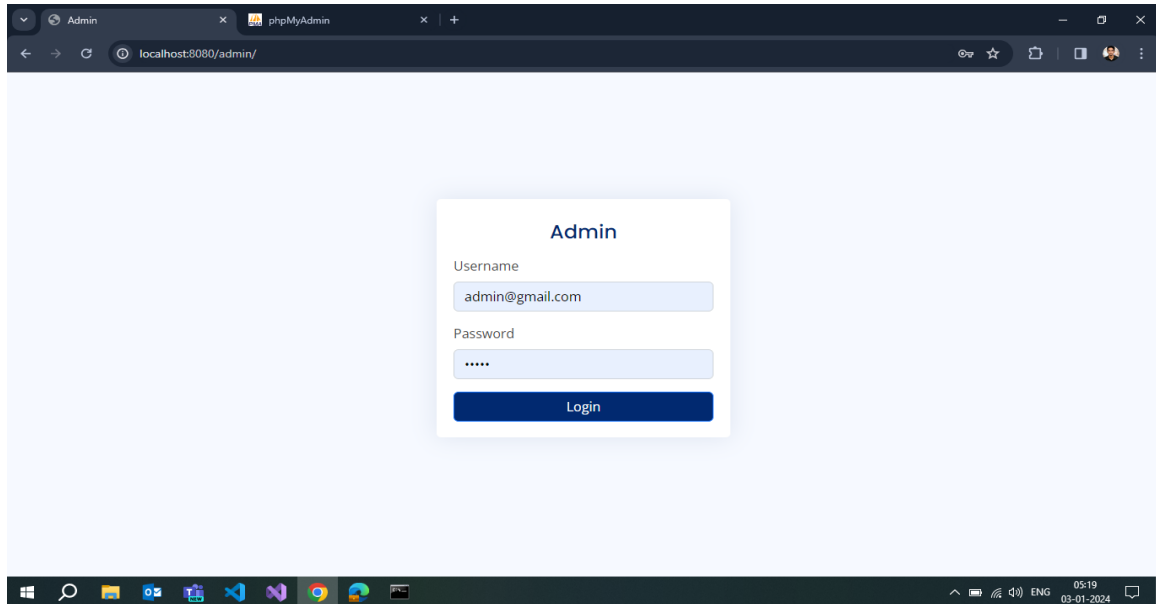


Fig 6.1: Admin Login

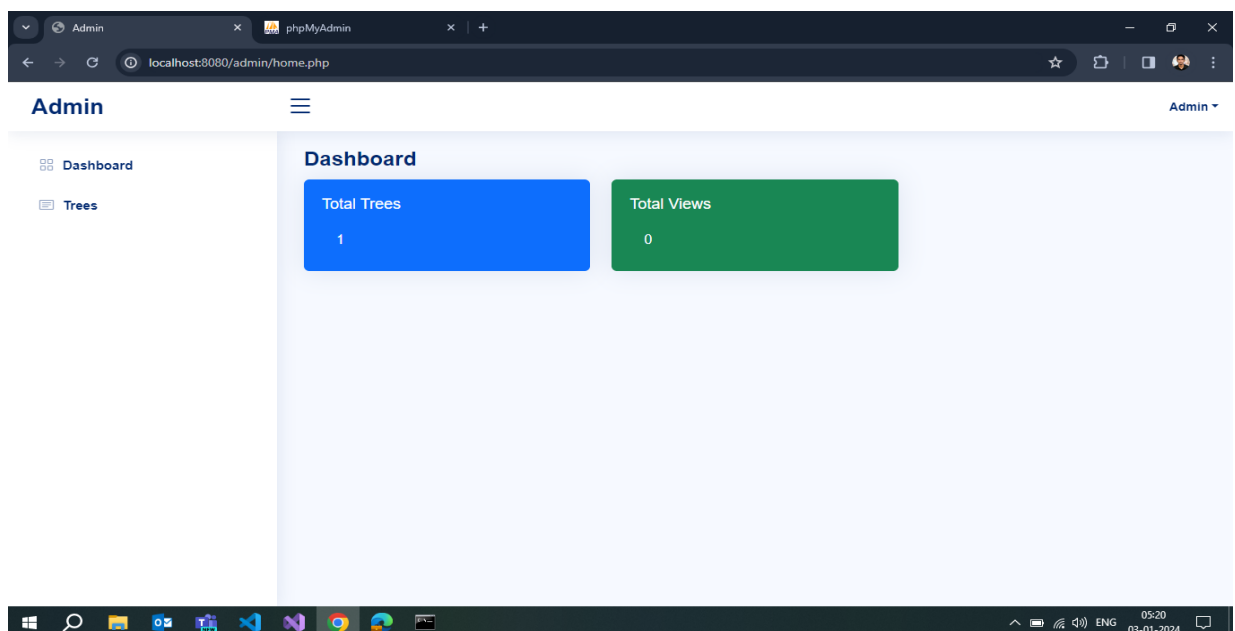


Fig 6. 2 Dashboard

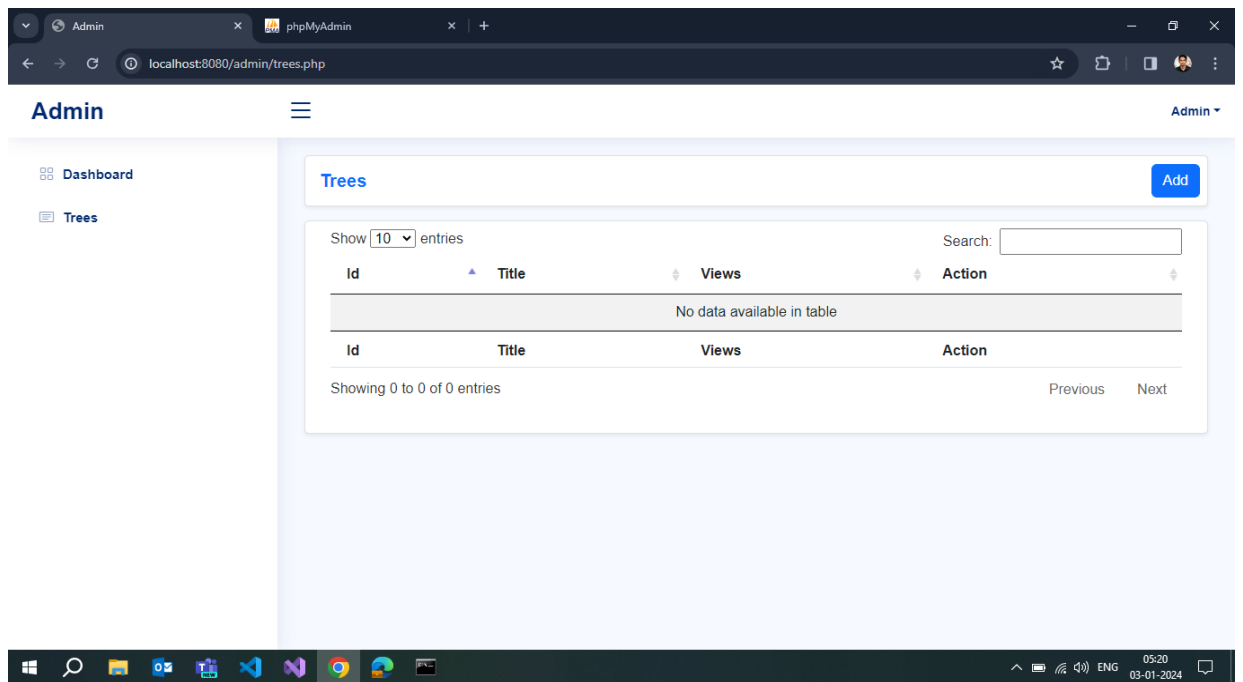


Fig 6.3: Tree Page

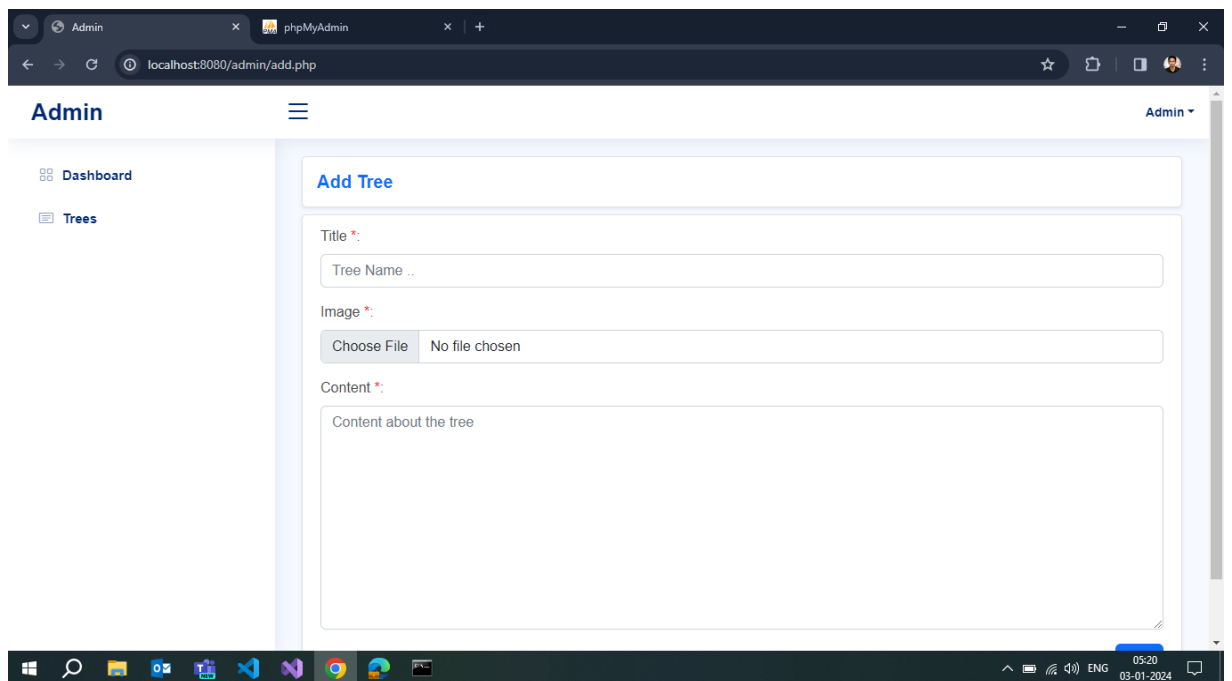


Fig 6.4: Add Tree Page

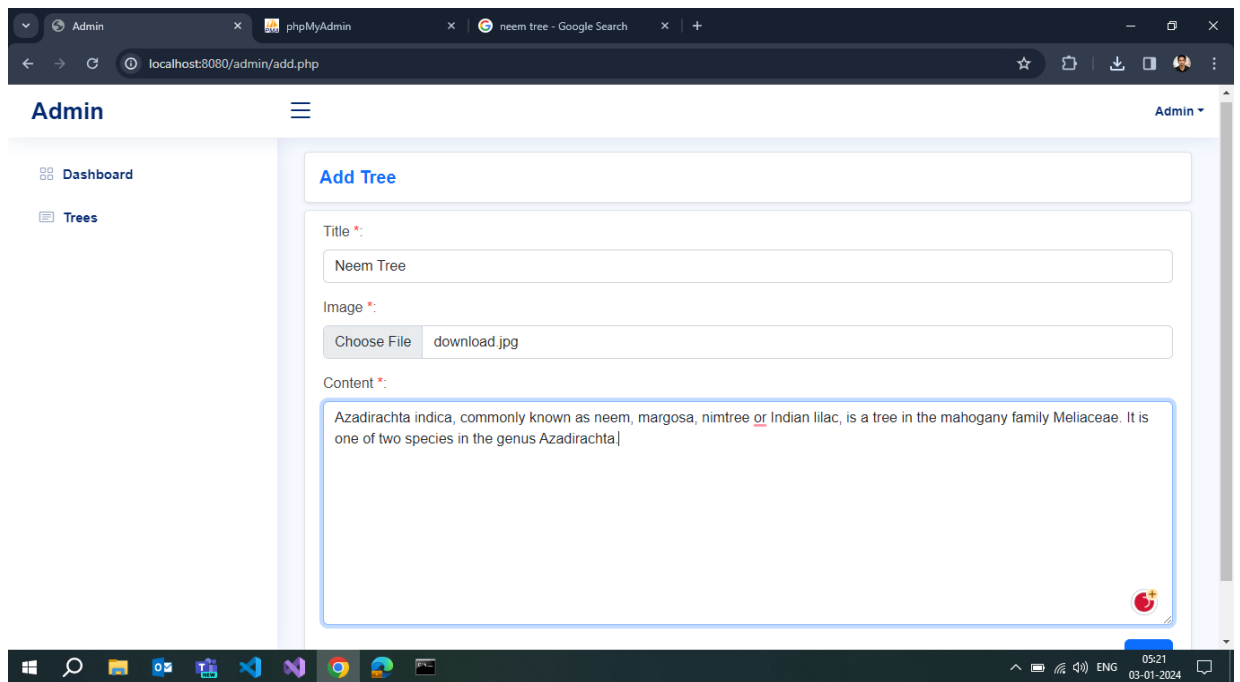


Fig 6.5: Uploading Details

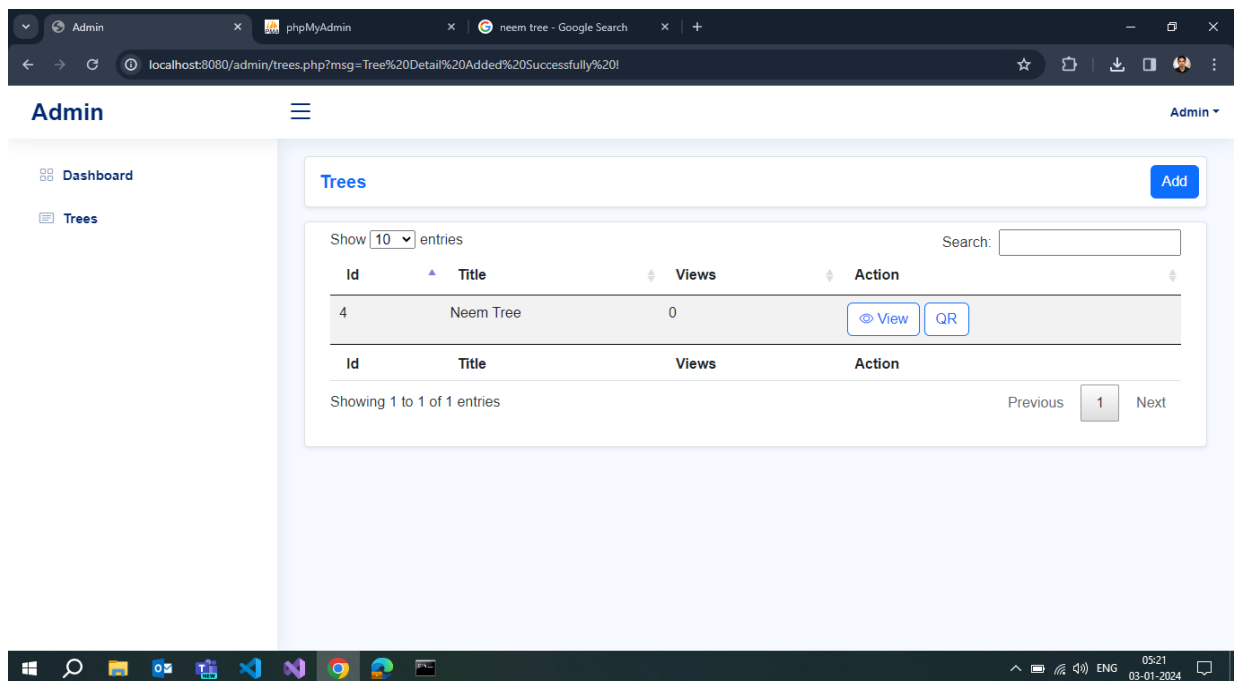


Fig 6.6: Uploaded Tree's Entries

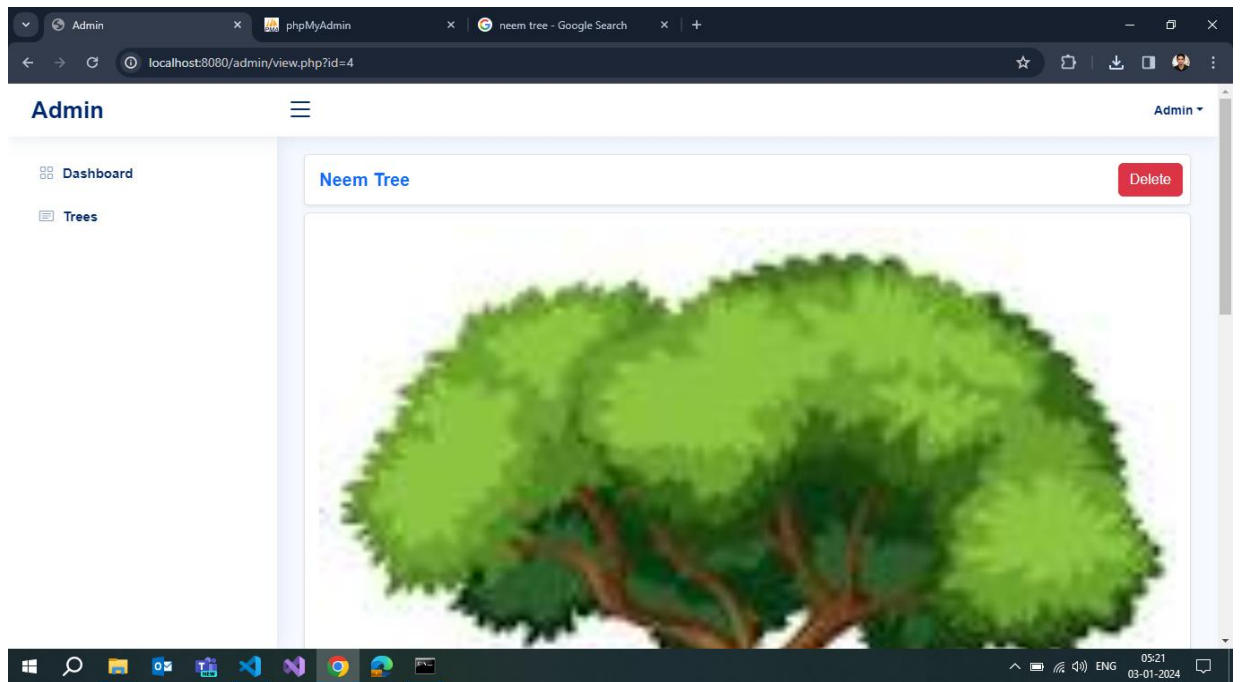


Fig 6.7: Inserting Image/ Deleting Page

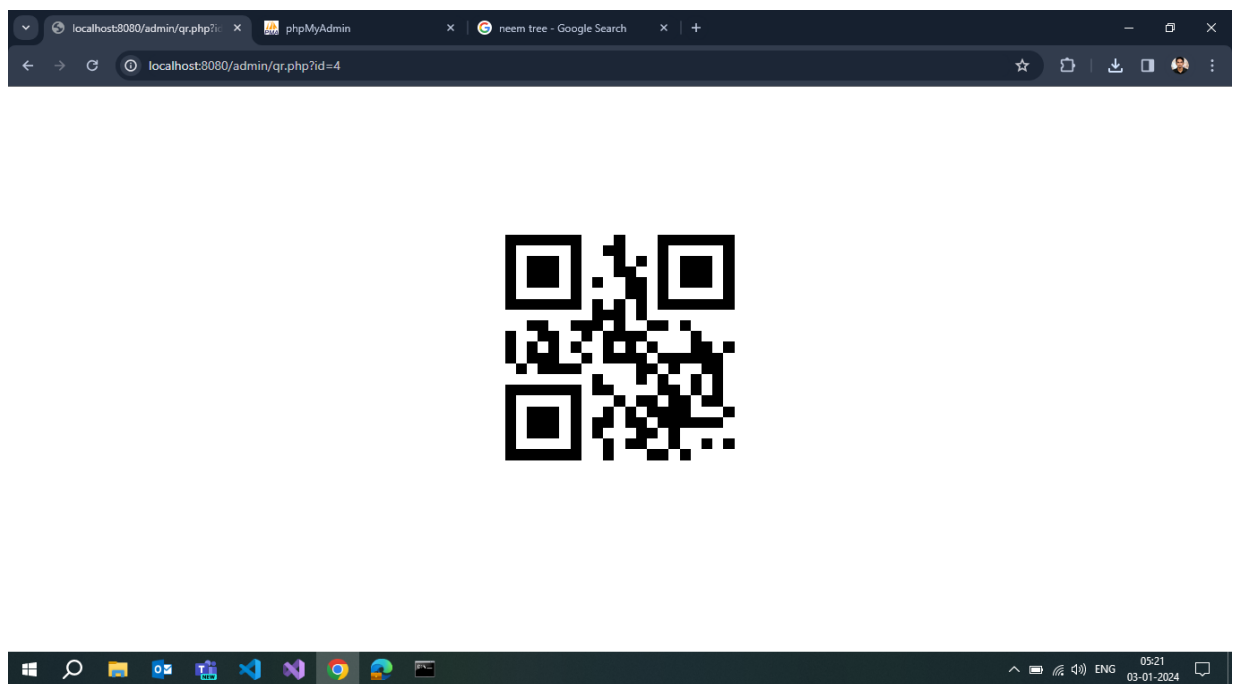


Fig 6.9: QR code to Scan

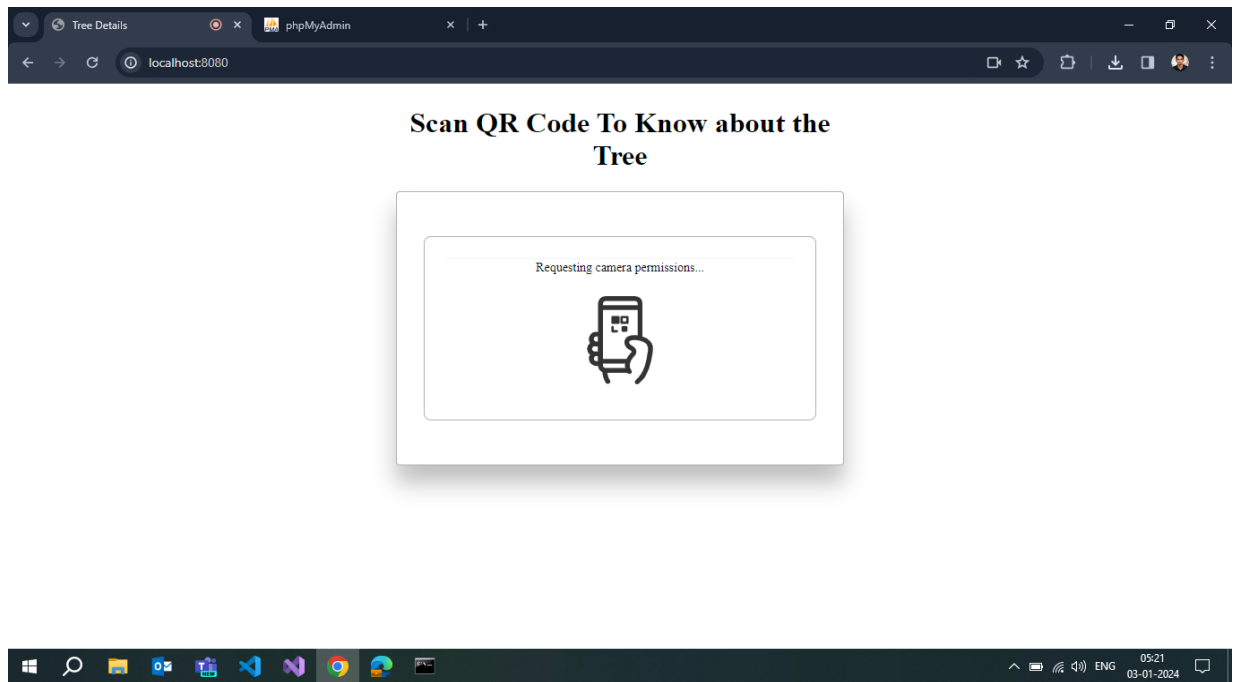


Fig 6.9: User Page

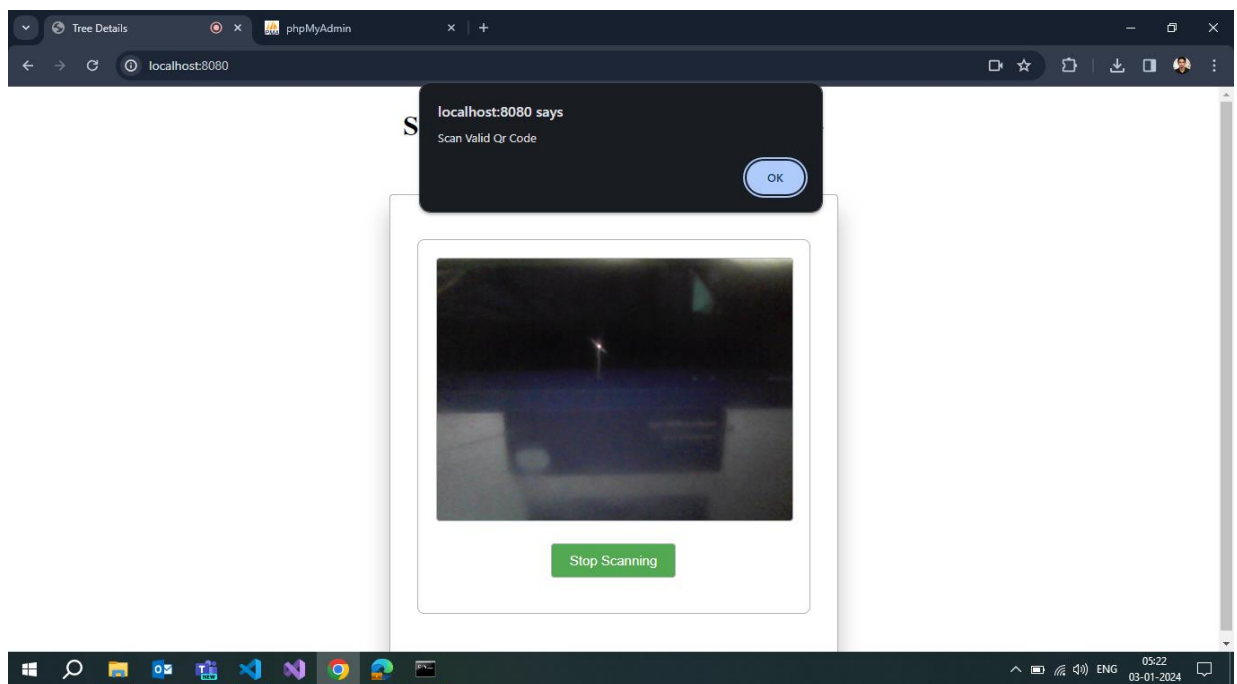


Fig 6.10: Scanning Page

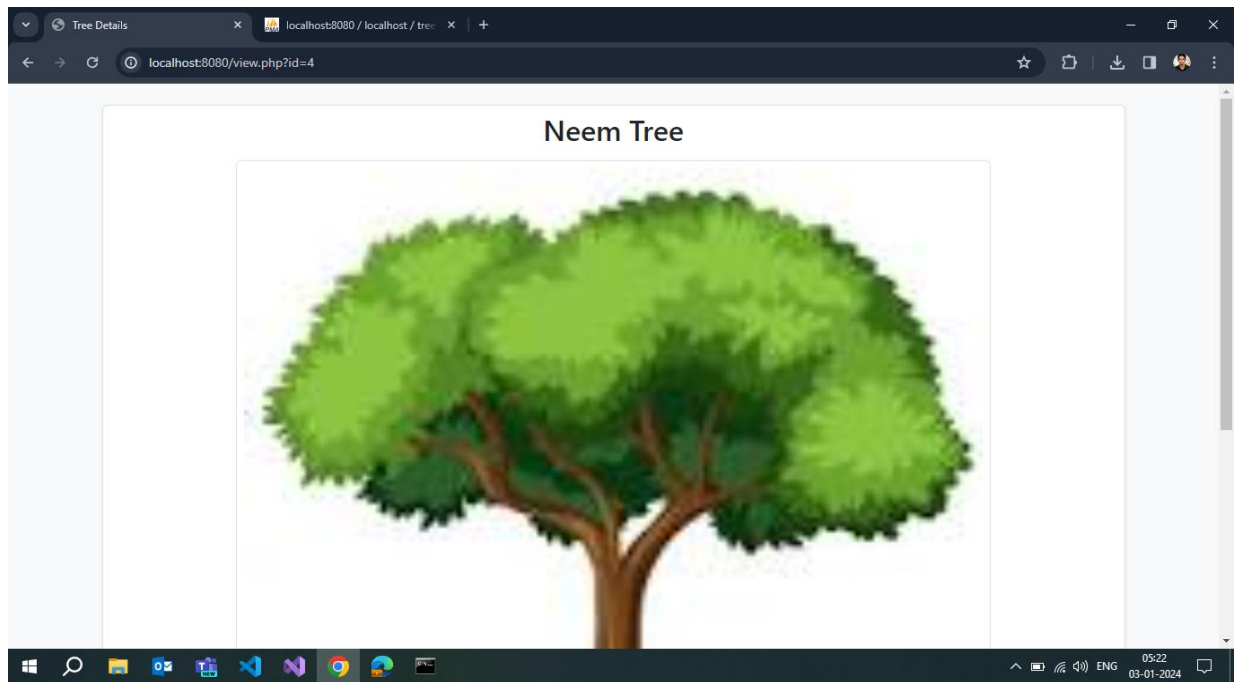


Fig 6.11: Output of Tree's Image

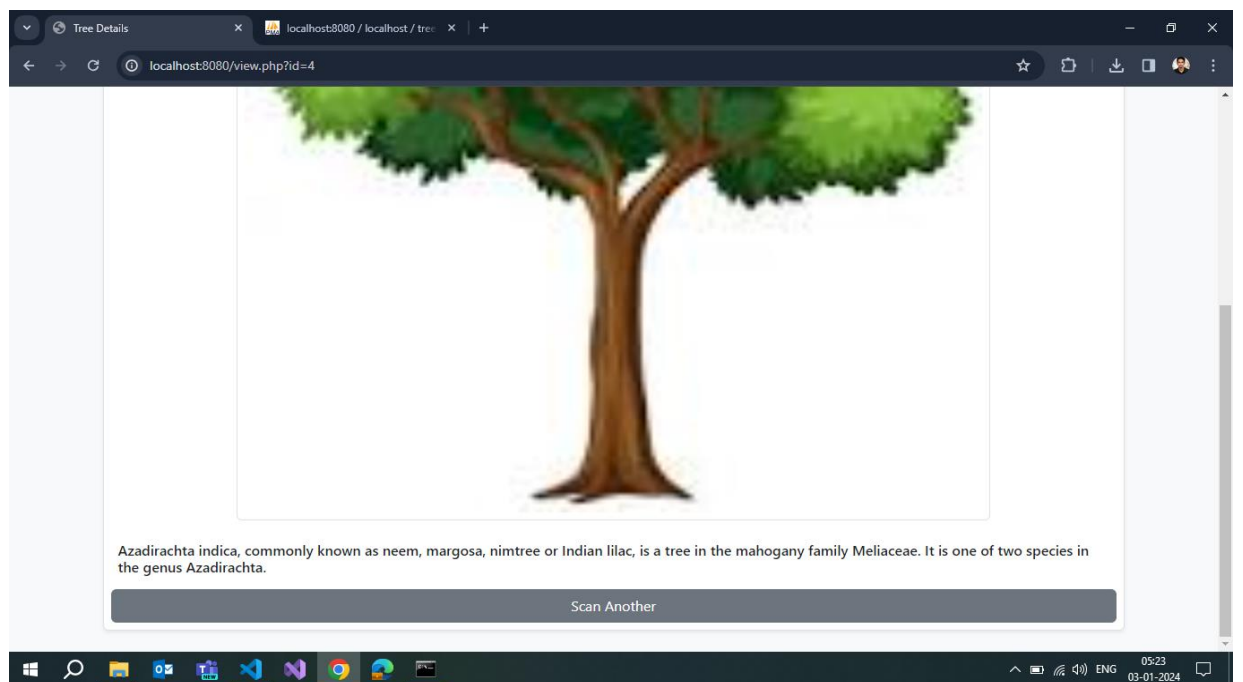


Fig 6.12: Tree's Detail

CHAPTER 7

CONCLUSION

This project demonstrated the application of augmented reality to the Botanical Garden. We presented a brand-new intelligent platform that the Botanical Garden deployed and used. It displayed information about its uses. The platform is multi-modular and intricate. The admin portion of the programme, the Web App, is in charge of indexing all of the current information in an easy-to-use manner, adding new plant details, and maintaining it all. The website of the Botanical Garden is also included in the web section. End-user interaction is the responsibility of the Android app. As a result, people may scan different QR-Barcodes to learn more about specific plants and to view a map of the entire garden. Our algorithm module's output beat the output of other models that were compared. We plan to upgrade the current modules and provide the image recognition module more resources in the future.

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APPENDIX

A. Source Code

```
<!DOCTYPEhtml>
<htmllang="en">

<head>
<metacharset="utf-8">
<metacontent="width=device-width, initial-scale=1.0"name="viewport">

<title>Admin</title>

<!-- Favicons -->
<linkhref="/static/logo.png"rel="icon">

<!-- Google Fonts -->
<linkhref="https://fonts.gstatic.com"rel="preconnect">
<linkhref="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700i|Nunito:300,300i,400,400i,600,600i,700,700i|Poppins:300,300i,400,400i,500,500i,600,600i,700,700i"rel="stylesheet">

<!-- Vendor CSS Files -->
<linkhref="/admin/static/vendor/bootstrap/css/bootstrap.min.css"rel="stylesheet">
<linkhref="/admin/static/vendor/bootstrap-icons/bootstrap-icons.css"rel="stylesheet">
<linkhref="/admin/static/vendor/boxicons/css/boxicons.min.css"rel="stylesheet">
<linkhref="/admin/static/vendor/quill/quill.snow.css"rel="stylesheet">
<linkhref="/admin/static/vendor/quill/quill.bubble.css"rel="stylesheet">
<linkhref="/admin/static/vendor/remixicon/remixicon.css"rel="stylesheet">
<linkhref="/admin/static/vendor/simple-datatables/style.css"rel="stylesheet">

<linkhref="/admin/static/css/style.css"rel="stylesheet">

</head>

<bodystyle="background-position:centercenter;background-repeat:no-repeat;background-size:cover">
<main><divclass="container">
<sectionclass="section register min-vh-100 d-flex flex-column align-items-center justify-content-center py-4">
<divclass="container">
<divclass="row justify-content-center">
<divclass="col-lg-4 col-md-6 d-flex flex-column align-items-center justify-content-center">

<divclass="card mb-3">
```

```

<divclass="card-body">

<divclass="pt-2 pb-2">
<h5class="card-title text-center pb-0 fs-4">Admin</h5>
</div>

<formclass="row g-3 needs-
validation"novalidateaction="/admin/login.php"method="post">

<divclass="col-12">
<labelfor="yourUsername"class="form-label">Username</label>
<divclass="input-group has-validation">
<inputtype="email"name="email"class="form-control"id="yourUsername"required>
<divclass="invalid-feedback">Please enter your email.</div>
</div>
</div>

<divclass="col-12">
<labelfor="yourPassword"class="form-label">Password</label>
<inputtype="password"name="password"class="form-
control"id="yourPassword"required>
<divclass="invalid-feedback">Please enter your password!</div>
</div>
<divclass="col-12">
<buttonclass="btnbtn-primary w-100"style="background-
color:#012970;"type="submit">Login</button>
</div>
</form>

</div>
</div>

</div>
</div>
</div>

</section>

</div>
</main><!-- End #main -->

<a href="#"class="back-to-top d-flex align-items-center justify-content-
center"><i class="bi bi-arrow-up-short"></i></a>

<!-- Vendor JS Files -->
<scriptsrc="/admin/static/vendor/apexcharts/apexcharts.min.js"></script>

```

```

<scriptsrc="/admin/static/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
<scriptsrc="/admin/static/vendor/chart.js/chart.umd.js"></script>
<scriptsrc="/admin/static/vendor/echarts/echarts.min.js"></script>
<scriptsrc="/admin/static/vendor/quill/quill.min.js"></script>
<scriptsrc="/admin/static/vendor/simple-datatables/simple-datatables.js"></script>
<scriptsrc="/admin/static/vendor/tinymce/tinymce.min.js"></script>
<scriptsrc="/admin/static/vendor/php-email-form/validate.js"></script>

<!-- Template Main JS File -->
<scriptsrc="/admin/static/js/main.js"></script>

</body>

</html>

```

Home.php

```

<?phprequire("../layout/db.php"); ?>
<?phprequire("../layout/Header.php"); ?>
<?phprequire("../layout/Navbar.php"); ?>
<divclass="pagetitle">
<h1>Dashboard</h1>
</div>

<divclass="row">
<divclass="col-sm-12 col-md-12 col-lg-4 col-xl-4">
<divclass="card info-card sales-card">
<divclass="card-body bg-primary rounded text-white">
<h5class="card-title text-white">Total Trees </h5>

<divclass="d-flex align-items-center">
<divclass="ps-3">
<h6>
<?php
$result = $conn->query("SELECT*FROM post");
echo($result->num_rows);
?>
</h6>
</div>
</div>
</div>
</div>
</div>
<divclass="col-sm-12 col-md-12 col-lg-4 col-xl-4">
<divclass="card info-card sales-card">
<divclass="card-body bg-success rounded text-white">

```

```
<h5class="card-title text-white">Total Views</h5>
```

```
<divclass="d-flex align-items-center">
<divclass="ps-3">
<h6>
<?php
$result = $conn->query("SELECTSUM/views) as views FROM post");
while($row = $result->fetch_assoc()){
echo($row['views']);
}
?>
</h6>
</div>
</div>
</div>
</div>
</div>
</div>
```

```
<?phprequire("../layout/Footer.php"); ?>
```

Add.php

```
<?phprequire("../layout/Header.php"); ?>
<?phprequire("../layout/Navbar.php"); ?>
<?phprequire("../layout/db.php"); ?>

<divclass="card mb-2 shadow-sm border">
<divclass="card-body p-2">
<divclass="d-flex align-items-center justify-content-between">
<h5class="h5 text-primary p-2 m-0 fw-bolder">Add Tree</h5>
</div>
</div>
</div>
<divclass="card mb-3 shadow-sm border p-2">
<formaction="/admin/action/add.php"method="post"enctype="multipart/form-
data"class="container">
<divclass="mt-1 mb-3">
<labelfor="draw"class="form-label">Title <spanstyle="color:red">*</span>:</label>
<inputrequiredtype="text"placeholder="Tree Name .."class="form-
control"name="title">
</div>
<divclass="mt-1 mb-3">
<labelfor="draw"class="form-label">Image <spanstyle="color:red">*</span>:</label>
<inputrequiredtype="file"accept="image/png, image/gif, image/jpeg"class="form-
```

```

control"name="img">
</div>
<divclass="mt-3 mb-3">
<labelfor="draw"class="form-label">Content <spanstyle="color:red">*</span>:</label>
<textareaname="content"placeholder="Content about the tree"requiredclass="form-
control"cols="30"rows="10"></textarea>
</div>
<divclass="text-end mt-3">
<buttonclass="btnbtn-primary">Add</button>
</div>
</form>
</div>

```

```

<?phprequire("../layout/Footer.php"); ?>
Api.php

```

```

<?php
require("../layout/db.php");

```

```

// initilize all variable
$params = $columns = $totalRecords = $data = array();

```

```

$params = $_REQUEST;

```

```

//define index of column
$columns = array(
0 =>'id',
1 =>'title',
2 =>'views',
3 =>'action'
);

```

```

$where = $sqlTot = $sqlRec = "";

```

```

// check search value exist

```

```

// check search value exist
if( !empty($params['search']['value']) ) {
$where .= " WHERE ";
$where .= " title LIKE " . $params['search']['value'] . "%' ";
$where .= " OR id LIKE " . $params['search']['value'] . "%' ";
$where .= " OR views LIKE " . $params['search']['value'] . "%' ";
}

```

```

// getting total number records without any search

```

```

$sql = "SELECT id,title,views FROM post ";
$sqlTot .= $sql;
$sqlRec .= $sql;
//concatenate search sql if value exist
if(isset($where) &&$where != "") {
    $sqlTot .= $where;
    $sqlRec .= $where;
}

$sqlRec .= " ORDER BY ";
$columns[$params['order'][0]['column']] .= " ".$params['order'][0]['dir']." LIMIT
".$params['start']." , ".$params['length']." ";

$queryTot = mysqli_query($conn, $sqlTot) or die("database error:".
mysqli_error($conn));

$totalRecords = mysqli_num_rows($queryTot);

$queryRecords = mysqli_query($conn, $sqlRec) or die("error to fetch employees
data");
//iterate on results row and create new index array of data
while( $row = mysqli_fetch_row($queryRecords) ) {
    $row[3] = "
<a href='/admin/view.php?id=".$row[0]."' class='btn btn-outline-primary bg-white text-
primary'><i class='bi bi-eye'></i> View</a>
<a target='blank' href='/admin/qr.php?id=".$row[0]."' class='btn btn-outline-primary bg-
white text-primary'><i class='bi bi-print'></i> QR</a>
";
    $data[] = $row;
}

$json_data = array(
    "draw"          => intval( $params['draw'] ),
    "recordsTotal"   => intval( $totalRecords ),
    "recordsFiltered" => intval($totalRecords),
    "data"          => $data // total data array
);
$conn->close();
echo json_encode($json_data); // send data as json format
?>
Login.php
<?php
session_start();
if ($_POST["email"]=="admin@gmail.com") {
    if ($_POST["password"]=="admin") {
        $_SESSION["lock"] = "xiny9387tdpq###&B98oyo8B@*O&^PB^B$";
    }
}

```

```

header("Location: /admin/home.php");
die();
} else {
header("Location: /admin/?err=username or password is incorrect!");
die();
}
} else {
header("Location: /admin/?err=username or password is incorrect!");
die();
}
}

?>
Qr.php
<?phprequire("../layout/db.php"); ?>
<scriptsrc="https://cdnjs.cloudflare.com/ajax/libs/qrcodejs/1.0.0/qrcode.min.js"></script
>
<?php
$id= $_GET['id'];
?>
<mainstyle="display:flex;justify-content:center;align-items:center;height:90svh">
<divid="qrcode"></div>
</main>
<script>
varqrcode = newQRCode("qrcode",
"<?phpecho($id) ?>");
</script>
Trees.php
<?phprequire("../layout/Header.php"); ?>
<?phprequire("../layout/Navbar.php"); ?>
<?phprequire("../layout/db.php"); ?>
<divclass="card mb-3 shadow-sm border">
<divclass="card-body p-2">
<divclass="d-flex align-items-center justify-content-between">
<h5class="h5 text-primary p-2 m-0 fw-bolder pagetitle">Trees</h5>
<a href="/admin/add.php">
<buttonclass="btn btn-primary">Add</button>
</a>
</div>
</div>
</div>
<divclass="card shadow-sm border p-2">
<divclass="card-body table-responsive">
<tableid="cm_grid"class="table table-striped table-
hover"width="100%"cellspacing="0">
<thead>
<tr>

```

```

<th>Id</th>
<th>Title</th>
<th>Views</th>
<th>Action</th>
</tr>
</thead>
<tfoot>
<tr>
<th>Id</th>
<th>Title</th>
<th>Views</th>
<th>Action</th>
</tr>
</tfoot>
</table>
</div>
</div>
<scripttype="text/javascript">
$( document ).ready(function() {
var table = $('#cm_grid').DataTable(
{
    "bProcessing":true,
    "serverSide":true,
    "ajax":{
        url :"/admin/api.php",
        type:"get",
        error:function(){
            $('#urban_grid').css("display","none");
        }
    }
});
});

</script>
<?phprequire("../layout/Footer.php"); ?>
Views.php
<?phprequire("../layout/Header.php"); ?>
<?phprequire("../layout/Navbar.php"); ?>
<?phprequire("../layout/db.php"); ?>
<?php
$id= $_GET['id'];
$result = $conn->query("SELECT*FROM post WHERE id='$id'");
while($row = $result->fetch_assoc()){
    $title = $row['title'];
    $content = $row['content'];

```

```

$img = $row['img'];
}
?>
<divclass="card mb-2 shadow-sm border">
<divclass="card-body p-2">
<divclass="d-flex align-items-center justify-content-between">
<h5class="h5 text-primary p-2 m-0 fw-bolder"><?phpecho($title) ?></h5>
<a href="/admin/action/delete.php?id=<?phpecho($id)?>">
<buttonclass="btn btn-danger">Delete</button>
</a>
</div>
</div>
</div>
</div>
<imgsrc="/static/uploads/<?phpecho($img) ?>"class="w-100 mb-3 p-3 bg-white
rounded border shadow-sm">
<divclass="card mb-3 shadow-sm border p-2">
<formaction="/admin/action/update.php"method="post" class="container">
<inputtype="hidden"name="id"value="<?phpecho($id) ?>">
<divclass="mt-1 mb-3">
<labelfor="draw"class="form-label">Title <spanstyle="color:red">*</span>:</label>
<inputrequiredtype="text"value="<?phpecho($title) ?>"placeholder="Tree Name
.."class="form-control"name="title">
</div>
<divclass="mt-3 mb-3">
<labelfor="draw"class="form-label">Content <spanstyle="color:red">*</span>:</label>
<textareaname="content"placeholder="Content about the tree"requiredclass="form-
control"cols="30"rows="10"><?phpecho($content) ?></textarea>
</div>
<divclass="text-end mt-3">
<buttonclass="btn btn-primary">Update</button>
</div>
</form>
</div>

<?phprequire("../layout/Footer.php"); ?>

```

```

Index.php:
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport"
content="width=device-width, initial-scale=1.0">
<link rel="stylesheet"
href="/static/style.css">
<title>Tree Details
</title>

```

```

</head>
<body>
<divclass="container">
<h1>Scan QR Code To Know about the Tree</h1>
<divclass="section">
<divid="my-qr-reader">
</div>
</div>
</div>
<script
src="https://unpkg.com/html5-qrcode">
</script>
<scriptsrc="/static/script.js"></script>
</body>
</html>
View.php
<?phprequire("./admin/layout/db.php"); ?>
<?php
$id= $_GET['id'];
$result = $conn->query("SELECT*FROM post WHERE id='$id'");
while($row = $result->fetch_assoc()){
$title = $row['title'];
$content = $row['content'];
$img = $row['img'];
}
?>
<!DOCTYPEhtml>
<htmllang="en">
<head>
<metacharset="UTF-8">
<metaname="viewport"content="width=device-width, initial-scale=1.0">
<title>Tree Details</title>
<linkhref="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css"rel=
"stylesheet"integrity="sha384-
T3c6Coli6uLrA9TneNEoa7RxnatzjcDSCmG1MXxSR1GAsXEVDwwykc2MPK8M2HN
"crossorigin="anonymous">
</head>
<bodyclass="bg-light py-4">
<divclass="container p-2 bg-white rounded border shadow-sm">
<h2class="text-center"><?phpecho($title)?></h2>
<divclass="text-center my-3">
<imgsrc="/static/uploads/<?phpecho($img)?>"alt=""class="w-75 border rounded p-2">
</div>
<pclass="h6 p-2"><?phpecho($content)?></p>
<a href="/"class="my-3">
<buttonclass="btn btn-secondary w-100">Scan Another</button>

```

```

</a>
</div>
</body>
</html>
Add.php
<?php
require("../layout/db.php");
functiontest_input($data) {
    $data = trim($data);
    $data = stripslashes($data);
    $data = htmlspecialchars($data);
    return $data;}
$file_name = strtotime("now").$_FILES["img"]["name"];
$target_dir = "../static/uploads/";
$target_file = $target_dir .basename($file_name);
$title = test_input($_POST['title']);
$content = test_input($_POST['content']);
if (move_uploaded_file($_FILES["img"]["tmp_name"], $target_file)) {
    $sql = "INSERT INTO post (title,content,img,views)
    VALUES ('$title' , '$content' , '$file_name' , 0)";
    if ($conn->query($sql) === TRUE) {
        header("Location: /admin/trees.php?msg=Tree Detail Added Successfully !");
        die();
    } else {
        header("Location: /admin/trees.php?err=Something went Wrong! Try again");
        die();
    }
} else {
    header("Location: /admin/trees.php?err=Something went Wrong!");
    die();
}
?>
Delete.php:
<?php
require("../layout/db.php");
$id= $_GET['id'];
$sql = "DELETEFROM post WHERE id='$id'";
if ($conn->query($sql) === TRUE) {
    header("Location: /admin/trees.php?page=1&msg=Tree Deleted Successfully !");
    die();
} else {
    header("Location: /admin/trees.php?page=1&err=Something went Wrong!");
    die();
}
?>

```

```

Update.php
<?php
require("../layout/db.php");
functiontest_input($data) {
    $data = trim($data);
    $data = stripslashes($data);
    $data = htmlspecialchars($data);
    return $data;
}
$title = test_input($_POST['title']);
$content = test_input($_POST['content']);
$id = $_POST['id'];
$sql = "UPDATE post SET title='$title', content='$content' WHERE id='$id'";
if ($conn->query($sql) === TRUE) {
    header("Location: /admin/trees.php?msg=Tree Detail Updated Successfully !");
    die();
} else {
    header("Location: /admin/trees.php?err=Something went Wrong! Try again");
    die();
}

?>
Footer.php
</main>
<script>
constqueryString = window.location.search;
consturlParams = newURLSearchParams(queryString);
if(urlParams.get('err')){
    document.write("<div style='position:fixed;bottom:30px; right:30px;background-color:tomato;padding:10px;border-radius:10px;box-shadow:2px 2px 4px #aaa;color:white;font-weight:600'>"+urlParams.get('err')+"</div>")
}
setTimeout(=>{
    document.getElementById("err").style.display="none"
}, 5000)
</script>
<a href="#" class="back-to-top d-flex align-items-center justify-content-center"><i class="bi bi-arrow-up-short"></i></a>
<!-- Vendor JS Files -->
<scriptsrc="/admin/static/vendor/apexcharts/apexcharts.min.js"></script>
<scriptsrc="/admin/static/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
<scriptsrc="/admin/static/vendor/chart.js/chart.umd.js"></script>
<scriptsrc="/admin/static/vendor/echarts/echarts.min.js"></script>
<scriptsrc="/admin/static/vendor/quill/quill.min.js"></script>
<scriptsrc="/admin/static/vendor/simple-datatables/simple-datatables.js"></script>
<scriptsrc="/admin/static/vendor/tinymce/tinymce.min.js"></script>

```

```

<scriptsrc="/admin/static/vendor/php-email-form/validate.js"></script>
<scriptsrc="/admin/static/js/main.js"></script>
</body>
</html>
Header.php
<!DOCTYPEhtml>
<htmllang="en">
<head>
<metacharset="utf-8">
<metacontent="width=device-width, initial-scale=1.0"name="viewport">
<title>Admin</title>
<!-- Favicons -->
<linkhref="/static/logo.png"rel="icon">
<scriptsrc="https://ajax.googleapis.com/ajax/libs/jquery/3.7.1/jquery.min.js"></script>
<!-- Vendor CSS Files -->
<linkhref="/admin/static/vendor/bootstrap/css/bootstrap.min.css"rel="stylesheet">
<linkhref="/admin/static/vendor/bootstrap-icons/bootstrap-icons.css"rel="stylesheet">
<linkhref="/admin/static/vendor/boxicons/css/boxicons.min.css"rel="stylesheet">
<linkhref="/admin/static/vendor/quill/quill.snow.css"rel="stylesheet">
<linkhref="/admin/static/vendor/quill/quill.bubble.css"rel="stylesheet">
<linkhref="/admin/static/vendor/remixicon/remixicon.css"rel="stylesheet">
<linkhref="/admin/static/vendor/simple-datatables/style.css"rel="stylesheet">
<linkrel="stylesheet"type="text/css"href="https://cdn.datatables.net/1.10.9/css/jquery.d
ataTables.min.css"/>
<scripttype="text/javascript"src="https://cdn.datatables.net/1.10.9/js/jquery.dataTables
.min.js"></script>
<!-- Template Main CSS File -->
<linkhref="/admin/static/css/style.css"rel="stylesheet">
<scriptsrc="/static/js/moment.js"></script>
</head>
<body>
<!-- ===== Header ===== -->
<headerid="header"class="header fixed-top d-flex align-items-center">
<divclass="d-flex align-items-center justify-content-between">
<a href="index.html"class="logo d-flex align-items-center">
<imgsrc="/static/img/logo.png"alt="">
<spanclass="d-none d-lg-block">Admin</span>
</a>
<iclass="bi bi-list toggle-sidebar-btn"></i>
</div><!-- End Logo -->
<navclass="header-nav ms-auto">
<ulclass="d-flex align-items-center">
<liclass="nav-item dropdown pe-3">
<aclass="nav-link nav-profile d-flex align-items-center pe-0"href="#"data-bs-
toggle="dropdown">
<spanclass="dropdown-toggle ps-2">Admin</span>

```

```

</a><!-- End Profile Image Icon -->
<ulclass="dropdown-menu dropdown-menu-end dropdown-menu-arrow profile">
</li>
<aclass="dropdown-item d-flex align-items-center"href="/admin/logout.php">
<iclass="bi bi-box-arrow-right"></i>
<span>Log Out</span>
</a>
</li>
</ul><!-- End Profile Dropdown Items -->
</li>
</ul>
</nav>
</header>
Navbar.php
<asideid="sidebar"class="sidebar">
<ulclass="sidebar-nav"id="sidebar-nav">
<liclass="nav-item">
<aclass="nav-link collapsed"href="/admin/home.php">
<iclass="bi bi-grid"></i>
<span>Dashboard</span>
</a>
</li>
<liclass="nav-item">
<aclass="nav-link collapsed"href="/admin/trees.php">
<iclass="bi bi-card-text"></i>
<span>Trees</span>
</a>
</li>
</ul>
</aside><!-- End Sidebar-->
<mainid="main"class="main">
Db.php
<?php
session_start();
if($_SESSION["lock"] == "xiny9387tdpq###&B98oyo8B@*O&^PB^B$"){
}else{
header("Location: /admin?msg=Illegal Access");
die();
}
$servername = "localhost";
$conn = newmysqli($servername, $username, $password,$db_name);
if ($conn->connect_error) {
die("Connection failed: " . $conn->connect_error);}
?
>

```