A Project Report On

Power Hub

In Partial Fulfilment of Requirement For

B Tech in Computer Science & Engineering

by

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Under the Supervision of

Dr. Raju Ranjan

(Asst. Professor)

University B Tech

School of Computer Science & Engineering

(Batch 2019-22)

DECLARATION

We hereby declare that the project entitled “Power Hub” submitted for the B.tech in Computer Science and Engineering is my original work and the project has not formed the basis for the award of any other degree, B.tech, fellowship or any other similar titles.

Place :

Date:

Signature

(Sumit Kumar Singh)

(Gulam E Gous)

CERTIFICATE

This is to certify that the project titled "**Power Hub**" is the bona fide work carried out by **Sumit Kr. Singh** and **Gulam E Gous** students of B tech in computer science and Engineering , Galgotias University , Gautam buddh Nagar, Uttar Pradesh (India) during the academic year 2019-22, In partial fulfillment of the requirements for the award of the B tech in computer science and Engineering and that the project has not formed the basis for the award previously of any other degree, B tech, fellowship or any other similar title.

Place : Guide Signature

Date: (Dr. Raju Ranjan)

Table of Contents

1. INTRODUCTION

This document lays out a project plan for the development of “Power Hub” an online web and mobile based E-vehicle unman charging system for flatted residential complex in locality by Sumit Kumar Singh and Gulam E Gous. The intended readers of this document are current and future developers working on “Power Hub” and the Guide of the project. The plan will include, but is not restricted to, a summary of the system functionality, the scope of the project from the perspective of the “Power Hub” team, scheduling and delivery estimates, project risks and how those risks will be mitigated, the process by which we will develop the project, and metrics and measurements that will be recorded throughout the project.

1.1 Project Definition

In today's world, Electricity plays a significant role in our daily lives and it is impossible to survive without electricity as we've got used to it now. However, we are using electricity up to a greater extent without caring about its conservation and future use. It is important to start saving electricity so that we can conserve it for our future generations as well. There are various methods by which we can save electricity and one of the best methods to save electricity by using our "Power Hub" system. Even with the presence of so many apps in and around them, they are not able to solve this problem . We aim to develop an application and a website that would enable them to conserve electricity and we will use it only when it's needed. For example. If someone wants to charge own E-vehicle, electronic gadgets simply they go through with our application or website scan QR code choose time period and make payment after completing payment power hub automatically supply current in power hub circuit board. This application also a no-man charging system and will make a digital India. It also help to make a pollution free environment (green environment). Best thing of our application is that it has a power backup system which provide 24 x 7 services.

1.2 Project Overview

Power Hub is a web and mobile based E-vehicle no-man charging solution developed in Flutter(Dart), HTML, CSS, JavaScript language.

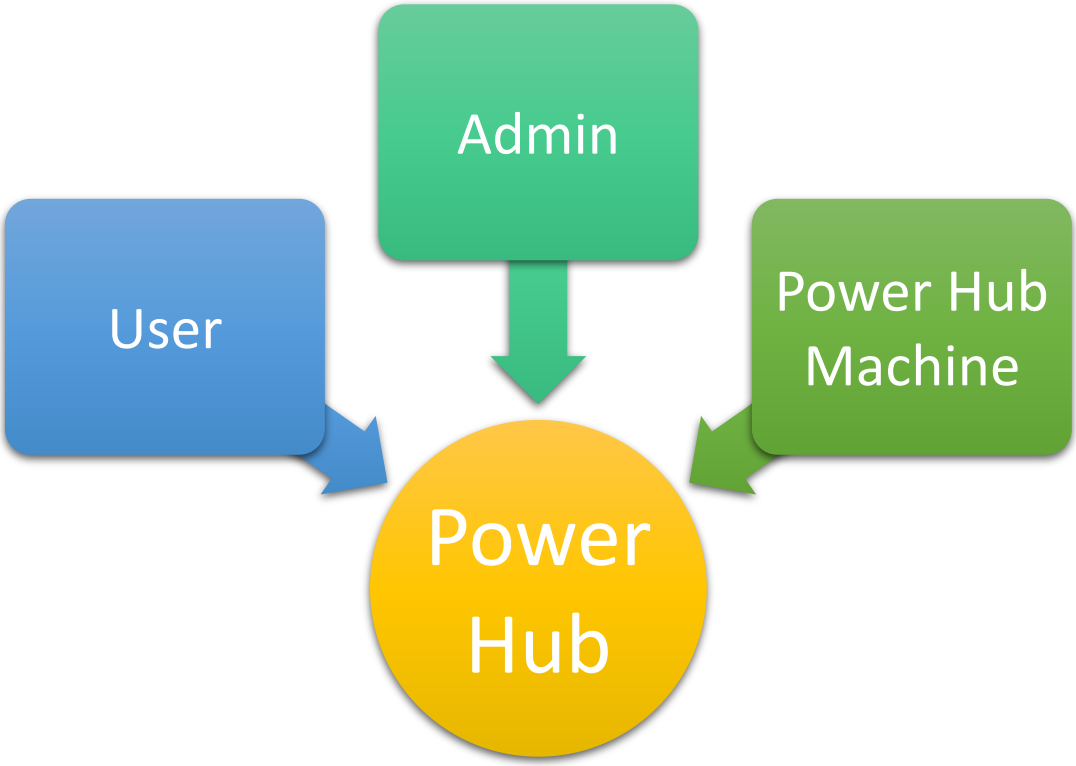
Detailed explanation about this project is explained below :-

User :

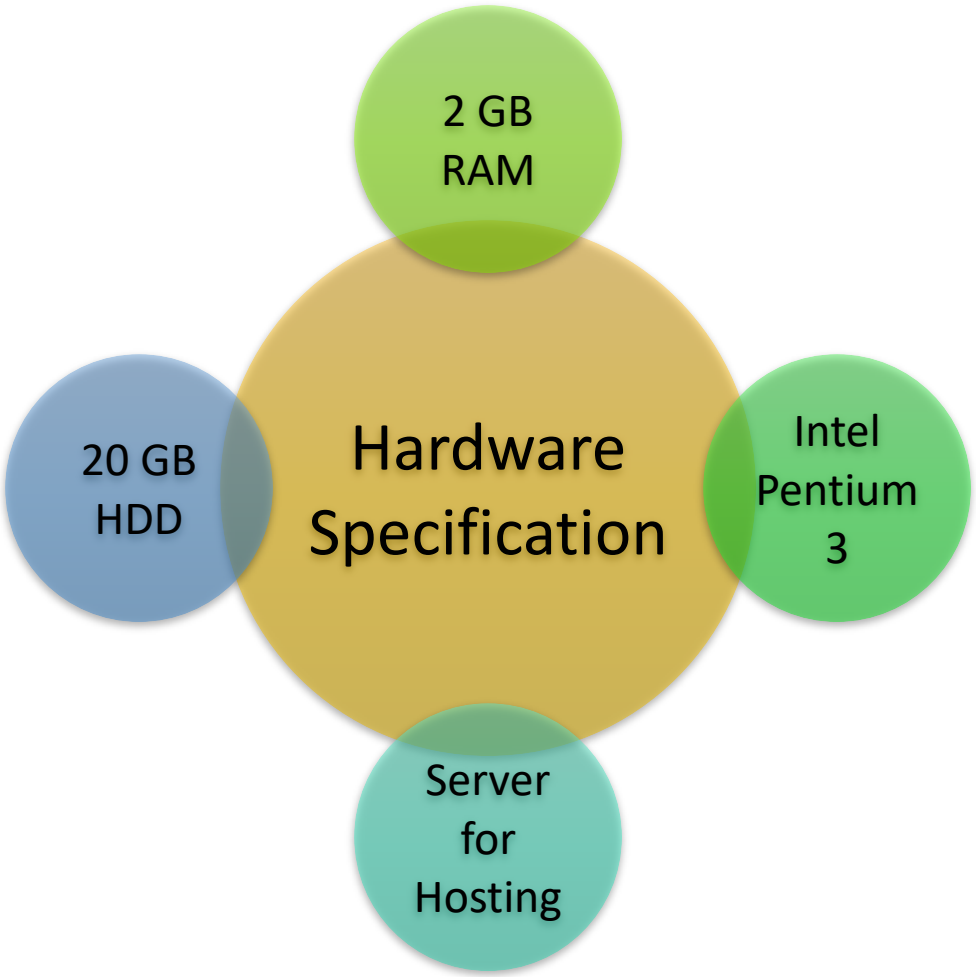
- User can see the categorized services.
- User can scan QR code and choose payment option.
- User can send a query to admin for particular services and get response for that query.
- User can update personal their detail.

Admin Application:

- Admin can manage the different databases.
- Admin can also upload and mange classifieds services behalf of user.
- Admin can approve scheme activation and service activation request of the user.
- Admin can view the details of user, payment scheme detail and feedback detail.
- Admin can search particular classifieds services.

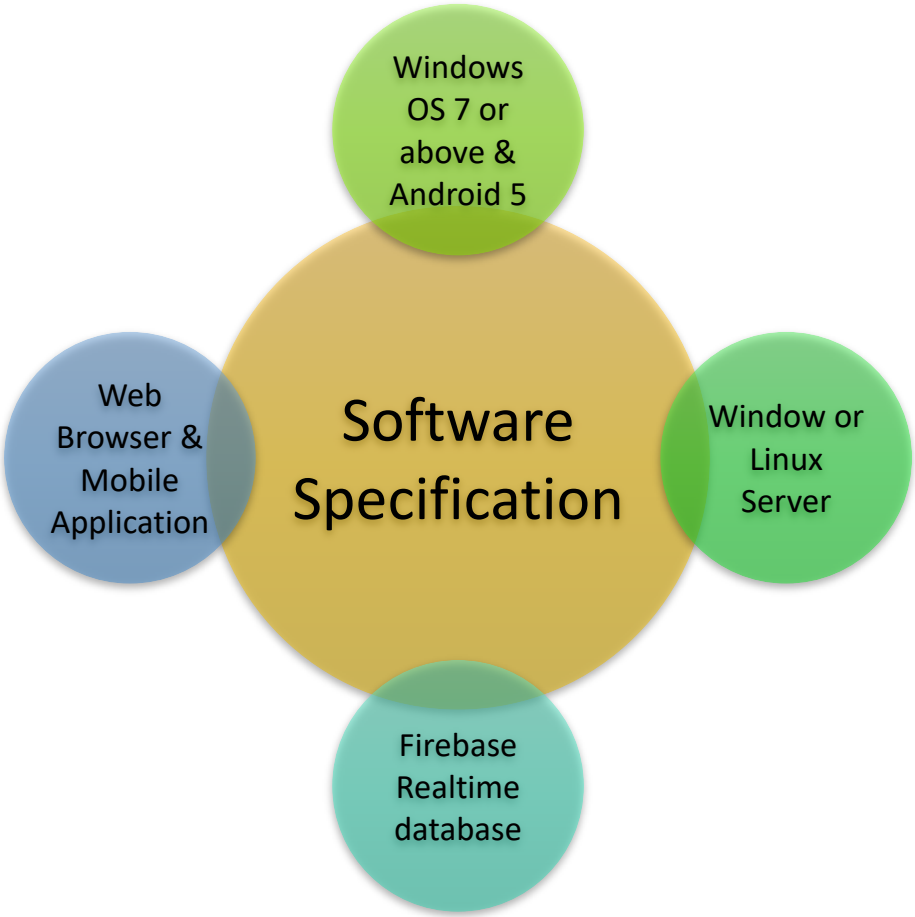

Admin
User
Power Hub Machine
Power Hub

.3 Minimum Hardware Specification



- RAM 2GB DDR3.
- 40 GB HDD.
- Processor: Intel Pentium 3 @ 1.2Ghz.
- Server for hosting Website and Application.

1.4 Software Specification



- Windows OS 7 or Above & Android 5 or Above.
- Latest Web Browser.
- Windows Server 2007 or Linux Server.
- Firebase Realtime Database.

2.1 Existing System

In the earlier times it was difficult to reach out with the classifieds service to people spread over a wider area easily. If we publish it in a print media, the editions would be limited, in the case of television the audiences would be limited. Ever since internet has burst into the scene, much like everything advertisement industry has also picked up. Online classifieds services are the need of the hour as a user can become both service provider and user on the click of a button. More over since it is published online, any person can see it sitting anywhere in the world. All it takes is basic computer and mobile knowledge to browse this site.

In the existing system, interaction between user and charging system is too difficult because there is no any user-friendly interface. In these system there is lack of user security and there is no any power back system available due to this this system is totally dependent on electricity, if any how electricity is not available the system is useless.

This existing system is based on manual system, which takes lot of time to get performance of the test.

- This existing system doesn't fulfil the following activity
- Lack of User Security.
- This system does not support reliable and secure payment methods.
- This system does not support any power backup option.
- This system can't inform the electricity office during accident.
- This system doesn't support the user wise information and their services.
- This system does not show how long this battery will be fully charged.

- Data handling can be outsourced by direct cloud services provider to other entities in the cloud and these entities can also delegates the task to other and so on.
- No log and jar file created for this system
- Data in the cloud may be of encrypted form.

2.2 Proposed System

We have to developed a software which is totally based on computer and mobile phone in which the it provides e-vehicle with no-man charging services.

The proposed system is a multi-factor authentication scheme that combine the benefits of various schemes.

User :

- User can see the categorized services and their details.
- User can send a query to admin for particular services and get response for that query.
- User can save particular service or category.
- User scan QR code and make payment for use this system.
- User can see charging status.
- User can generate charging bill.
- User can update personal their detail.

Admin Application:

- Admin can manage the different databases.
- Admin can also upload and mange classifieds services behalf of user.
- Admin can approve scheme activation and service activation request of the user.
- Admin can view the details of user and feedback detail.
- Admin can search particular classifieds services.

2.3 Feasibility Study

With the advent of Globalization, companies across the world are seeking the help of the Internet to save themselves. Not only is Internet the fastest mode of communication these days, but it also is the cheapest way of Providing services. It exposes a business to a vast sea of customers that use internet all over the globe. Various Online Portals like eBay, Amazon, Yahoo, etc have helped create a platform for businesses to advertise and market themselves online. This helped businesses to sell their goods online faster.

The project was taken up to study the feasibility of the classified in India so as to provide an opportunity for an upcoming India Based Online E-vehicle Charging Portal **Power Hub**.

To understand this, we first did a secondary research about various other Online E-vehicle Charging System Portals and their working models. We also tried to find out where the number of e-vehicle are increases rapidly. This would help **Power Hub** target their location and user accordingly. Further we analyzed if similar pattern would be possible in India or not.

After having a background research done, we carried out a survey with the e-biker, e-vehicle driver (like: e-auto, e-car, e-bike etc.) and e-vehicle manufacturers. We selected the Category – **E-vehicle charging station (near parking slot)**. The Services were chosen on Random Sampling basis. This survey helped us understand the market tendencies better and to see what are the anxieties of the business towards entering Online charging system.

The study can be further enhanced by analyzing different types of industries and segmenting each industry based on the size of the business. This would give a better understanding of how each industry behaves in Indian market and also understand who can be the potential businesses who would want to use **Power Hub**. Similarly, this would also help **Power Hub** modify its model in a way that would suit its target businesses so as to generate maximum revenue from this portal.

This project was undertaken to carry out a market feasibility study for **Power Hub** so as to understand the Indian market better and understand if there is a possibility

of growth of Online charging in the Indian market. The study was carried out in Delhi/NCR only.

Power Hub decided to frame its business model in order to assist the businesses here in India with their services so as to maximize the traffic on the Application/website. Some of the features offered by Power Hub would be:

- Complete assistance for the services so that the Businesses do not need to carry out any online activities themselves.
- Cheaper way of advertising
- Provision of advertisement banners on the website to attract customers' attention
- Research Methodology
- The entire project is carried out in 5 phases .
- Statement of Problem
- In India, businesses have been carrying out their sales in a traditional way.
- Research Objectives
- The objectives for carrying out the research are:
- To understand the awareness and demand of Businesses in India to advertise and sell products online
- To understand how to target businesses that are willing to opt for online sales and how to increase the user traffic for Power Hub.
- To determine at what costs the companies are willing to sell the commodities Online and for online advertising.
- To determine what products (overstock / existing) are businesses ready to trade online
- Information Areas Captured
- To understand the market feasibility of the Online Advertising and Marketing for the B2B Sections, the information will be captured for the following areas:
- Online Trading and Advertising Application / Websites
- Awareness of the Application / websites
- Factors that drive them to select these websites
- Frequency of usage
- Drivers for Online Trading
- Reach of Market
- Speed
- Necessity
- Cost

- How much people are currently spending
- Willingness of businesses to go for Online trading and advertising
- Products

- Categories of Products for online Trading
- Sale of Overstock / Existing Products
- Quality of products
- Convenience
- Reasons for providing services.
- Mode of Delivery
- How long people ready to wait for accepting services.
- Research Challenges
- The challenges that we faced while carrying out the research are :
- Conducting the Survey with the local e-vehicle owners / e-vehicle driver
- Asking owners who are currently not into Online advertising
- Research Limitations

3.1 Requirement Specification

3.1.1 GENERAL DESCRIPTION

Product Description: The system consists of two parts. First part is a android application is for user who use power hub application through which they can scan QR code and make payment. Second part is a web application which is installed in a power hub system through this user can see QR code and timer. They also see their bill and print this.

Problem Statement: As The market for second use EV batteries is poised to grow rapidly as new EV fleet generations go into service. These batteries have a significant amount of residual capacity after their vehicle life has been completed and can be repurposed for various other use case application, e.g. energy storage solutions behind the facility meter.

3.1.2 SYSTEM OBJECTIVES

3.1.2.1 NON FUNCTIONAL REQUIREMENTS

- **EFFICIENCY REQUIREMENT**: When an online e-vehicle charging android application implemented customer can charge their vehicle in an efficient manner.
- **RELIABILITY REQUIREMENT**: The system should provide a reliable environment to both user and administrator. All orders should be reaching at the admin without any errors.
- **USABILITY REQUIREMENT**: The android application is designed for user friendly environment and ease of use.
- **IMPLEMENTATION REQUIREMENT**: Implementation of the system using 1)mobile application: Flutter(using dart language).2) Web application in CSS and HTML in front end with PHP as back end and it will be used for database connectivity. And the database part is developed by MySql. Responsive web designing is used for making the website compatible for any type of screen.

DELIVERY REQUIREMENT: The whole system is expected to be delivered in four months of time with Online Classified of Computer Science.

3.1.2.2 FUNCTIONAL REQUIREMENTS

USER □

- USER LOGIN

Description of feature

This feature used by the user to login into system. A user must login with his user name and password to the system after registration. If they are invalid, the user not allowed to enter the system.

Functional requirement

- Username and password will be provided after user registration is confirmed.
- Password should be hidden from others while typing it in the field.

- **REGISTER NEW USER**

Description of feature

A new user will have to register in the system by providing essential details in order to view the products in the system. The admin must accept a new user by unblocking him.

Functional requirement

- System must be able to verify and validate information.
- The system must encrypt the password of the user to provide security.

ADMIN □

- **MANAGE USER**

Description of feature

The administrator can add user, delete user, view user and block user.

- MANAGE MODERATOR

Description of feature

The administrator can add moderator, delete moderator, block moderator and search for a moderator.

- MANAGE PRODUCTS

Description of feature

The administrator can add product, delete product and view product.

- MANAGE DETAILS

Description of feature

The administrator can view details and delete details.

- **Functional requirements**
  - The system must identify the login of the admin.
  - Admin account should be secured so that only owner can access that account.

Technology Used

- FLUTTER

Flutter is a free and open-source mobile UI framework created by Google and released in May 2017. In a few words, it allows you to create a native mobile application with only one codebase. This means that you can use one programming language and one codebase to create two different apps (for iOS and Android).

Flutter consists of two important parts:

- An SDK (Software Development Kit): A collection of tools that are going to help you develop your applications. This includes tools to compile your code into native machine code (code for iOS and Android).
- A Framework (UI Library based on widgets): A collection of reusable UI elements (buttons, text inputs, sliders, and so on) that you can personalize for your own needs.

To develop with Flutter, you will use a programming language called Dart. The language was created by Google in October 2011, but it has improved a lot over these past years.

Dart focuses on front-end development, and you can use it to create mobile and web applications.

If you know a bit of programming, Dart is a typed object programming language. You can compare Dart's syntax to JavaScript.

“Flutter is Google’s UI toolkit for building beautiful, natively compiled applications for mobile, web, and desktop from a single codebase.” - Google, flutter.dev

➢ HTML

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web.[4]

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <img /> and <input /> directly introduce content into the page. Other tags such as <p> surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

- **CSS**

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language like HTML.[1] CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts.[3] This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, and reduce complexity and repetition in the structural content.

Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech-based browser or screen reader), and on Braille-based tactile devices. CSS also has rules for alternate formatting if the content is accessed on a mobile device.

The name cascading comes from the specified priority scheme to determine which style rule applies if more than one rule matches a particular element. This cascading priority scheme is predictable.

The CSS specifications are maintained by the World Wide Web Consortium (W3C). Internet media type (MIME type) text/css is registered for

use with CSS by RFC 2318 (March 1998). The W3C operates a free CSS validation service for CSS documents.

In addition to HTML, other markup languages support the use of CSS including XHTML, plain XML, SVG, and XUL.

- **JavaScript**

JavaScript often abbreviated as JS, is a high-level, interpreted programming language that conforms to the ECMAScript specification. JavaScript has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions.

Alongside HTML and CSS, JavaScript is one of the core technologies of the World Wide Web. JavaScript enables interactive web pages and is an essential part of web applications. The vast majority of websites use it,[10] and major web browsers have a dedicated JavaScript engine to execute it.

As a multi-paradigm language, JavaScript supports event-driven, functional, and imperative (including object-oriented and prototype-based) programming styles. It has APIs for working with text, arrays, dates, regular expressions, and the DOM, but the language itself does not include any I/O, such as networking, storage, or graphics facilities. It relies upon the host environment in which it is embedded to provide these features.

Initially only implemented client-side in web browsers, JavaScript engines are now embedded in many other types of host software, including server-side in web servers and databases, and in non-web programs such as word processors and PDF software, and in run time environments that make JavaScript available for writing mobile and desktop applications, including desktop widgets.

The terms Vanilla JavaScript and Vanilla JS refer to JavaScript not extended by any frameworks or additional libraries. Scripts written in Vanilla JS are plain JavaScript code.

Although there are similarities between JavaScript and Java, including language name, syntax, and respective standard libraries, the two languages

are distinct and differ greatly in design. JavaScript was influenced by programming languages such as Self and Scheme.

- **PHP**

  PHP : Hypertext Preprocessor (or simply PHP) is a general-purpose programming language originally designed for web development. It was originally created by Rasmus Lerdorf in 1994, the PHP reference implementation is now produced by The PHP Group. PHP originally stood for Personal Home Page, but it now stands for the recursive initialism PHP: Hypertext Preprocessor.

  PHP code may be executed with a command line interface (CLI), embedded into HTML code, or it can be used in combination with various web template systems, web content management systems, and web frameworks. PHP code is usually processed by a PHP interpreter implemented as a module in a web server or as a Common Gateway Interface (CGI) executable. The web server combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page. PHP can be used for many programming tasks outside of the web context, such as standalone graphical applications and robotic drone control.

  The standard PHP interpreter, powered by the Zend Engine, is free software released under the PHP License. PHP has been widely ported and can be deployed on most web servers on almost every operating system and platform, free of charge.[10]

  The PHP language evolved without a written formal specification or standard until 2014, with the original implementation acting as the de facto standard which other implementations aimed to follow. Since 2014, work has gone on to create a formal PHP specification.

PHP 7

During 2014 and 2015, a new major PHP version was developed, which was numbered PHP 7. The numbering of this version involved some debate. While the PHP 6 Unicode experiment had never been released, several articles and book titles referenced the PHP 6 name, which might have caused confusion if a new release were to reuse the name. After a vote, the name PHP 7 was chosen.

The foundation of PHP is a PHP branch that was originally dubbed PHP next generation (php). It was authored by Dmitry Stogov,

Xinchen Hui and Nikita Popov and aimed to optimize PHP performance by refactoring the Zend Engine while retaining near-complete language compatibility. As of 14 July 2014, WordPress-based benchmarks, which served as the main benchmark suite for the phpng project, showed an almost 100% increase in performance. Changes from phpng are also expected to make it easier to improve performance in the future, as more compact data structures and other changes are seen as better suited for a successful migration to a just-in-time (JIT) compiler. Because of the significant changes, the reworked Zend Engine is called Zend Engine 3, succeeding Zend Engine 2 used in PHP 5.

Because of major internal changes in phpng it must receive a new major version number of PHP, rather than a minor PHP 5 release, according to PHP's release process.[50] Major versions of PHP are allowed to break backward-compatibility of code and therefore PHP 7 presented an opportunity for other improvements beyond phpng that require backward-compatibility breaks.

w3 css

w3css is one of css frameworks in the design field like twitter bootstrap and many CSS Framework is defined as a package made up of a structure of files and folders of standardized code (HTML, CSS, JS documents) that can be used for all front end development

Many of front end companies created own frameworks and make it open source. the example twitter creates open source css framework called Bootstrap and BBC having Burlesque frameworks..

Few of the css frameworks are as follows

1. Bootstrap
2. Foundation
3. Skeleton
4. 960 Grid System
5. Susy
6. YAML

➢ MySql

MySQL is an open-source relational database management system (RDBMS).[6] Its name is a combination of "My", the name of co-founder Michael Widenius's daughter,[7] and "SQL", the abbreviation for Structured Query Language.

MySQL is free and open-source software under the terms of the GNU General Public License, and is also available under a variety of proprietary licenses. MySQL was owned and sponsored by the Swedish company MySQL AB, which was bought by Sun Microsystems (now Oracle Corporation).[8] In 2010, when Oracle acquired Sun, Widenius forked the open-source MySQL project to create MariaDB.

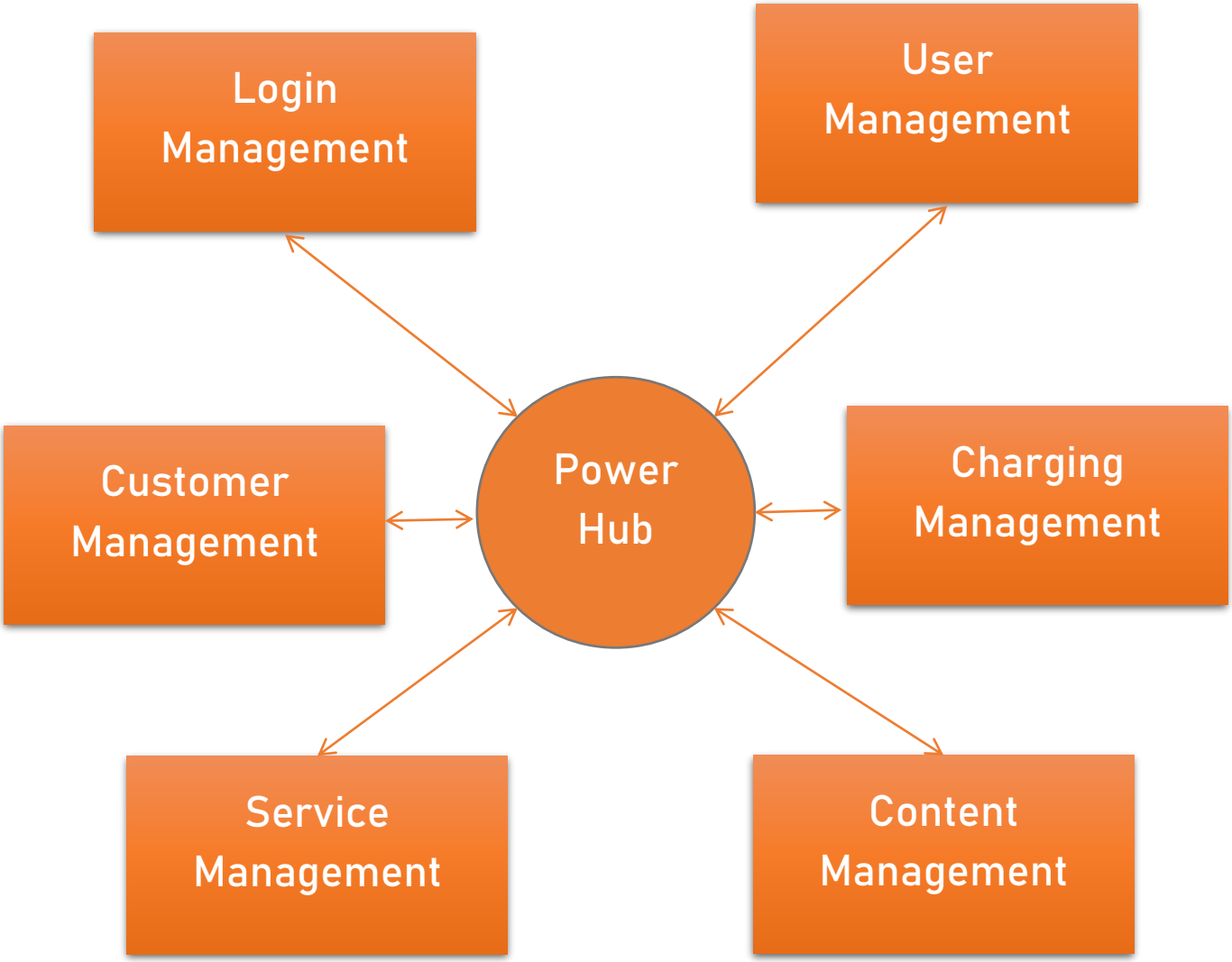
MySQL is a component of the LAMP web application software stack (and others), which is an acronym for Linux, Apache, MySQL, Perl/PHP/Python. MySQL is used by many database-driven web applications, including Drupal, Joomla, phpBB, and WordPress. MySQL is also

used by many popular websites, including Facebook, Twitter, Flickr and YouTube.

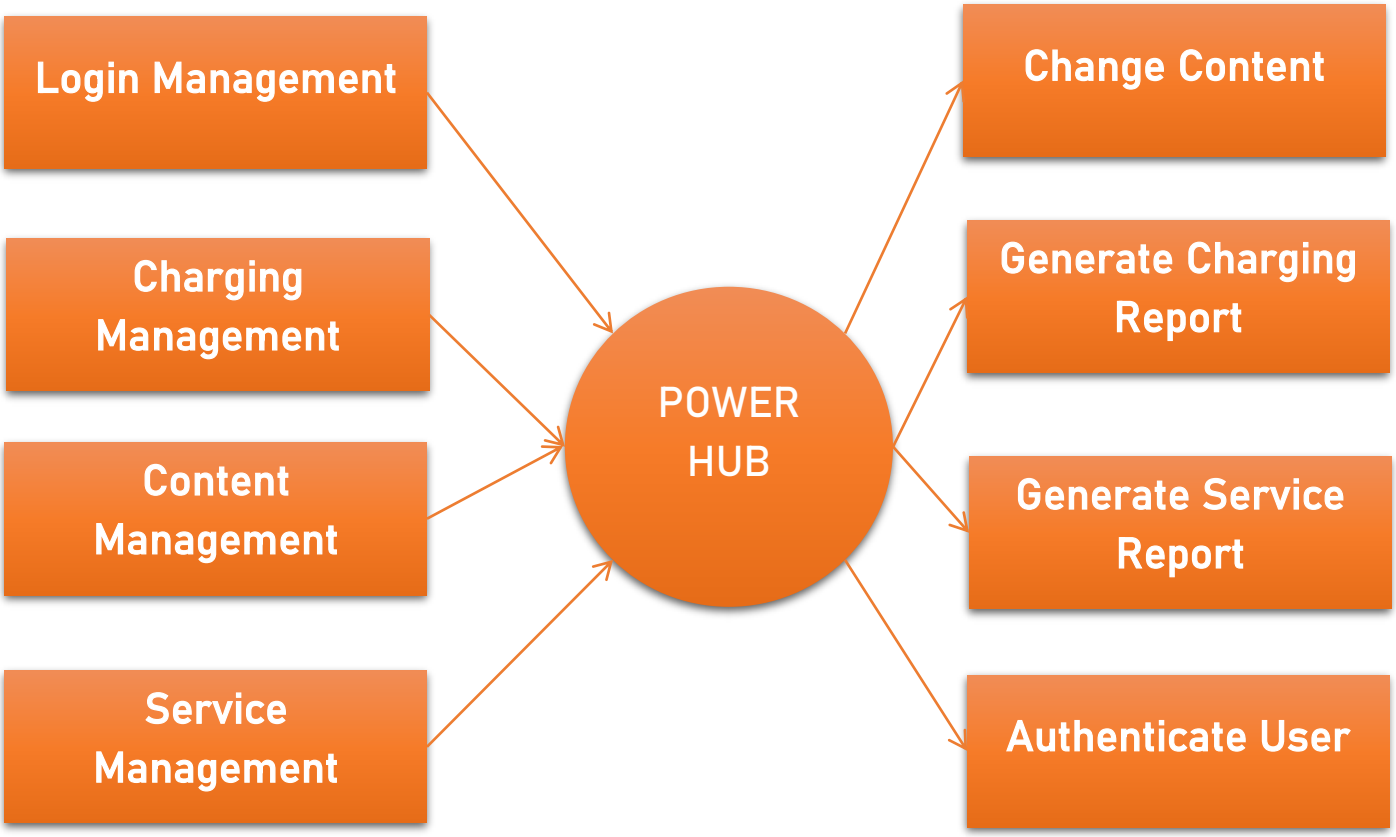
MySQL is written in C and C++. Its SQL parser is written in yacc, but it uses a home-brewed lexical analyzer. MySQL works on many system platforms, including AIX, BSDi, FreeBSD, HP, UX, eComStation, i5/OS, IRIX, Linux, macOS, MicrosoftWindows,NetBSD,Novell NetWare, OpenBSD, OpenSolaris, OS/2Warp,QNX, Oracle Solaris, Symbian, SunOS, SCO OpenServer, SCO UnixWare, Sanos and Tru64. A port of MySQL to OpenVMS also exists.

3.2 DFD And Flow Chart

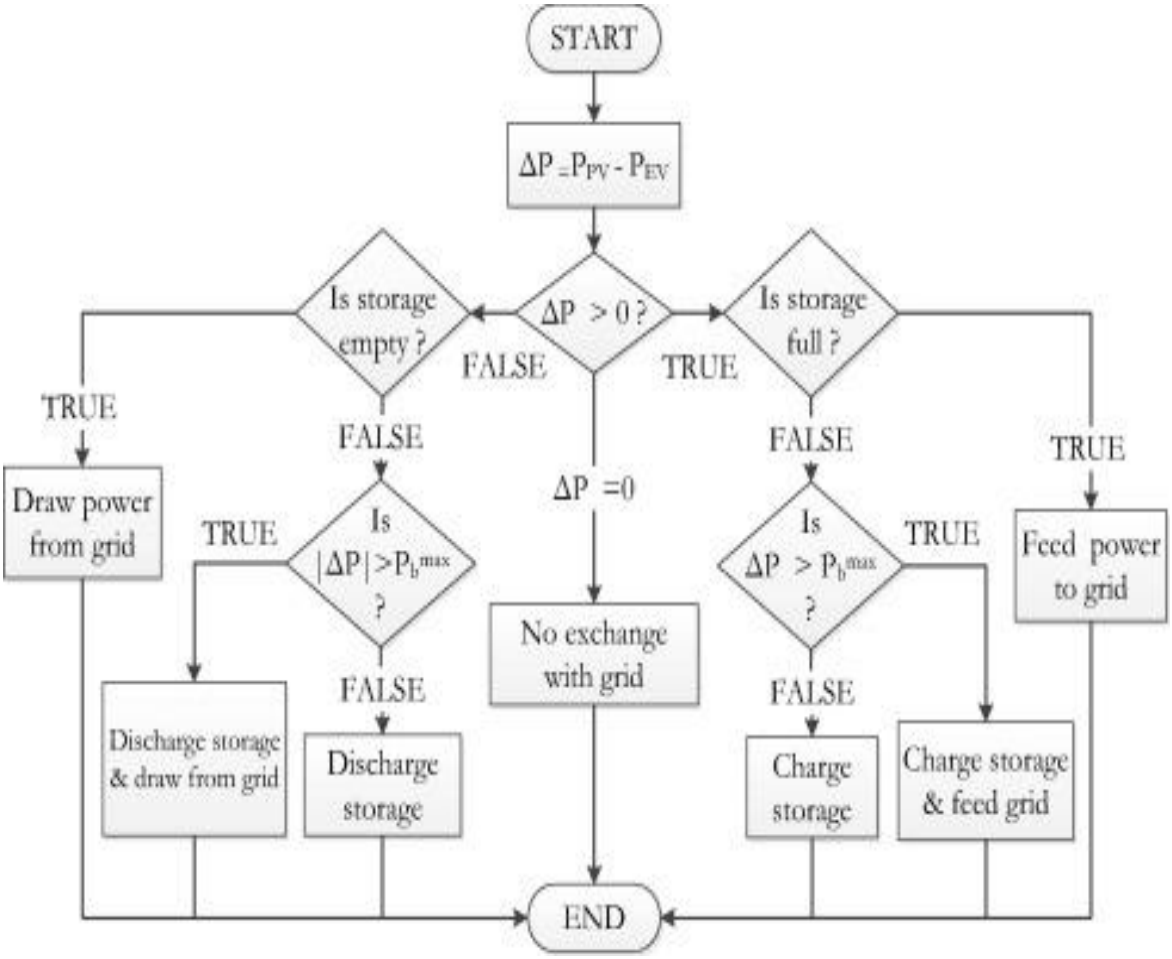
3.2.1 Zero Level DFD



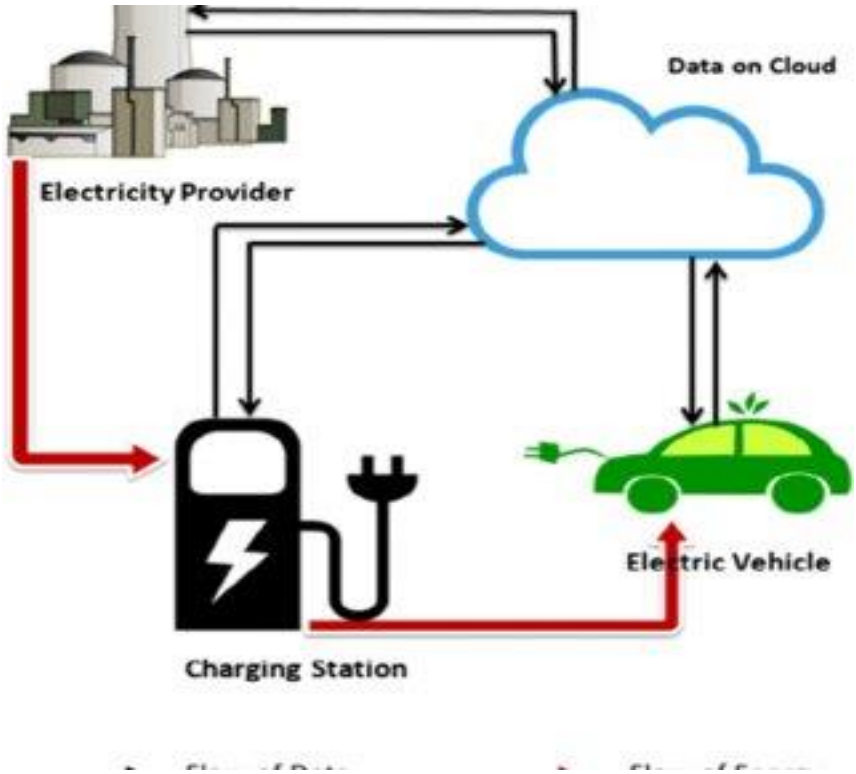
3.2.2 First Level DFD



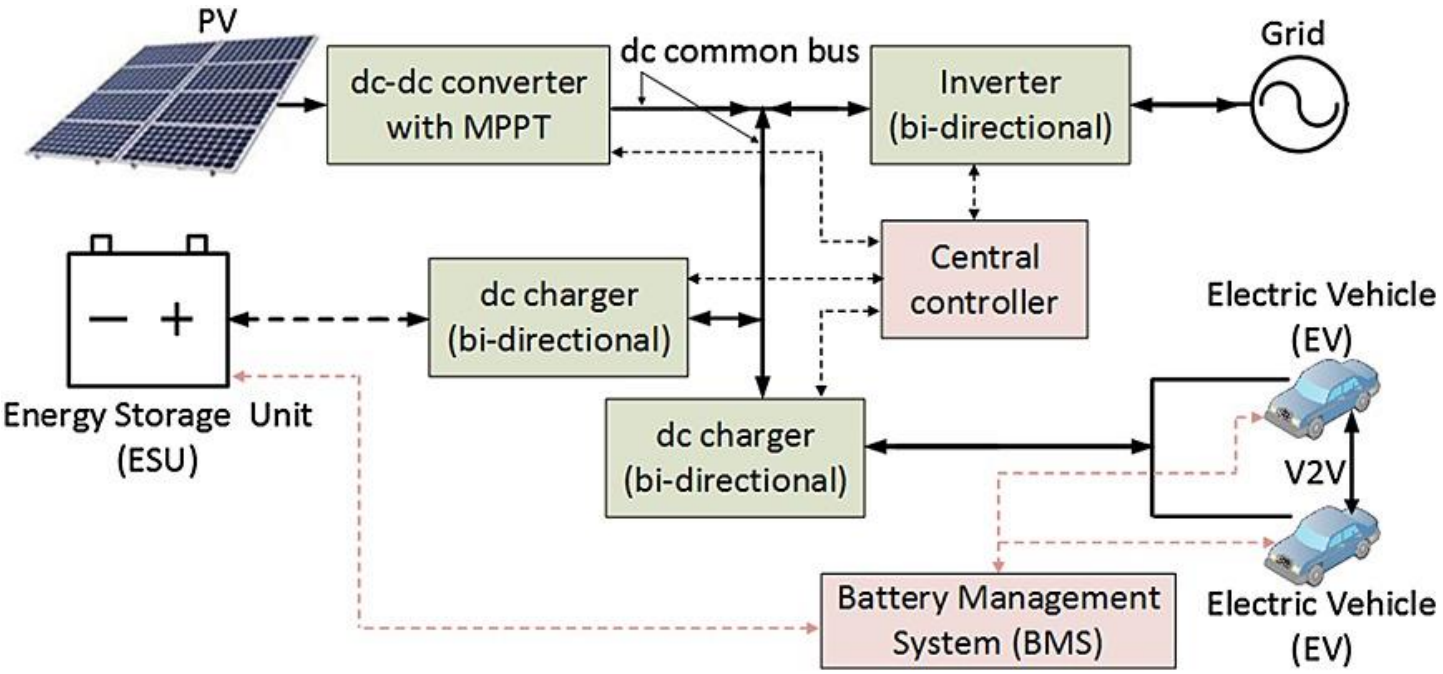
3.2.3 Flow Chart



3.2.4 Basic Design



3.2.5 Backup System Design



3.2.6 Tables of User

USER TABLE	
Column Name	**Data Type**
User_id	INT
User_name	VARCHAR
User_email	VARCHAR
User_mobile	INT
User_password	VARCHAR

3.2.7 Tables of Admin

ADMIN TABLE	
Column Name	**Data Type**
admin_id	INT
admin_name	VARCHAR
admin_email	VARCHAR
admin_mobile	INT
admin_password	VARCHAR

3.2.8 Tables of Power Hub System

POWER HUB SYSTEM TABLE	

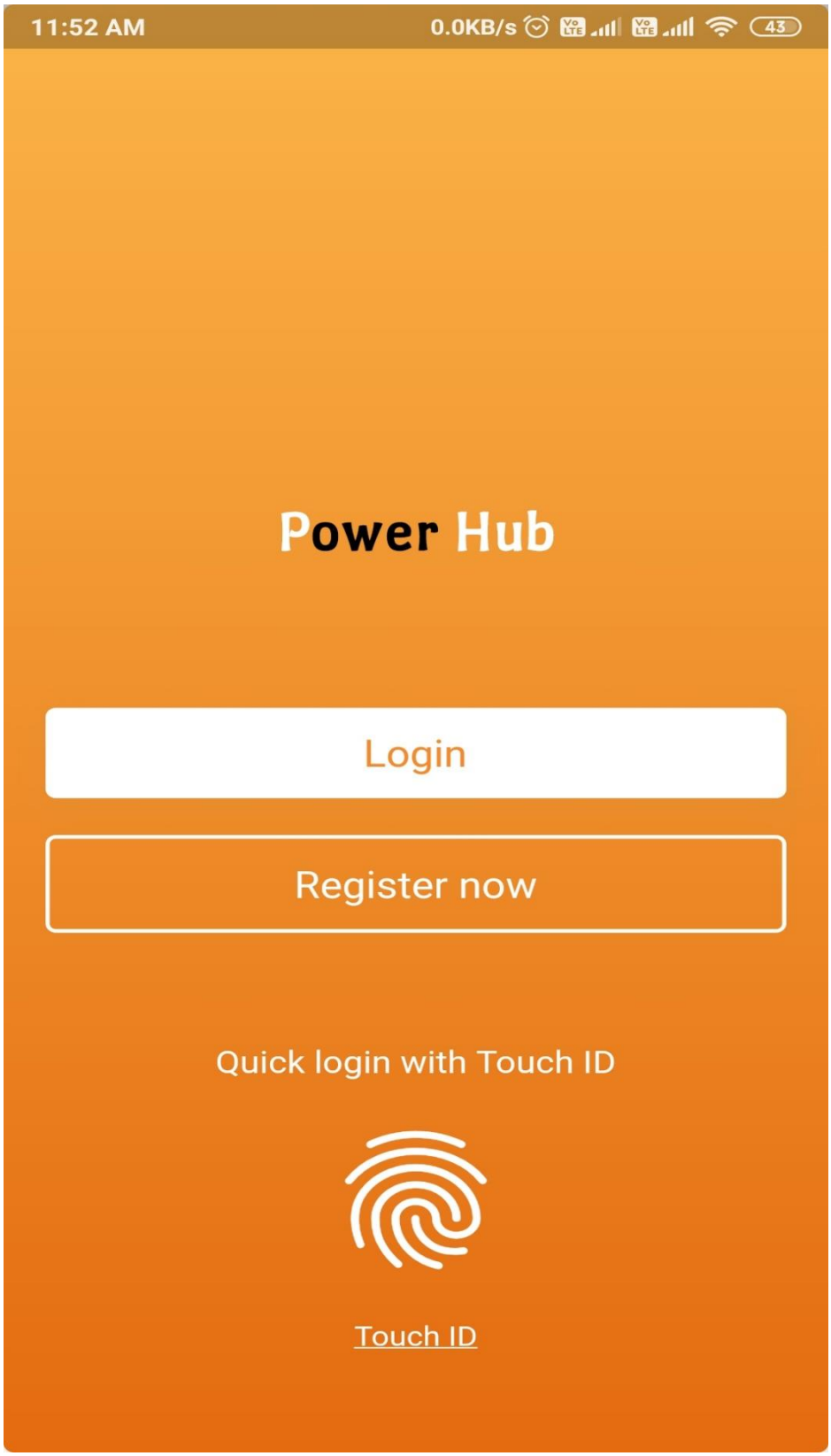
Column Name	Data Type
User_id	INT
User_bill	VARCHAR
User_timer	INT
User_date&time	INT
User_payment_data	INT

3.3 Design

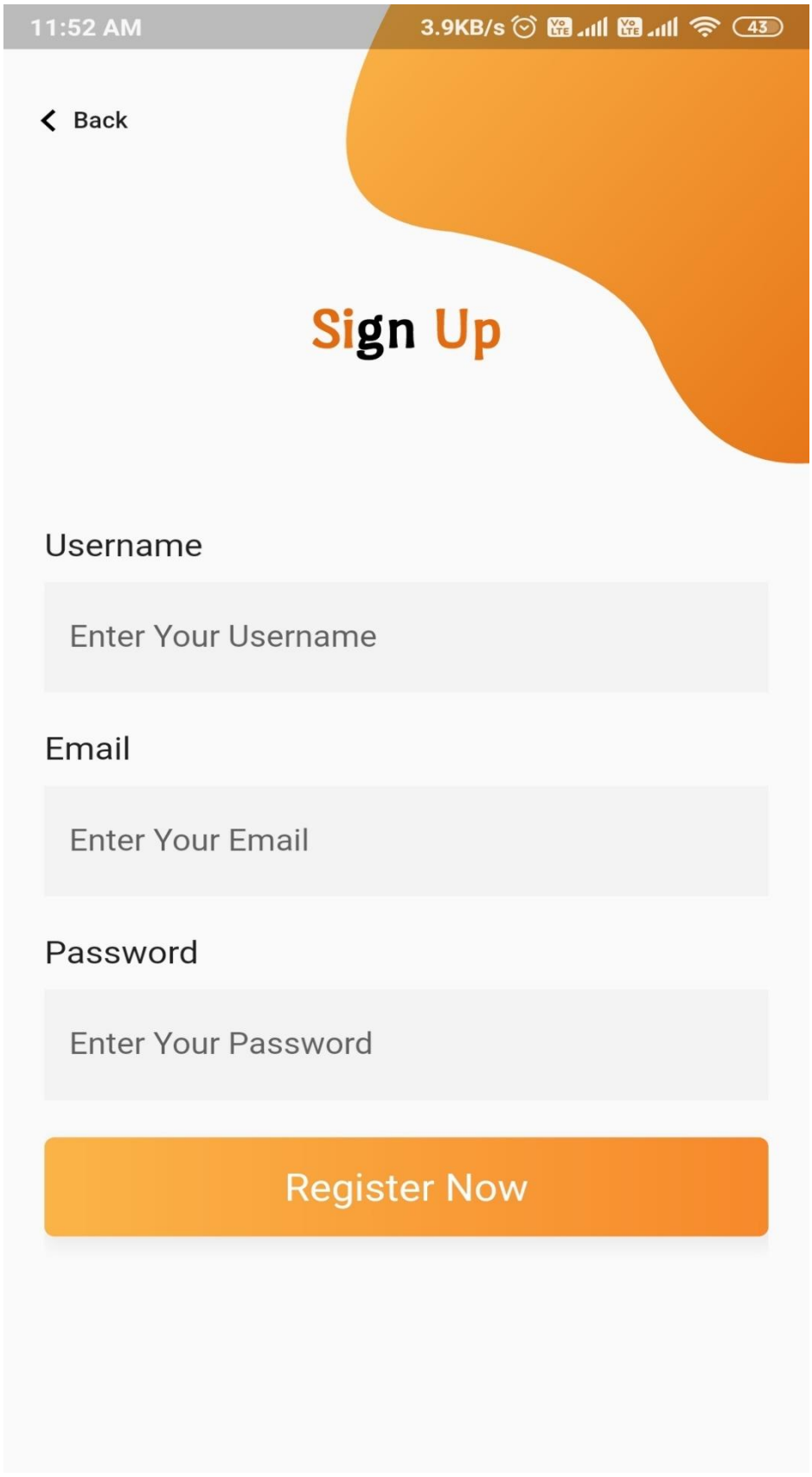
3.3.1 Power Hub Mobile Application Screen shots

Splash Screen

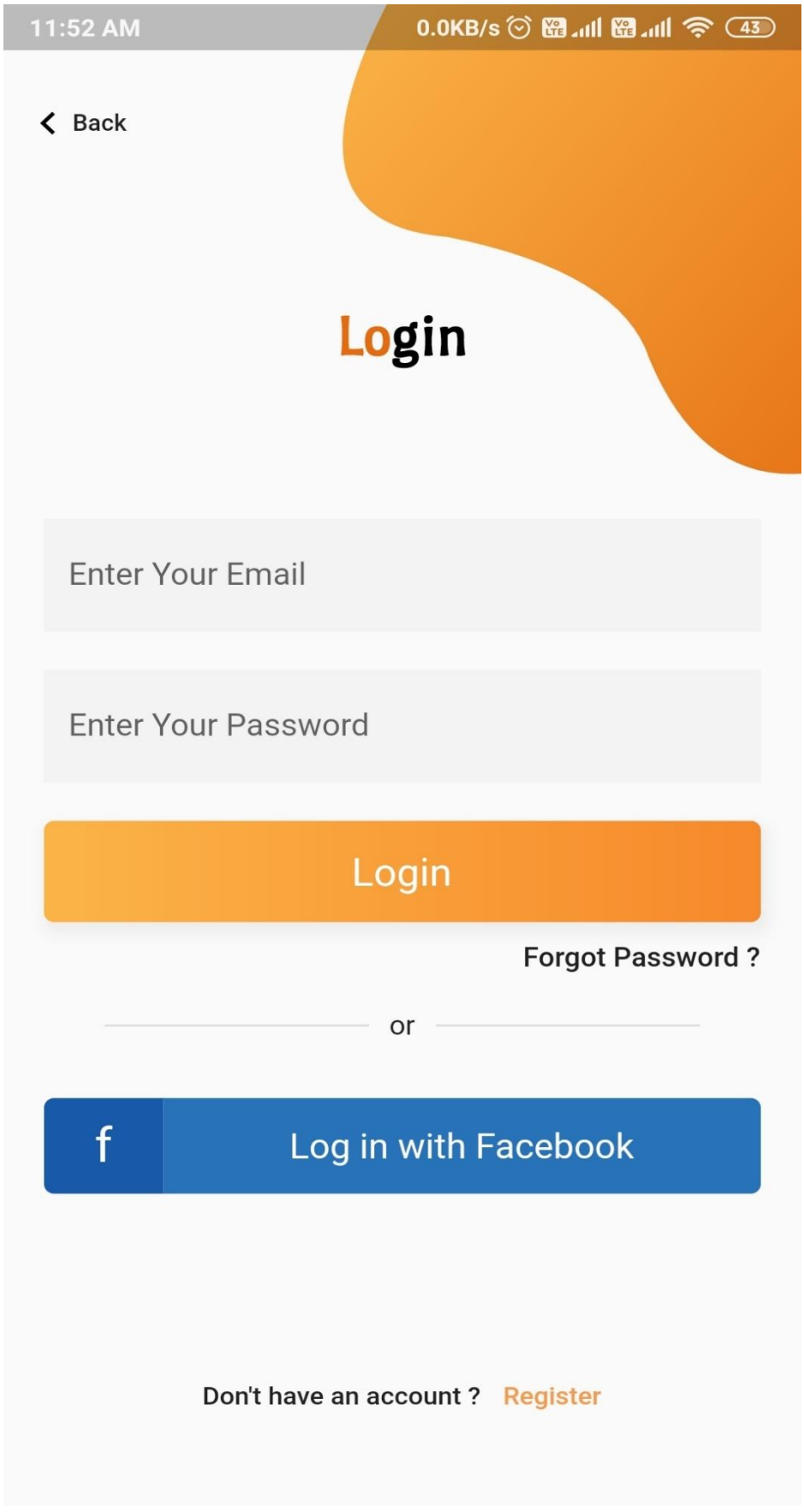
Login & Signup Screen



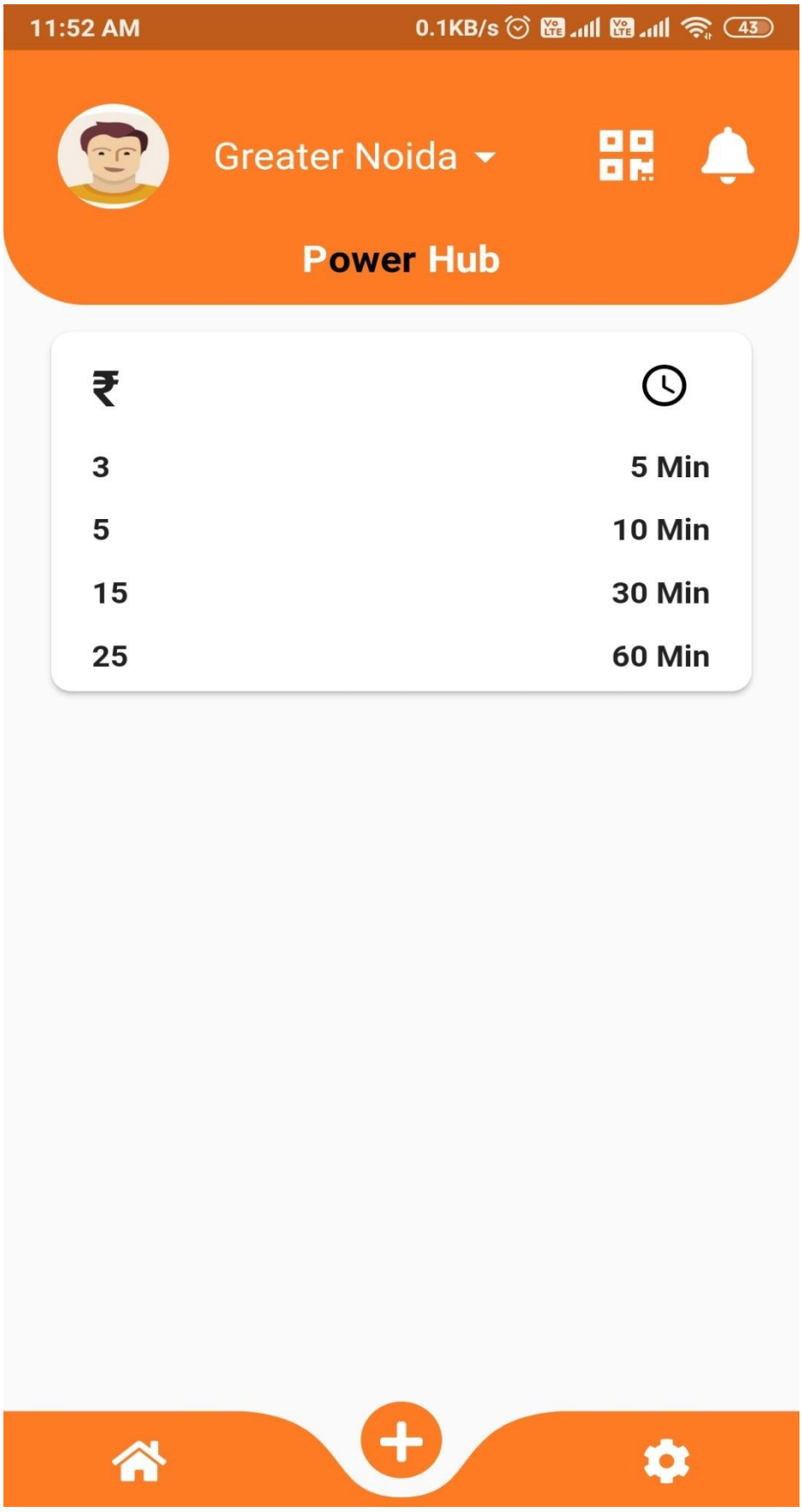
SignUp Screen



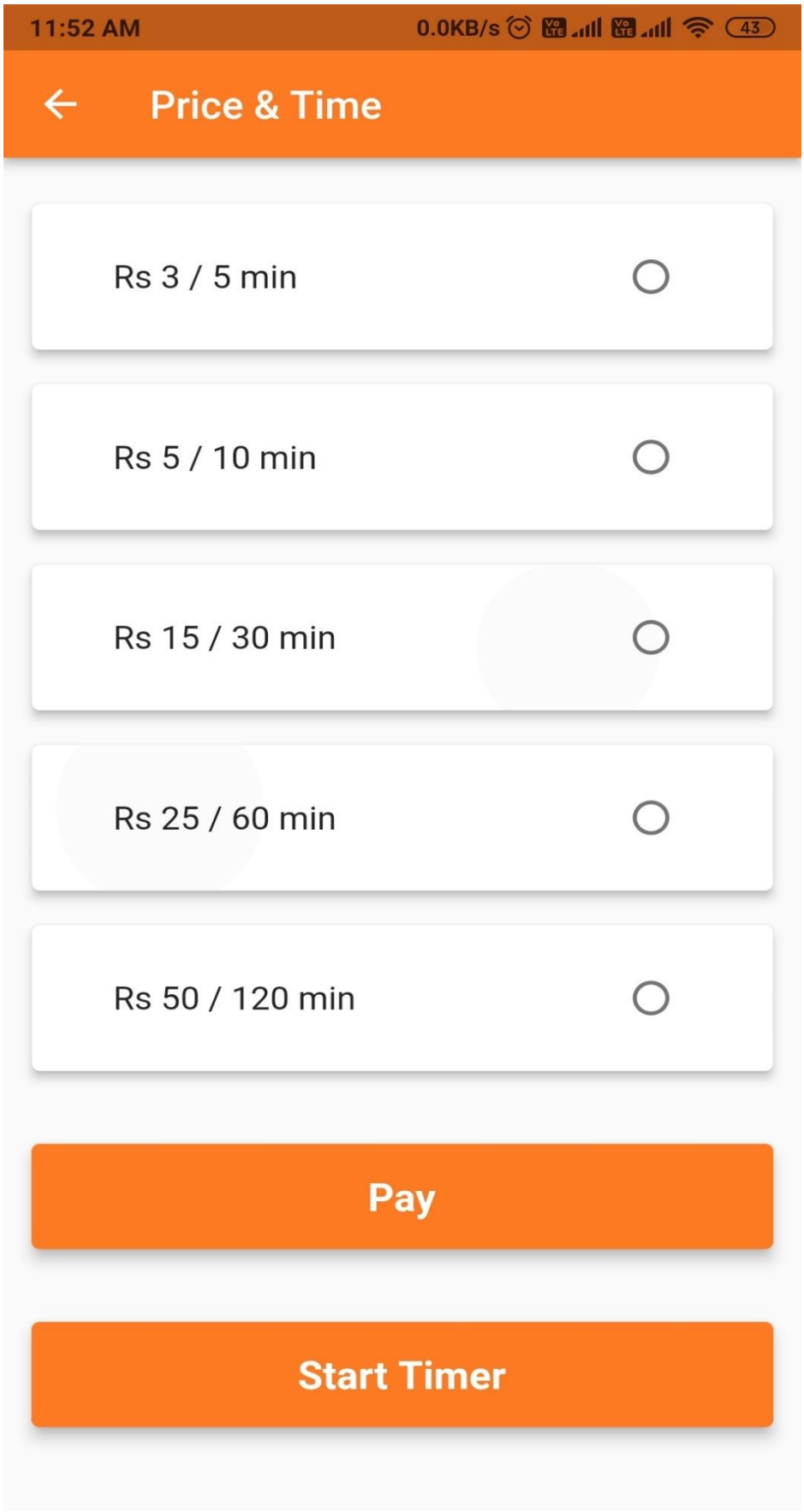
Login Screen



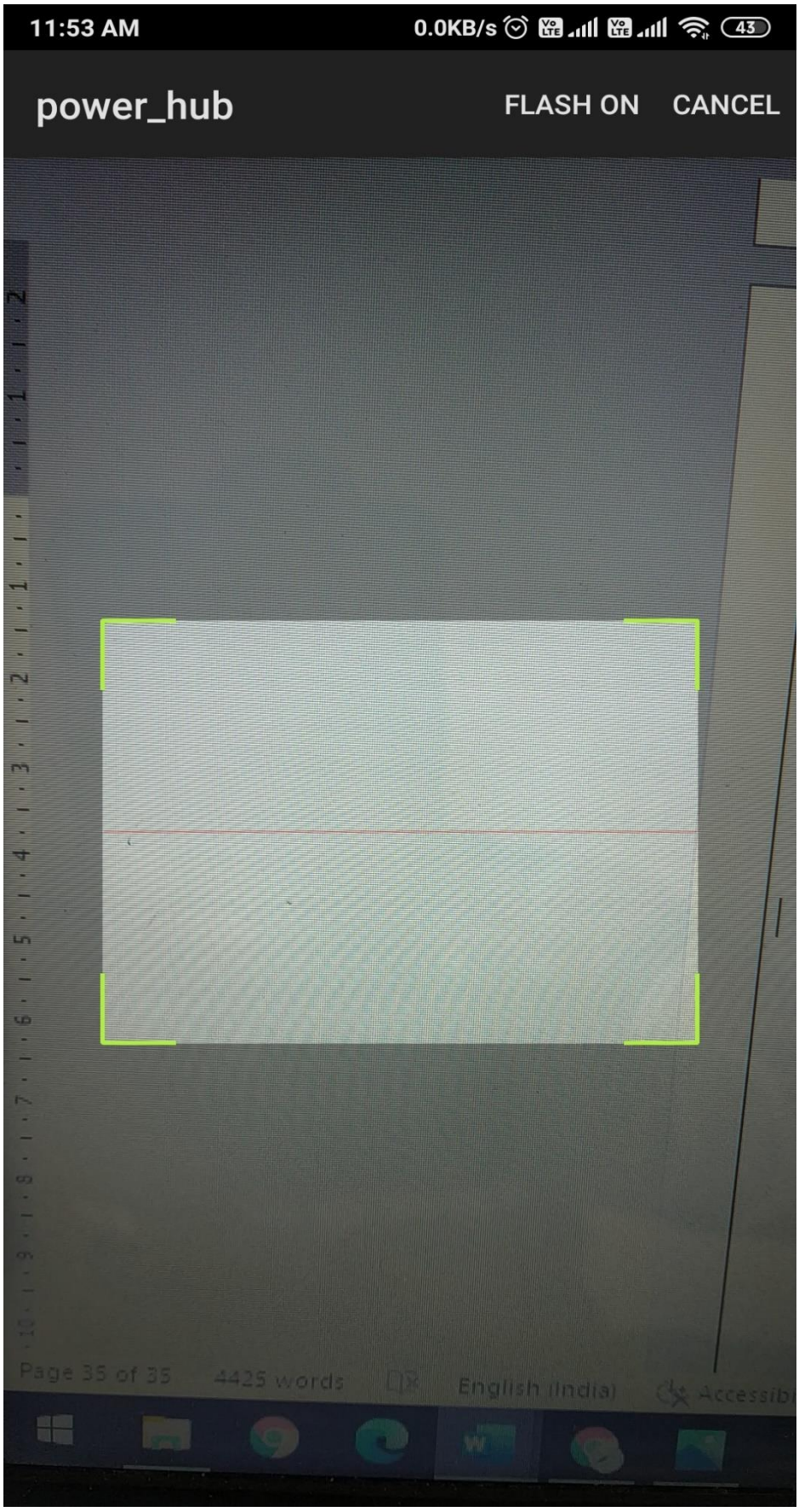
Home Screen


11:52 AM
0.1KB/s
Greater Noida
Power Hub
₹
3
5 Min
5
10 Min
15
30 Min
25
60 Min

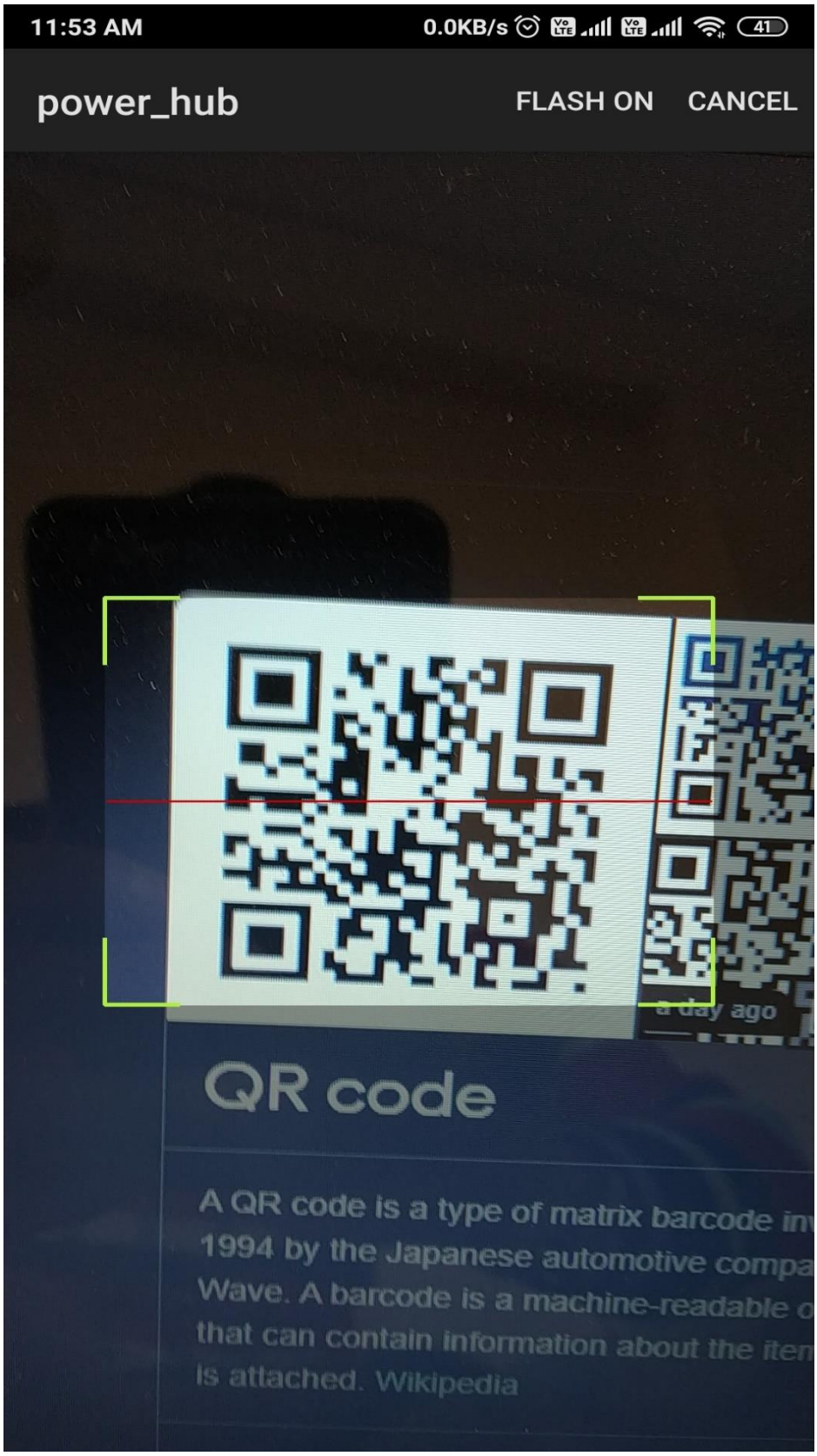
Payment Screen



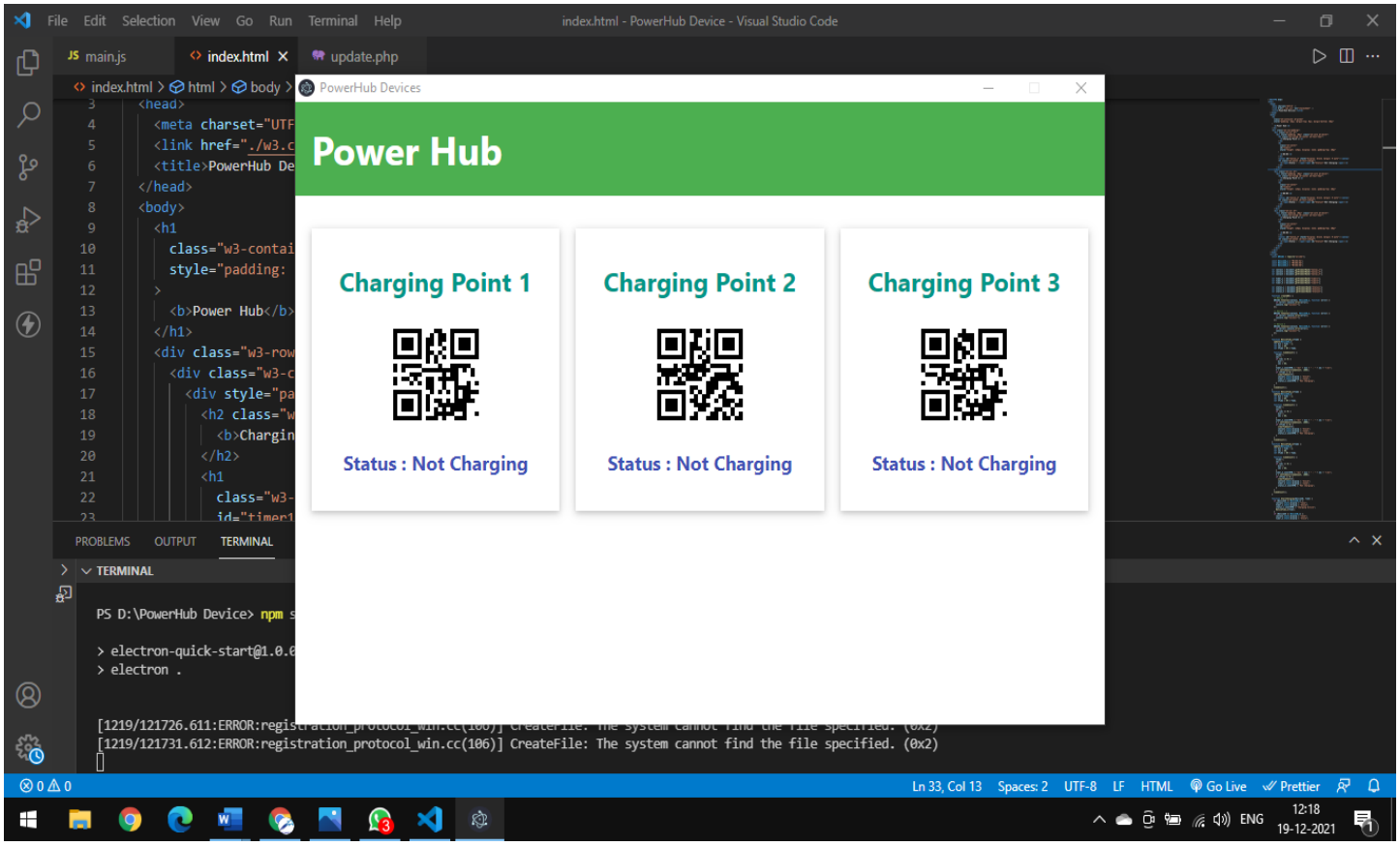
QR Code Scanner Screen



QR Code Scanning Screen



3.3.2 Power Hub System Application Screen shots



3.4 Pseudo Code

➢ SQL Code for Table Creation

```
CREATE TABLE MyGuests (
id INT(6) UNSIGNED AUTO_INCREMENT PRIMARY KEY,
firstname VARCHAR(30) NOT NULL,
lastname VARCHAR(30) NOT NULL,
email VARCHAR(50),
reg_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP
)
```

➢ PHP Code for Database Connectivity

Example (MySQLi Object-Oriented)

```php
<?php
$servername = "localhost";
$username = "username";
$password = "password";

// Create connection
$conn = new mysqli($servername, $username, $password);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
echo "Connected successfully";
?>
```

➢ PHP Code for Inserting Data in Table

Example (MySQLi Object-oriented)

```php
<?php
$servername = "localhost";
$username = "username";
$password = "password";
$dbname = "myDB";

// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

$sql = "INSERT INTO MyGuests (firstname, lastname, email)
VALUES ('John', 'Doe', 'john@example.com')";

if ($conn->query($sql) === TRUE) {
    echo "New record created successfully";
} else {
    echo "Error: " . $sql . "<br>" . $conn->error;
}

$conn->close();
?>
```

➢ PHP Code for Updating Data in Table

Example (MySQLi Object-oriented)

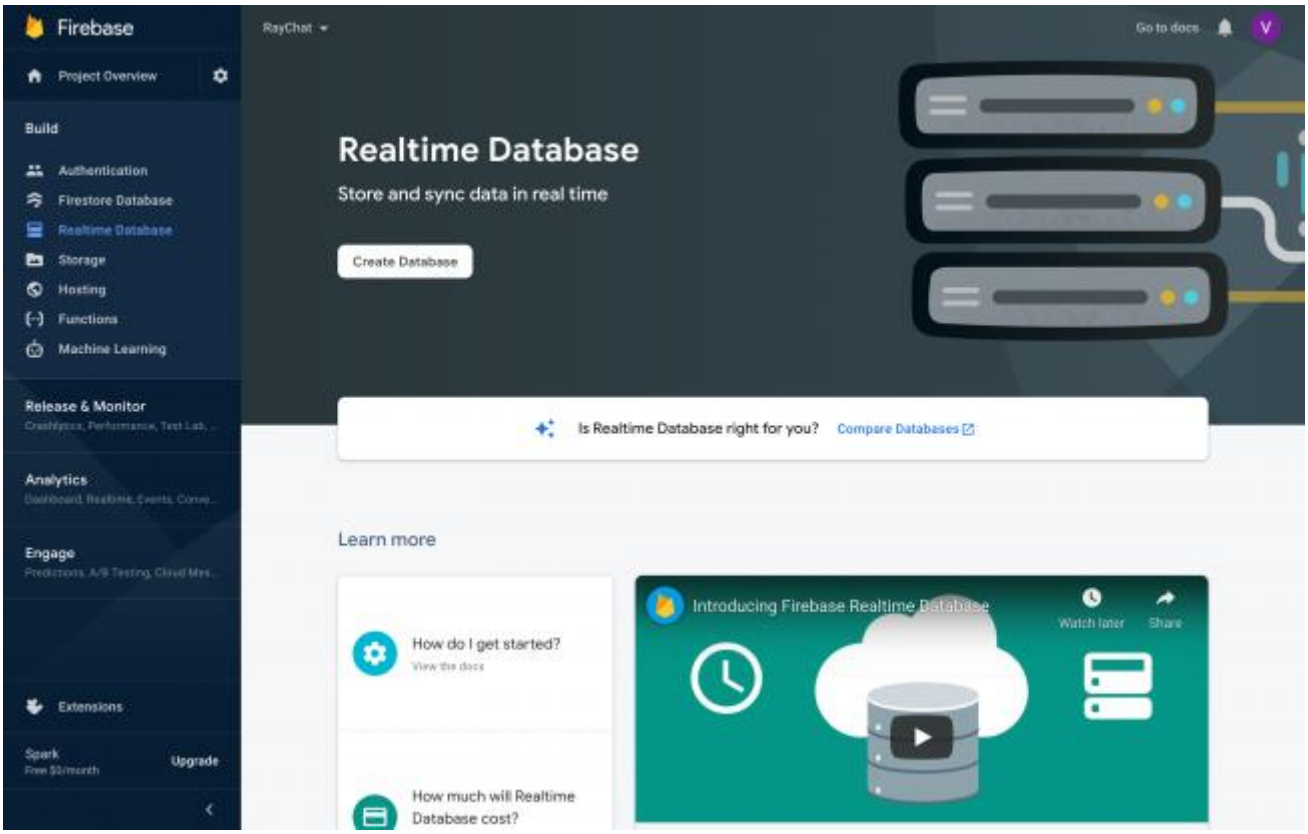
```php
<?php
$servername = "localhost";
$username = "username";
$password = "password";
$dbname = "myDB";

// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

$sql = "UPDATE MyGuests SET lastname='Doe' WHERE id=2";

if ($conn->query($sql) === TRUE) {
    echo "Record updated successfully";
} else {
    echo "Error updating record: " . $conn->error;
}

$conn->close();
?>
```

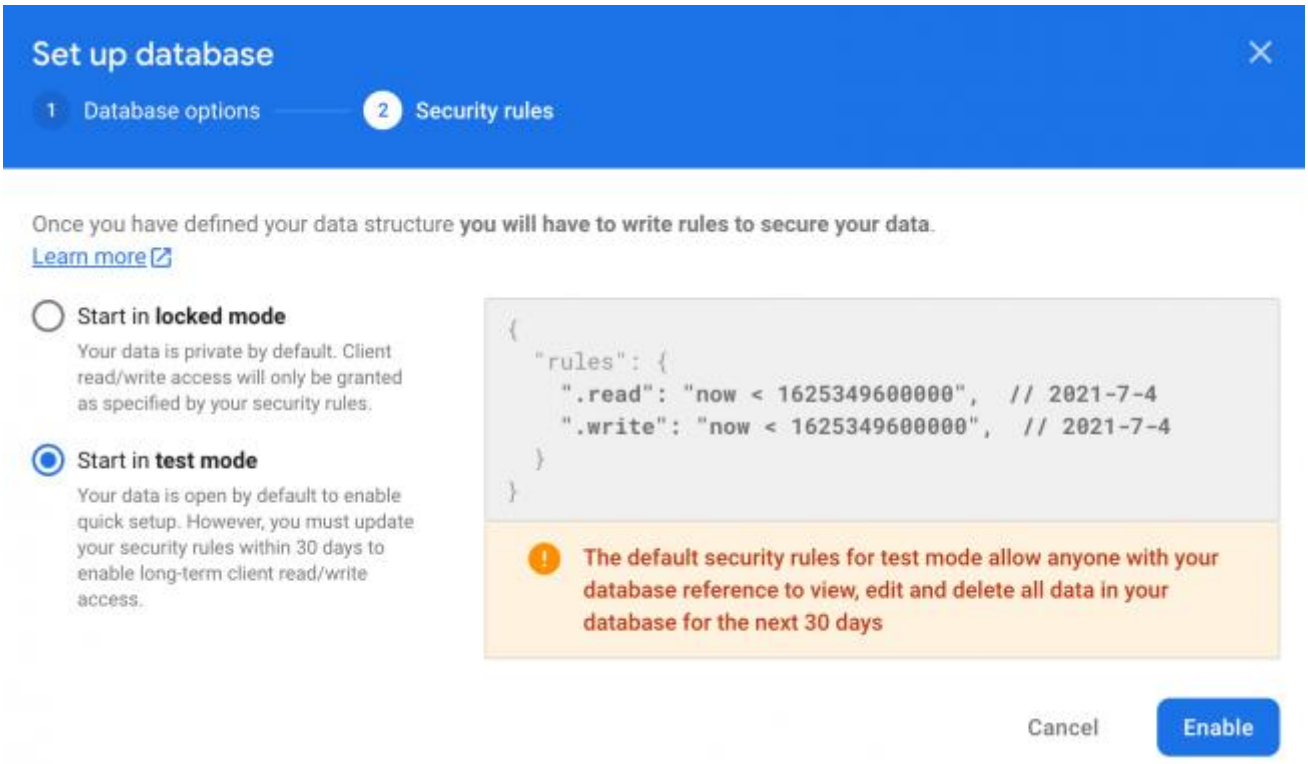
➢ PHP Code for Deleting Data from Table

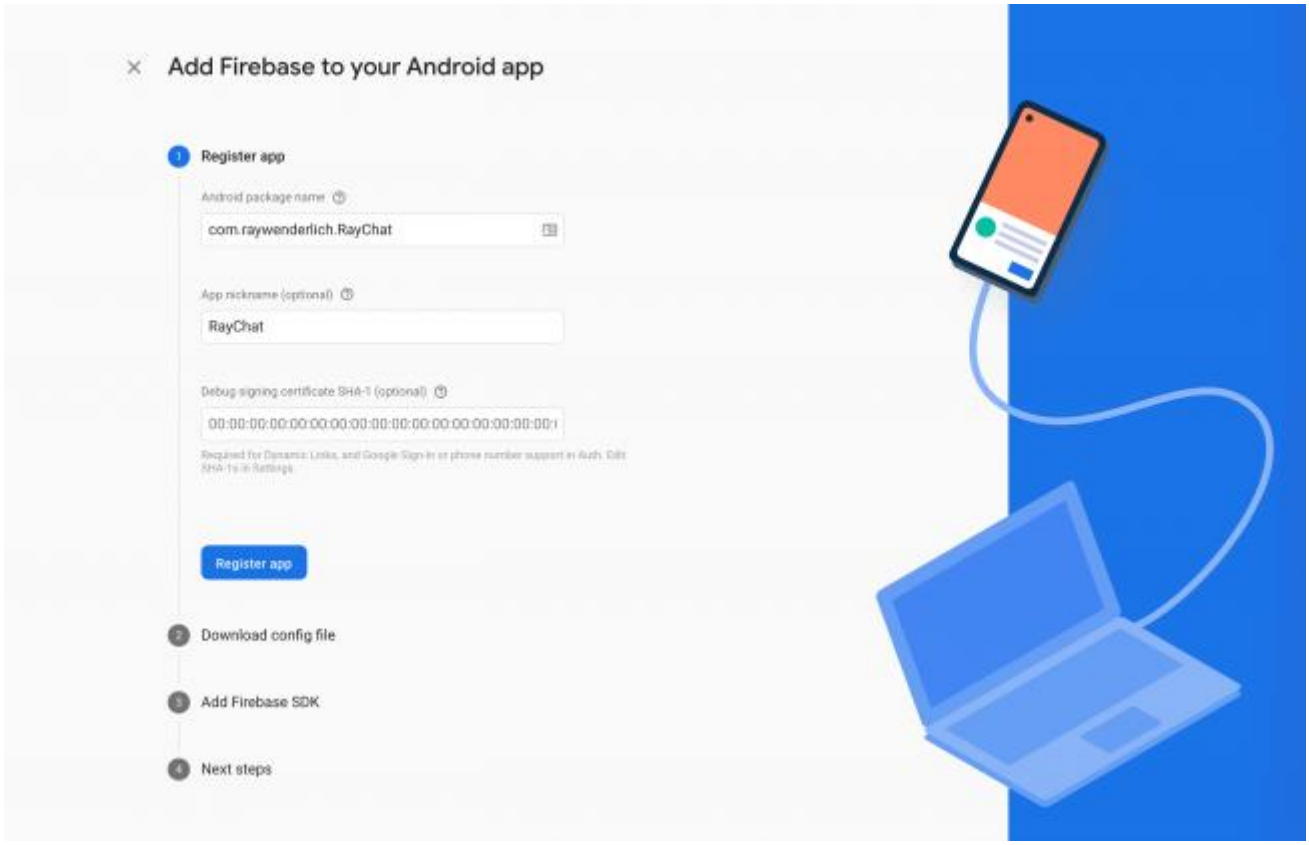
Example (MySQLi Object-oriented)

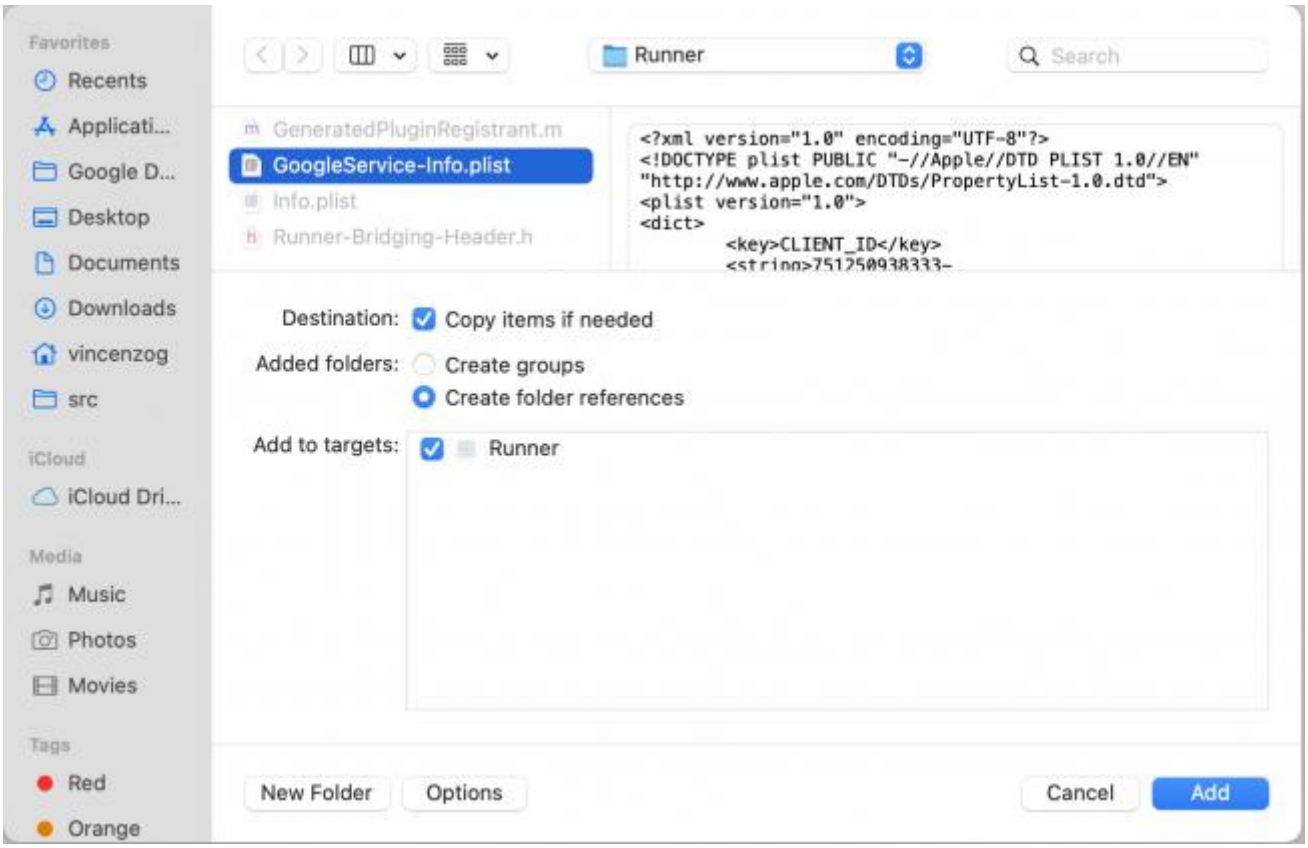
```php
<?php
$servername = "localhost";
$username = "username";
$password = "password";
$dbname = "myDB";

// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

// sql to delete a record
$sql = "DELETE FROM MyGuests WHERE id=3";

if ($conn->query($sql) === TRUE) {
    echo "Record deleted successfully";
} else {
    echo "Error deleting record: " . $conn->error;
}

$conn->close();
?>
```

➢ Firebase Realtime Database (For Mobile App.)






Add Firebase to your Android app
Register app
Android package name
com.raywenderlich.RayChat
App nickname (optional)
RayChat
Debug signing certificate SHA-1 (optional)
Register app
Download config file
Add Firebase SDK
Next steps


Favorites
Recents
Applicati...
Google D...
Desktop
Documents
Downloads
vincenzog
src
iCloud
iCloud Dri...
Media
Music
Photos
Movies
Tags
Red
Orange
Runner
Search
GeneratedPluginRegistrant.m
GoogleService-Info.plist
Info.plist
Runner-Bridging-Header.h
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN"
"http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<plist version="1.0">
<dict>
<key>CLIENT_ID</key>
Destination:
Copy items if needed
Added folders:
Create groups
Create folder references
Add to targets:
Runner
New Folder
Options
Cancel
Add

Real-time Database Example

```
import 'package:firebase/firebase.dart';

void main() {
  initializeApp(
    apiKey: "YourApiKey",
    authDomain: "YourAuthDomain",
    databaseURL: "YourDatabaseUrl",
    projectId: "YourProjectId",
    storageBucket: "YourStorageBucket");

  Database db = database();
  DatabaseReference ref = db.ref('messages');

  ref.onValue.listen((e) {
    DataSnapshot datasnapshot = e.snapshot;
    // Do something with datasnapshot
  });
}
```

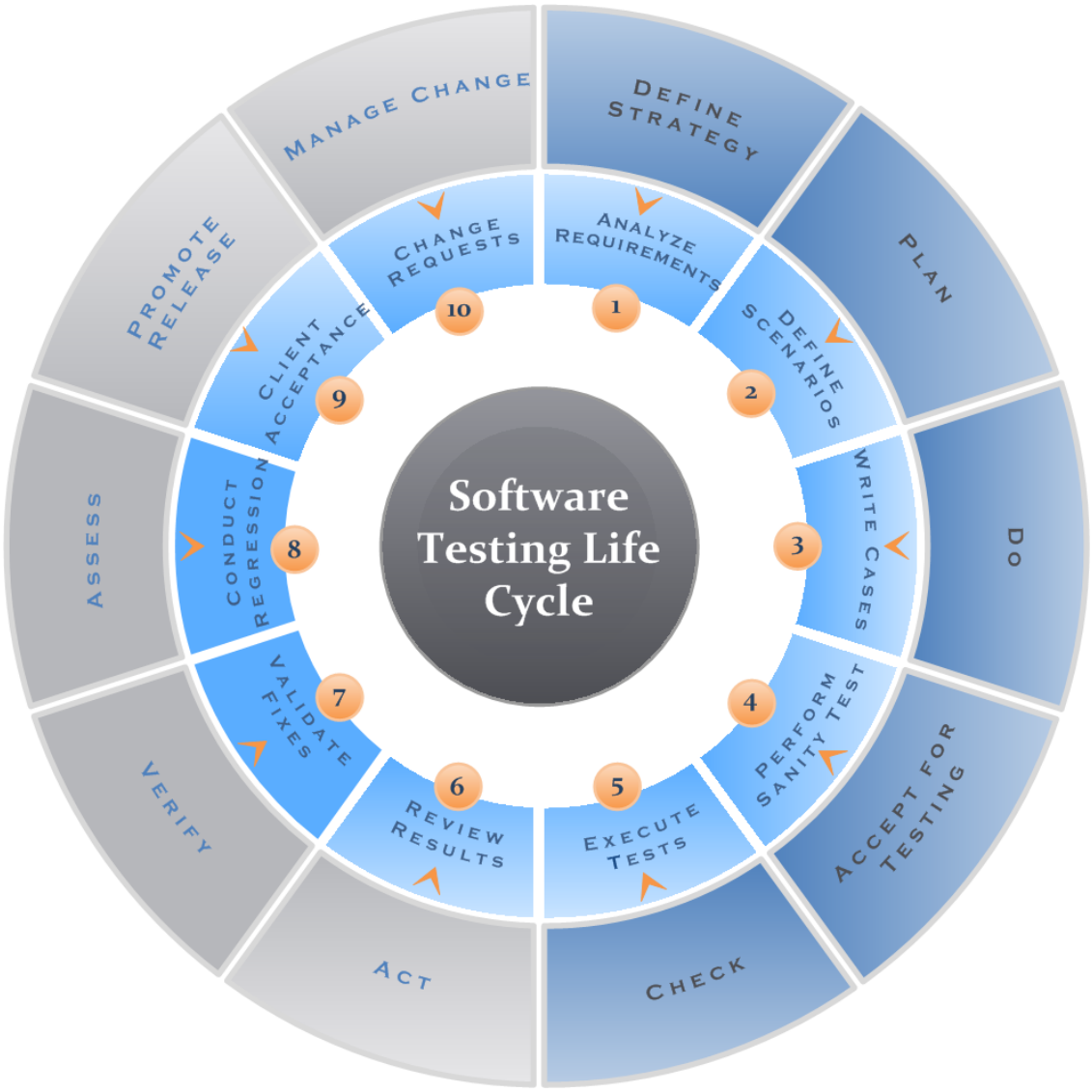
Database tests and example

Database tests and example need to have **public rules** to be able to read and write to database. Update your rules in Firebase console, `Database/Realtime Database/Rules` section to:

```
{
  "rules": {
    ".read": true,
    ".write": true
  }
}
```

3.5 TESTING PROCESS

The internet defines Software Testing as the process of executing a program or application with the intent of identifying bugs. I like to define Testing as the process of validating that a piece of software meets its business and technical requirements. Testing is the primary avenue to check that the built product meets requirements adequately.



1.Test Strategy and Test Plan

Every project needs a Test Strategy and a Test Plan. These artefact describe the scope for testing for a project:

- The systems that need to be tested, and any specific configurations
- Features and functions that are the focus of the project
- Non-functional requirements
- Test approach—traditional, exploratory, automation, etc.—or a mix
- Key processes to follow – for defects resolution, defects triage
- Tools—for logging defects, for test case scripting, for trace-ability
- Documentation to refer, and to produce as output
- Test environment requirements and setup
- Risks, dependencies and contingencies
- Test Schedule
- Approval work flows
- Entry/Exit criteria

And so on… Whatever methodology your project follows, you need to have a Test Strategy and Software Testing Plan in place. Make them two separate documents, or merge them into one.

Without a clear test strategy and a detailed test plan, even Agile projects will find it difficult to be productive. Why, you ask? Well, the act of creating a strategy and plan bring out a number of dependencies that you may not think of otherwise.

For example, if you're building a mobile app, a test strategy will help you articulate what Operating Systems (iOS/Android), OS versions (iOS 7 onwards, Android 4.4 onwards etc.), devices (last three generations of each type of iOS device, specific models of Android devices) you need to test the app for.

Usually, a *Functioning Organization Will Have Nailed Their Device And OS Support Strategy,* And Review It Quarterly to keep up with the market; test managers creating a strategy or plan for their project will help validate the enterprise-wide strategy against project-specific deliverable.

You'd be surprised how many projects have to alter their plan significantly because they hadn't thought enough about support strategy early on.

Among other things, the test plan also helps define entry and exit criteria for testing. This is important as a control for the rest of the team. If the deliverable aren't of a specific level of quality, they won't enter testing; similarly, if the tested code doesn't meet specific

quality standards, the code will not move to the next phase or enter production.

Testing performs this all-important **gate-keeping** function, and Helps Bring Visibility to any issues that may be brushed under the carpet otherwise.

2. Test Design

Now that you have a strategy and a plan, the next step is to dive into creating a test suite. A test suite is a collection of test cases that are necessary to validate the system being built, against its original requirements.

Test design as a process is an amalgamation of the Test Manager's experience of similar projects over the years, testers' knowledge of the system/functionality being tested and prevailing practices in testing at any given point. For instance, if you work for a company in the early stages of a new product development, your focus will be on uncovering major bugs with the alpha/beta versions of your software, and less on making the software completely bug-proof.

The product may not yet have hit the critical "star" or "cash cow" stages of its existence—it's still a question mark. And you probably have investors backing you, or another product of your own that is subsiding this new initiative until it can break even. Here, you're trying to make significant strides—more like giant leaps—with your product before you're happy to unwrap it in front of customers. Therefore, you're less worried about superficial aspects like look and feel, and more worried about fundamental functionality that sets your product apart from your competitors.

In such a scenario, you may use lesser negative testing and more exploratory or disruptive testing to weed out complex, critical bugs. And you may want to leave out the more rigorous testing to until you have a viable product in hand. So your test suite at the beginning of the product

life cycle will be tuned towards testing fundamentals until you're close to release.
When you are happy to release a version to your customers, you'll want to employ more scientific testing to make it as bug-free as possible to improve customer experience. On the other hand, if you're testing an established product or system, then you probably already have a stable test suite. You then review the core test suite against individual project requirements to identify any gaps that need additional test cases.

3. Test Execution

You can execute tests in many different ways—as single, waterfall SIT (System Integration Test) and UAT (User Acceptance Test) phases; as part of Agile sprints; supplemented with exploratory tests; or with test-driven development. Ultimately, you need to do adequate amount of software testing to ensure your system is (relatively) bug-free.
Let's set methodology aside for a second, and focus on how you can clock adequate testing. Let's go back to the example of building a mobile app that can be supported across operating systems, OS versions, devices. The most important question that will guide your test efforts is "what is my test environment?".
You need to understand your test environment requirements clearly to be able to decide your testing strategy. For instance, does your app depend on integration with a core system back end to display information and notifications to customers? If yes, your test environment needs to provide back end integration to support meaningful functional tests.
Can you commission such an end-to-end environment to be built and ready for your sprints to begin? Depending on how your IT organization is set up, maybe not. This is where the question of agile vs a more flexible approach comes into picture. Could you have foreseen this necessity way before the sprints began? Probably not.

Given how Agile projects are run, you may only have a couple of weeks between initiating a project and starting delivery sprints, which time isn't enough to commission an end-to-end test environment if one doesn't already exist. If everything goes fine, you'll have a test environment to your liking, configured to support your project, with all enablers built to specifications. If not, then your test strategy will be different.
In this example, we're talking about doing front-end tests with dummy back end to support in-sprint testing, and wait until an integrated test environment is ready. It is common practice to schedule integration tests just after delivery sprints and before release. Your team can then run a dedicated System Integration Test, focusing on how the app components work with the back end to deliver the required functionality. So while app-specific bugs will primarily be reported during the sprints, functional end-to-end bugs will crop up during the integration test. You can follow this up with a UAT cycle to put finishing touches in terms of look and feel, copy, etc. How your team execute test cycles depends on the enabling infrastructure, project and team structure in your organization.

Reviewing Test Environment Requirements Early On Is Now A Widely Recognized Cornerstone For Good Project Management. Leaders are giving permanent, duplicate test environments a good deal of thought as an enabler for delivery at pace.

4. Test Closure

Right—so you have done the planning necessary, executed tests and now want to green-light your product for release. You need to consider the **exit criteria** for signal-ling completion of the test cycle and **readiness** for a release. Let's look at the components of exit criteria in general:

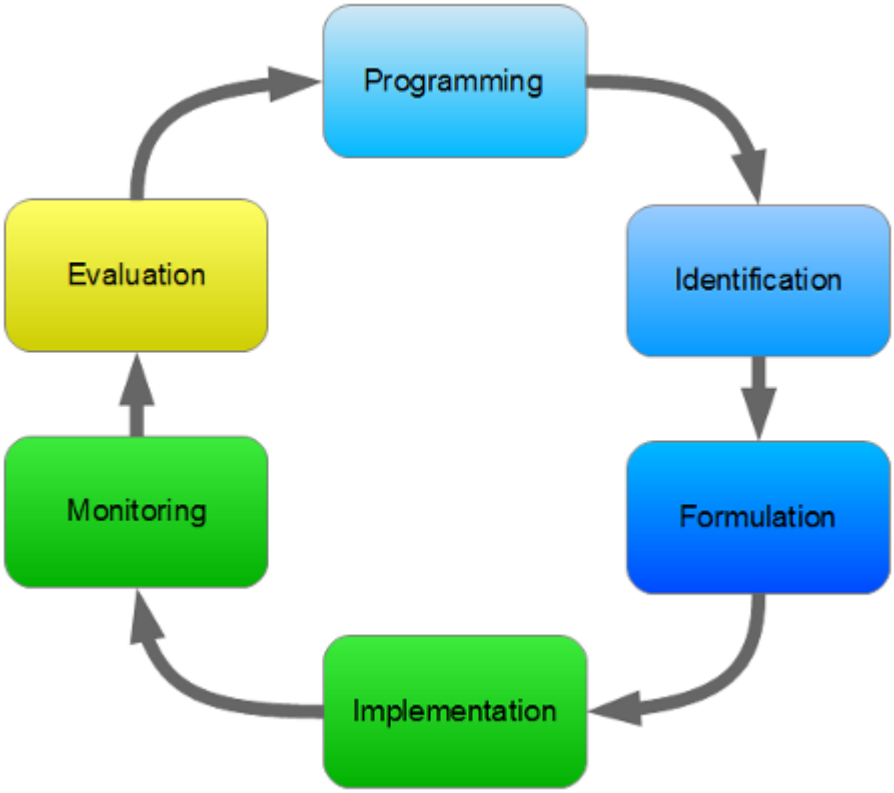
- 100% requirements coverage: all business and technical requirements have to be covered by testing.
- Minimum % pass rate: targeting 90% of all test cases to be passed is best practice.
- All critical defects to be fixed: self-explanatory. They are critical for a reason.

As a rule of thumb, I've seen projects mandate 90% pass rate and all critical defects being fixed before the team can move on to the next phase of the project. And on big transformation initiatives, I've seen individual releases move to the next phase (to aid beta pilots) with as little as 80%, with the understanding that the product won't reach the customer until mandatory exit criteria are met. Ultimately, what works for your team is down to your circumstances and business demands.

Remember that nobody can afford serious defects to remain unfixed when you launch to customers—especially if your product handles sensitive information or financial.

Polish things off with a **Test Summary and Defects analysis**: providing stats about testing – how many high/medium/low defects, which functions/features were affected, where were defects concentrated the most, approaches used to resolve defects (defer vs fix), Traceability Matrix to demonstrate requirements coverage.

4 . Result



The bottom line when any project is ongoing is usually financial. Of course, money makes the world go round, and in terms of the industry of business, it is no different. However, in terms of tangible measurable from the project management team and or the project management team leader, results are what matters, and what need to happen for the project to work. Results basically refer to any particular output or end point that comes as a result of the completion of the activities and or processes that have been performed as part of the project or as part of a particular project component. These results can include specific outcomes (such as revised processes, restructured organizations, and or trained personnel), and or actual deliverables such as documents. Types of documents that can actually represent results include policies, plans, procedures, reports, specifications, etc. The term results can and should be contrasted with products and or services. Also see deliverable for more information.

4.1 CONCLUSION

- There is a wide acceptance of our project in world due to the internet facilities available.
- The countries such as India, Brazil, and China etc which are on the path of development are implementing related idea for carry out various problems mention above.
- Our Project can surpass geographical limits and can prove to be worthy by reaching to customers. It caters to the demands of both the national and the international market.
- Our Project can help in providing an edge to your rivals in the market as one can better serve them globally.
- The Countries such as USA, Australia, Canada , UK etc are trying to come up with something innovative which will change the current scenario.
- The countries are well aware of its benefits and are becoming more innovative in this field as customers can easily select products from different providers without moving around physically and it also help business to handle its resources well.

4.2 REFERENCES

Books

Web Technologies: A Computer Science Perspective by Jeffrey C. Jackson.

Programming PHP by Rasmus Lerdorf.

PHP Cookbook by Adam Trachtenberg and David Skla.

Web

https://www.w3schools.com/

W3Schools is a web developers site, with tutorials and references on web development languages such as HTML, CSS, JavaScript, PHP, SQL, Python, jQuery, Java, W3.CSS, and Bootstrap, covering most aspects of web programming.

https://en.wikipedia.org/

Wikipedia is a multilingual, web-based, free-content encyclopedia project supported by the Wikimedia Foundation and based on a model of openly editable content. The name "Wikipedia" is a portmanteau of the words wiki (a technology for creating collaborative websites, from the Hawaiian word wiki, meaning "quick") and encyclopedia. Wikipedia's articles provide links designed to guide the user to related pages with additional information.

https://stackoverflow.com/

Founded in 2008, Stack Overflow is the largest, most trusted online community for anyone that codes to learn, share their knowledge, and build their careers. More than 50 million unique visitors come to Stack Overflow each month to help solve coding problems, develop new skills, and find job opportunities.