A
PROJECT
ON

"Electric Vehicle Charging Station"

Submitted to

G. S. COLLEGE OF COMMERCE & ECONOMICS, NAGPUR
(AUTONOMOUS)
In the Partial Fulfilment of

B.Com. (Computer Application) Final Year

Submitted by
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Under the Guidance of

Pravin J. Yadao

G. S. COLLEGE OF COMMERCE & ECONOMICS, NAGPUR
(AUTONOMOUS)
2020-2021

G. S. COLLEGE OF COMMERCE & ECONOMICS, NAGPUR
(AUTONOMOUS)
CERTIFICATE

(2020 - 2021)

This is to certify that Mr. /Miss Sivani Swaro & Vaishnavi Mandavkar has completed their project on the topic of ELECTRIC VEHICLE CHARGING STATION prescribed by G. S. College of Commerce & Economics, Nagpur (Autonomous) for B.Com. (Computer Application) – Semester-VI.

Date: 01-07-2021

Place: Nagpur

Pravin J. Yadao

Project Guide

External Examiner   Internal Examiner

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Student Names & Signature

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Date: 01-07-2021
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Sivani Swaro

Vaishnavi Mandavkar

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Place: Nagpur

DECLARATION

We **Sivani Swaro & Vaishnavi Mandavkar** hereby honestly declare that the work entitled **"Electric Vehicle Charging Station"** submitted by us at G.S. College of Commerce & Economics, Nagpur (Autonomous) in partial fulfillment of requirement for the award of B.Com. (Computer Application) degree by Rashtrasant Tukadoji Maharaja, Nagpur University, and Nagpur has not been submitted elsewhere for the award of any degree, during the academic session 2020-2021.

The project has been developed and completed by us independently under the supervision of the subject teacher and project guide.

Student Name & Signature

Date:01-07-2021   Sivani Swaro

Vaishnavi Mandavkar

Place: Nagpur

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INTRODUCTION

As we know people are switching to electric vehicles and for India's sustainable green planet goal, a robust push in cleaner mobility is essential and Only Electric vehicles can do this also EVs are rechargeable, involving zero-wastage of energy. They do not have even a single iota of harmful effects on human health and ecology. But the real problem starts when the people think that whether their electric vehicle will find a charging station in the first place or not. **"Electric Vehicle Charging Station"** project is a website made for the peoples of Nagpur district to find charging station in Nagpur and book slot for their electric vehicles on smart phone without going anywhere.

The main aim of this website is to provide lists of charging stations at Nagpur including ,opening hours, and location it will also provide dynamic data about connector availability at charging stations for electric vehicle and will also provide full detailed and dynamic data for specific individual station.

If a user visits the website first he will find a "**navigation bar"** which includes options like home, did you know, technology, company culture, services, price, contact. Then just below we have written the name of our website.

Now, if the user want to book slot for his/her electric vehicle then he/she have to click the "**search slot"** button then they will be directed on the next page where they have to search the nearest charging station and then they have to select time according to them and then they have to fill a registration form and they will receive a notification of their slot confirmation.

If the user is confused how to book the slot they can see the steps "**how to book a slot"** for their electric vehicle which is just below the slot booking button.

We have included a floating "**social links"** option which is on the left side of website also the user can connect with us by just clicking on the social links buttons and the user can ask their query.

The next thing which is on our website is **"did you know"** section. If the user wants to know about our business he can go through to it.

Then comes the "**delivering the latest technology"** section where we have mentioned what all things the ev power is providing to their customers.it includes how ev power website provides convenience of locating charging stations on aerial map and getting updates on charging also they can pay after they have completed charging their vehicle.

Then come the "**company culture"** section where we have mentioned our beliefs and behaviours that determine how company's employees and

management interact and handle outside business transactions. Often, corporate culture is implied, not expressly defined, and develops organically over time from the cumulative traits of the people the company hires. A company's culture will be reflected in its dress code, business hours, office setup, employee benefits, turnover, hiring decisions, and treatment of clients, client satisfaction, and every other aspect of operations.

Then comes the "**service provided"** section where user can see how many happy clients are there of our company till date, also our projects, hours of support and dedicated staff we have. This section is very important because the new customers can trust us by seeing this reports.

Next comes "**our services"** section where we have included what all services we provide to all our customers beside the charging facility.it includes so many services such as insurance facility, test drive, parking facility and many more. The customer can get everything they want about their vehicle just under one roof.

Then come the "**pricing section"** where the customer can go through the various packages mentioned in our website and can later on decide which package he/she wants.

Then comes the "**frequently asked question"** section that provides answers to a list of typical questions that users might ask regarding the electric vehicle charging station and also some related Questions to charging.

Lastly the "**contact us**" section where the user can go when they have a question and truly want to speak to an individual at our organization. It exist with the purpose of providing users, information on how they can get in touch with us. The goal of contact us page is to provide clear and effective method of getting in touch with us as quickly as possible.

Objectives

Some of the key objectives of this project are as follows:

1 User Friendly: To improve the electric vehicle charging experience by developing and demonstrating user friendly charging station and innovative charging solutions.

2 Information: To provide users with smart services like enhanced information to users, before and after charging.

3 Flexibility: To provide flexibility in booking slot process user can book any time right from his/her place, flexibility of this project also means timely updating of important dates and events.

4 Time Saver: To save time because time is important to all of us here in this website user can book his/her slot from anywhere by just click the button.

5 Easy Booking: To make the booking process easier only user have to put the data which is required.

6 Service: To provide better services to the user by clicking on services navigation.

7 Interface: Website aims at providing a user-friendly interface to user for booking slot.

8 Security: To provide a better security to the user by restricting the user to enter the details.

9 Feedback: The website wants the user to fill the feedback form. Their feedback are always welcome. It may help website to improve.

10 Platform: To be a platform for reliable information on hybrid and electric vehicles.

11 Investigation: To collaborate on pre-competitive research projects and related topics and to investigate the need for further research in promising areas.

12Good designed: This website is designed as like to keep interest so it's designed is developed good and makes it easy and well enhanced to use this website.

13 Charging: To allow the user to charge their vehicle which will take an appropriate 25min.

14 Increase Knowledge: In this website information of vehicles are designed which support to increase knowledge of younger generation and gives interest to them to knowing about them.

15 Future Development: This application keeps an eye for future development with the view to keep things according to the dynamic environment. This application has been developed with the objective of not losing the market due to lack of changes according to trend.

PRELIMINARY SYSTEM ANALYSIS

Preliminary Investigation basically refers to the collection of information that guides the management of an organization to evaluate the merits and demerits of the project request and make an informed judgment about the feasibility of the proposed system. This sort of investigation provides us with a through picture of the kind of software and hardware requirements which are most feasible for the system, plus the environment in which the entire project has to be installed and made operational.

1. Reviewing the Documents provided by the Organization

They were quite effective in guiding us towards visualizing the features that were needed to be put together in the system and the required output which had to be generated once the system became functional.

These specifications provided to us by the organization showed how the new system should look like; it helped us in understanding the basic structure of the application which we were supposed to develop.

2. On site Observation:

Another technique utilized by us to gain information about the project was to visit the client site where the system had to be installed. Here a detailed system study was carried out, checking the existing system to replicate it with our system. We also observed the activities of the system directly. During the on-site observation, we saw the office environment, work load of the system and users, method of work, and the facilities provided by the organization. This information helped us to understand how the system should operate. But after interviewing the persons, who is affected by the system, we got more details that further explain the project and shown whether assistance is merited economically, operationally and technically.

3. <u>Conducting Interviews:</u>

This method of investigation conducted by us involved questioning the concerned personnel to get the user's (client) view about the system and the features they desired it to have. Some of the Questions put forward by our team were:

a)   The amount of data needed to be stored.

b)   The number of customers using the system and number of which the application needed to be installed.

c)   The issue of our application with existing system was widely discussed.

d)   The level of access given to the customer would depend on his department.

It includes the following sub topics:

1. Preliminary Investigation
2. Present system in use
3. Flaws of Present System
4. Need of New System
5. Feasibility Study
6. project category

PRELIMENRY INVESTIGATION

"Electric Vehicle Charging Station" is not just a project but a solution for public on a large scale. When we were searching a topic for the assignment, we came across the problem that many people face on a daily basis. After the initial research, we found that, even after the steps taken by government to solve the issue of Electric Vehicle Charging Station, there is not much awareness in the public regarding same.

People who own electric vehicles avoid their usage because of this issue. It defeats the whole purpose of having an Eco-friendly vehicle. In recent past we have seen a spike in number of electric vehicles in the district of Nagpur as people are getting aware of the environmental crisis and have chosen the way of eco-friendly life-style including their transportation. But as our traditional transport vehicles need fuel such as petrol, diesel and gas we find their station very often now. But we cannot find the charging stations for the electric vehicles easily because of their very low availability.

The concept of electric vehicles is new to our nation, so as their usage and availability of resources. We see people struggle to use their electric vehicles when they are on long journeys or using their electric vehicle on a daily basis. Firstly they can't find the charging station and even if they found it, they struggle to get a slot to charge their vehicle.

We realised this may look small but is a big issue for the concerned audience. We wanted to help them and thus we came up with the idea of a website where people of Nagpur district can find a charging station for their electric vehicle as well as book the slot from their phone with some easy clicks. By this website people will be able to track all the Electric Vehicle Charging Stations in the district of Nagpur, and get to the nearby charging station as soon as possible. At the same time users can book the charging slot for their electric vehicles from the same website by complying minimal formalities.

Present System in use

The present system in use can be also considered as existing system. Technically there are very few websites on internet which provide information regarding charging stations for electric vehicles, but there are no websites which allow or offer the facility of slot booking for charging electric auto-mobiles to user. Due to very less websites available on internet regarding this, people are not much aware of the system.

In the existing system, there are very few websites working on internet with insufficient and old content, these websites are not maintained regularly and it does not provide the latest content to the users, and it makes the website of no particular use for the user considering current scenario.

Therefore, the present system in use needs to be replaced by new technology, which solves the flaws of the old system such as, latest content, updated technology, User-friendly system and easy accessibility.

Flaws in present system

Some of the flaws in present system are:

1. The information gap

There is nothing complicated about opening the door to your gas tank and inserting the nozzle. Plugging in an EV is not terribly complicated, either, but the devil is in the details.

No matter what happens at a gas station, you know it only takes five minutes to fill up your tank once you get going. Charging takes some planning. Again, it's not rocket science, but you have to know the specifics of the car you are driving and be aware of a station's capability when you're in public. You also have to know a charger is there in the first place.

2. Not enough fast chargers

It's quite difficult to fast-charge your car in many cities, even when money is no object. You have to drive through strange neighbourhoods and try to locate chargers in vast parking lots where GPS is known to drop out of service. The bottom line is there aren't nearly enough places to recharge an EV at a respectable speed. On highway, the situation is worse. Initiatives to build fast chargers along major highways are just getting started, so this problem could be addressed in the coming years. Unfortunately, if you wanted to charge your car on a road trip between East Coast cities, the options in fast charging are few and far between.

3. Too many maps, too many apps

Let's say you know the ins and outs of your EV's on board charger and hit the road armed with a charging account and the relevant app installed on your phone. In theory, you should have no problem plugging in and paying with a tap of your phone. But the station you want appears on one app but not on the other (usually, because of competing business interests).

So you might need two or three apps just to know where a charging station is, and once you get there you might not be able to use it because it's operated by a provider with whom you haven't opened an account. Can't we all just get along here (in the spirit of Tesla and its open-sourced patents)? We can't imagine a gas station being hidden on any map. Or, put another way: a declining tide sinks all ships.

4. Price gouging

Perhaps due to the popularity of Tesla (whose Superchargers are free to most users, incidentally), some charging station providers consider EVs a luxury item and haven't been shy about charging high rates. This type of price gouging usually renders a station unusable

to drivers who bought a humble EV with the expectation of spending less on fuelling. A quick check of public charging apps suggests the most expensive chargers remain unused, which defeats the purpose of installing a plug in the first place. Maybe the wave of affordable long-range EVs will force station operators to come to their senses. Electricity is not a fabulous luxury item, so it shouldn't be priced that way. Of course, more government-operated chargers in public places at reasonable prices wouldn't hurt, either.

5. Economic and Infrastructure Issues

Both the economic and infrastructure issues hindering the fruitful achievement of fast charging for electric vehicles have technical hurdles that need to be addressed; access to charging infrastructure must improve. Fast charging at this timescale needs to materialize at a price that is sustainable to consumers, who rank not having enough access to efficient charging stations as the third most serious barrier to purchasing EVs.According to consumer survey, charging could soon become the top barrier for possessing an EV especially now when EV prices are declining while ranges are expanding.

6. Convincing Utility Providers

As we move towards a renewable energy-powered world, convincing utility providers to change their business models will be a challenge. For EVs, the electrical energy needed for charging stations poses a problem for utility providers. If that is no problem enough, the providers will be obligated to contact each and every automaker who uses the charging station and inform them to quantify their electricity usage. This issue can only be resolved if all EV manufacturers merge to create a neutral platform, like a central server, so the utility providers only have to send one load reduction request. The manufacturer can respond accordingly, making it easier for all parties involved.

7. Charging by time can be confusing

Some charge points and networks charge per minute, rather than by kWh (the electric car equivalent of pence per litre). This makes it difficult for you to compare prices and also Charging speeds are too confusing all slow and fast chargers provide AC current, which your electric car's on board charger converts to DC so it can then be channelled into your battery. But just because a 22kW charger exists, this doesn't mean your car can actually receive a 22kW charge. Any car capable of rapid charging also has an entirely separate maximum DC charge rate. The problem is that drivers could choose a charger with a higher rate of power when it's of no use, potentially taking it away from another driver who could make better use of it.

Need of new system

The system to find electric vehicle charging stations is the need of the hour, as we know the electric vehicles are the future of the transportation industry, same as that the additional services such as charging and cleaning stations for electric vehicles is important. In the current scenario people have started purchasing electric vehicles on a large scale, but the amount of charging stations are very limited. People are hesitating to use electric vehicles due to scarcity of charging stations. Most of the electric mobiles can be used for 300 to 400 Kilometres in a single charge. People who use electric vehicles for daily usage such as office vehicle, or local businesses are able to find charging stations after a little struggle but they face terrible issues in booking the charging slots. Whereas the people who use electric vehicles for long journey's come across problems such as not able to find any charging station and if they find one they don't have access to the information regarding the availability of charging slots. While travelling this issue is of great inconvenience. In recently district of Nagpur has seen increase in number of electric vehicles and also increase in such problems to public at a larger scale. Thus the need of a proper systematic information provider site was raised, and we came up with a proper solution, which reduces time consumption in searching the electric vehicle charging stations and even provides a way to book charging slots online, which helps in saving time spent on booking slots unsuccessfully.

1. Requirement of charging station Infrastructure:

Charging infrastructure will play a pivotal role on EV deployment, and, in the absence of a proactive plan and schedule, is a major impediment to mass market adoption. Infrastructure limitations are particularly pertinent to BEVs due to their sole dependency on electricity. The charging infrastructure includes all of the hardware and software that ensures energy is transferred from the electric grid to the vehicle. It can be categorized by location, power level and charging time strategy. Charging locations combined with an acceptable charging time strategy increases BEV functionality and decreases public charging requirements. The approximation of the electric vehicle supply equipment (EVSE) needed at different types of locations (e.g., Home, Work and Commercial Parking) is proposed based on an optimal charging strategy.

2. **Indian current scenario:** Large scale introduction of Plug-in electric vehicles including plug-in hybrid electric vehicles and Battery Electric Vehicles have the potential to improve Indian energy and environmental landscape of personal transportation. Central government should start enforcing necessary measures to install EV charging infrastructure. Initial step could be to encourage international market players to make case studies on potential locations and adequate quantity of Electric Vehicle Supply Equipment. With a projection of EVs, the effects on current, energy production, transmission and distribution scheme, road traffic density, emission level and parking space requirement need to be analysed. Operation and maintenance of installed infrastructure should be maintained properly.

3. **Algorithm for charging station:** selection Charging Station Selection server (CSS) traces the instantaneous location of a vehicle and taps the range available with it. It proposes all the charging stations covering the limit.CSS communicates with other vehicles to determine the road traffic and gives an approximate time and charge remaining, until a specific charging station is reached. It also suggests an alternate route to the nearest charging station in case of heavy traffic. The driver chooses the charging type and blocks a slot considering least waiting time. The CSS uses mobile network to communicate with the vehicle and CSs. It also proposes the current metering scheme at particular CS and compares with other CS price. It also can be done through a demand based metering system where EVs will be charged according to peak time and peak load.

4. **Grid to Electric Vehicle:** Impacts on electricity supply and the grid Impact of high level of penetration of EVs on the electricity grid would mainly be on the low voltage distribution grid, and would depend on characteristics of grid as well as on the timing, location and rate of battery recharging required. However, demand-side management is achieved by using smart metering systems, variable electricity tariffs and off-peak battery charging. This gives a potential to significantly reduce the need for grid reinforcement and the costs associated with it.

5. Smart Chargers: To support huge network, there is a requirement for smart chargers. Apart from public charging stations, India needs to work on mass charging stations at work places and parking towers. To minimize peak load charging, smart chargers have to cut off power to particular vehicles once it reaches a 70%-80% of charging and divert the same to other cars. Most of the offices in India are small and distributed. So we can have a common parking tower for all the offices at a particular zone where smart charging can be implemented, which will otherwise minimize the individual implementation cost.

6. Result and Discussion: From the fuel comparison table we infer that the cost of fuel i.e. electricity for EVs is 45% cheaper than petrol and diesel. But still it requires a large charging station infrastructure to be installed throughout the country before encouraging the society for adapting it. Government subsidy, public awareness, instant technical support and extended manufacturer warranty are the key measures to attract Indian customers. For India, to save the large financial investment of large scale grid enforcement, load balancing by variable electricity metering tariffs will be a smart move. Proper information transfer between CSS and EVs should be ensured for smooth traffic flow.

Feasibility study

To overcome the transportation sector's dependency on fossil fuels, electric vehicles appears to be a better alternative with a number of impressive benefits. Enhancing the utilization of electric vehicles not only reduces global gasoline and diesel consumption but also helps in running an environmentally cleaner road transport system with zero tailpipe emissions. As road transport involves substantial gasoline and diesel consumption, Plug-in Electric Vehicles (EVs) being more energy efficient and environment friendly can have direct impact on reduction of fuel reliance. One of the important limitations influencing the penetration of electrical vehicles in the global market is the lack of adequate charging infrastructure availability. Considering various challenges involved in deployment of charging infrastructure, enhancement of public charging infrastructure can be a successful step resulting in electric vehicle market raise.

This project is focused in developing a decision support system to evaluate optimal number of charging stations to be established in a public facility, which are sustainable and economically viable. This system considers a Monte Carlo simulation of a scenario using various pre-recorded categorical data, depicting traffic arrival patterns and logistic challenges created by variance in weather severity and time of the year. The simulated data can be used to estimate the energy consumption and costs incurred by the charging stations in the facility. This work results in a decision making spreadsheet-based model that enable facilities to explore cost implications of installing and operating Electric Vehicle Supply Equipment (EVSE).

Feasibility study is the preliminary study undertaken before the real work of the project starts to ascertain the like hood of the project success. It analyse the possible solutions to a problem and a recommendations on the best solutions to use. It involves the evaluation that how the solution will fit into the corporation. A Feasibility study is defined as an evolution or analysis of the potential impacts of a proposed project or system. A feasibility study is

conducted to assist decision makers in determining whether or not to implement a particular project or system.

The aim of feasibility study is to see whether it is possible to develop a reasonable cost. At the end of feasibility study a decision is taken whether to proceed or not. Feasibility study is to determine various solutions of the problem and then picking up one of the best solution. It is the measure of how beneficial the development of information system will be to an organization. The study also shows the sensitivity of business to change in the basic assumption.

Economic Feasibility:

The website for the "Electric Vehicle Charging Station" can be said as economically feasible, as the cost to make the website is very low. All the facilities provided on the website are freely available on the internet, this specific project brings all of them together, and the site making cost is minimal thus, making the site economically affordable.

And from consumers view this website is absolutely economically feasible because it is freely available on the internet and while using this website, it only asks for credentials such as basic consumer details and nowhere demands any kind of monetary or other ways of payment.

Social Feasibility:

The website for "Electric Vehicle Charging Station" will be socially acceptable and feasible, this website only concerns to the members of the society who own electric vehicles. And once the website is fully operational it will be helping people at large for searching and booking slots for charging their auto-mobiles.

Technical Feasibility:

Technical feasibility of this system can be little difficult, as this system requires manpower which constantly stays in touch with the authorities of the charging stations who co-ordinates the booking of the slots at various charging stations. Sometimes the internet server on the website can be affected due to weather or other factors, or there can be connectivity issue on the consumer's side which can make accessing the website a bit difficult.

Project Category

In this project, some languages and software have been used as frontend and backend which are as follows:

- HTML CSS JAVASCRIPT as frontend
- PHP as backend

This project **"ELECTRIC VEHICLE CHARGING STASTION"** uses HTML, CSS & JAVASCRIPT as frontend and PHP as backend of this project. Microsoft Windows 10 as platform to know working of the project one should know about its platform.

Following is the brief summary on the languages and software used:

HTML:

HTML is a mark-up language that defines the structure of your content. HTML consists of a series of elements, which you use to enclose, or wrap, different parts of the content to make it appear a certain way, or act a certain way. The enclosing tags can make a word or image hyperlink to somewhere else, can italicize words, and can make the font bigger or smaller, and so on.

HTML (Hypertext Mark-up Language) is the most basic building block of the Web. It defines the meaning and structure of web content. Other technologies besides HTML are generally used to describe a web page's appearance/presentation (CSS) or functionality/behaviour.

"Hypertext" refers to links that connect web pages to one another, either within a single website or between websites. Links are a fundamental aspect of the Web. By uploading content to the Internet and linking it to pages created by other people, you become an active participant in the World Wide Web.

HTML uses "mark-up" to annotate text, images, and other content for display in a Web browser. HTML mark-up includes special "elements" such as <head>, <title>, <body>, <header>, <footer>, <article>, <section>, <p>, <div>, <span>, <img>, <aside>, <audio>, <canvas>, <datalist>, <details>, <embed>, <nav>, <output>, <progress>, <video>, <ul>, <ol>, <li> and many others.

CSS:

Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable.

CSS handles the look and feel part of a web page. Using CSS, you can control the colour of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colours are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects.

CSS is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the mark-up languages HTML or XHTML.

Advantages of CSS:

- **CSS saves time:** we can write CSS once and then reuse same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many Web pages as you want.
- **Pages load faster:** If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So less code means faster download times.
- **Easy maintenance:** To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.

- **Superior styles to HTML:** CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.
- **Multiple Device Compatibility:** Style sheets allow content to be optimized for more than one type of device. By using the same HTML document, different versions of a website can be presented for handheld devices such as PDAs and cell phones or for printing.
- **Global web standards:** Now HTML attributes are being deprecated and it is being recommended to use CSS. So it's a good idea to start using CSS in all the HTML pages to make them compatible to future browsers.

JAVASCRIPT:

JavaScript is a lightweight, cross-platform, and interpreted scripting language. It is well-known for the development of web pages, many non-browser environments also use it. JavaScript can be used for Client-side developments as well as Server-side developments. JavaScript contains a standard library of objects, like Array, Date, and Math, and a core set of language elements like operators, control structures, and statements.

- **Client-side:** It supplies objects to control a browser and it's Document Object Model (DOM). Like if client-side extensions allow an application to place elements on an HTML form and respond to user events such as mouse clicks, form input, and page navigation. Useful libraries for the client-side are Angularjs, ReactJS, VueJS and so many others.

- **Server-side:** It supplies objects relevant to running JavaScript on a server. Like if the server-side extensions allow an application to communicate with a database, and provide continuity of

information from one invocation to another of the application, or perform file manipulations on a server. The useful framework which is the most famous these days is node.js.

JavaScript can be added to your HTML file in two ways:

1) **Internal JS:** We can add JavaScript directly to our HTML file by writing the code inside the <script> tag. The <script> tag can either be placed inside the <head> or the <body> tag according to the requirement.
2) **External JS:** We can write JavaScript code in other file having an extension.

➢ JavaScript is the most popular language on earth.
➢ With advances in browser technology and JavaScript having moved into the server with Node.js and other frameworks, JavaScript is capable of so much more. Here are a few things that we can do with JavaScript:
➢ JavaScript was created in the first place for DOM manipulation. Earlier websites were mostly static, after JS was created dynamic Web sites were made.
➢ Functions in JS are objects. They may have properties and methods just like another object. They can be passed as arguments in other functions.
➢ Can handle date and time.
➢ Performs Form Validation although the forms are created using HTML.
➢ No compiler needed.

PHP:

PHP started out as a small open source project that evolved as more and more people found out how useful it was. Ramus Lerdorf unleashed the first version of PHP way back in 1994.

PHP is a recursive acronym for "PHP: Hypertext Pre-processor".

PHP is a server side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites.

It is integrated with a number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server.

PHP is pleasingly zippy in its execution, especially when compiled as an Apache module on the UNIX side. The MySQL server, once started, executes even very complex queries with huge result sets in record-setting time.

PHP supports a large number of major protocols such as POP3, IMAP, and LDAP. PHP4 added support for Java and distributed object architectures (COM and CORBA), making n-tier development a possibility for the first time.

PHP is forgiving: PHP language tries to be as forgiving as possible.

PHP Syntax is C-Like.

Five important characteristics make PHP's practical nature possible:

- Simplicity
- Efficiency
- Security
- Flexibility
- Familiarity

Common uses of PHP

- PHP performs system functions, i.e. from files on a system it can create, open, read, write, and close them.
- PHP can handle forms, i.e. gather data from files, save data to a file, through email you can send data, return data to the user.
- We can add, delete, and modify elements within your database through PHP.
- Access cookies variables and set cookies.
- Using PHP, you can restrict users to access some pages of your website.
- It can encrypt data.

When building a complex page, at some point you will be faced with the need to combine PHP and HTML to achieve your needed results. At first point, this can seem complicated, since PHP and HTML are two separate languages, but this is not the case. PHP is designed to interact with HTML and PHP scripts can be included in an HTML page without a problem.

In an HTML page, PHP code is enclosed within special PHP tags. When a visitor opens the page, the server processes the PHP code and then sends the output (not the PHP code itself) to the visitor's browser. Actually it is quite simple to integrate HTML and PHP. A PHP script can be treated as an HTML page, with bits of PHP inserted here and there. Anything in a PHP script that is not contained within <?php?> tags is ignored by the PHP compiler and passed directly to the web browser.

Software and Hardware Requirement

HARDWARE:

Hardware is a term that refers to all the physical parts that make up a computer. The internal hardware devices that make up the computer. Various devices which are essentials to form a hardware is called as components.

Following are the hardware specifications that is required to develop this project is as follows:

Computer components like Monitor, Keyboard, Mouse, CPU, and Keyboard.

Minimum 1 GB ram for smooth working of application.

250 GB Hard Disk or More.

Wi-Fi Adaptor or an active internet connection.

SOFTWARE:

Software can be termed as the group of instruction or command used by the computer to accomplish the given task.

It can be said as a set of instructions or programs instructing a computer to do specific task. Software in general term is used to describe the computer programs.

Following are the software specifications that is required to develop this project is as follows:

Operating System: Microsoft Windows XP or above versions.

Language Used (Front End): HTML, CSS, JAVASCRIPT

Database Used (Back End): PHP

DETAILED SYSTEM ANALYSIS

DATA FLOW DIAGRAM

SEARCH SLOT → FILL THE REQUIRED DATA → RESULT

FILL THE REQUIRED DATA → DATA BASE
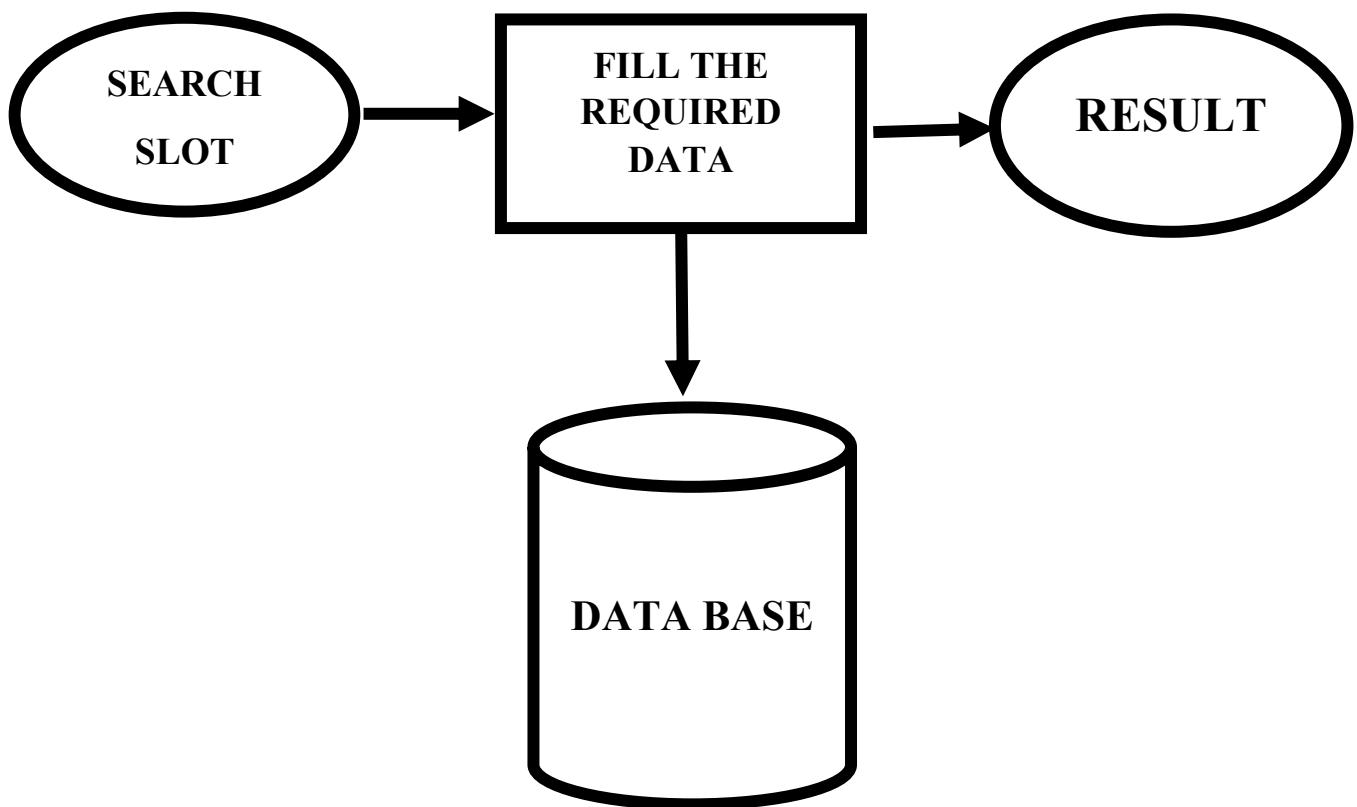
System

Design

Source Code

```html
<!DOCTYPE html>
<html lang="en">


<head>
  <meta charset="utf-8">
  <meta content="width=device-width, initial-scale=1.0" name="viewport">


  <title>Ezcharge</title>



  <!-- Logo -->
  <link href="assets/img/logo.jpg" rel="icon">
  <!-- <link href="assets/img/apple-touch-icon.png" rel="apple-touch-icon"> -->


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

  <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.10.0/css/all.min.css" integrity="sha512-PgQMlq+nqFLV4ylk1gwUOgm6CtIIXkKwaIHp/PAIWHzig/lKZSEGKEysh0TCVbHJXCLN7WetD8TFecIky75ZfQ==" crossorigin="anonymous" />

  <!-- Vendor CSS Files -->
```

```html
    <link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">

    <link href="assets/vendor/icofont/icofont.min.css" rel="stylesheet">

    <link href="assets/vendor/boxicons/css/boxicons.min.css" rel="stylesheet">

    <link href="assets/vendor/owl.carousel/assets/owl.carousel.min.css"
rel="stylesheet">

    <link href="assets/vendor/venobox/venobox.css" rel="stylesheet">

    <link href="assets/vendor/aos/aos.css" rel="stylesheet">


    <!-- Template Main CSS File -->

    <link href="assets/css/style.css" rel="stylesheet">



</head>


<body>
    <!-- SOCIAL LINKS -->
    <div class="icon-bar">
        <a href='#' class='facebook' target='_blank'>
            click here to visit <i class=" fab fa-facebook-square"></i>
        </a>
        <a href='#' class='gmail' target='_blank'>
            click here to visit<i class=" fab fa-google"></i>
        </a>


        <a href='#' class='instagram' target='_blank'>
            click here to visit<i class="fab fa-instagram"></i>
        </a>
        <a href='#' class='whatsapp' target='_blank'>
```

```html
      click here to visit<i class=" fab fa-whatsapp"></i>
    </a>
    <a href='#' class='youtube' target='_blank'>
    click here to visit<i class=" fab fa-youtube-square"></i></a>
  </div>
  <!-- END SOCIAL LINKS -->



  <!-- ======= Header ======= -->
  <header id="header" class="fixed-top">
    <div class="container d-flex align-items-center">

      <h1 class="logo mr-auto"><a href="index.html">Ez
charge<span></span></a></h1>
      <nav class="nav-menu d-none d-lg-block">
        <ul>
          <li class="active"><a href="index.html">Home</a></li>
          <li><a href="#diduknow">Did you Know</a></li>
          <li><a href="#about">Technology</a></li>

          <li><a href="#resources">Resources</a></li>
          <li><a href="#services">Services</a></li>
          <li><a href="#pricing">Price</a></li>
          <li><a href="#contact">Contact</a></li>

        </ul>
      </nav>
    </div>
```

```html
  </header>
  <!-- End Header -->


  <!-- ======= Banner Section ======= -->
  <section id="hero" class="d-flex align-items-center">
    <div class="container" data-aos="zoom-out" data-aos-delay="100">
      <h1>Welcome to <span>Ez Charge</spa>
  </h1>
  <h2>Strong Design and Better Charging Experience</h2>
  <div class="d-flex">
    <a href="#about" class="btn-get-started scrollto">Search A Slot</a>


  </div>
 </div>
</section>
<!-- End Banner-->


 <!-- ======= How It Works Section ======= -->
 <section id="featured-services" class="featured-services">
  <div class="container" data-aos="fade-up">


    <div class="row">
     <div class="col-md-6 col-lg-3 d-flex align-items-stretch mb-5 mb-lg-0">
      <div class="icon-box" data-aos="fade-up" data-aos-delay="100">
        <!-- <div class="icon"><i class="bx bxl-dribbble"></i></div> -->
        <h3 class="title"><a href="">STEP 1</a></h3>
        <h6>CHOOSE YOUR LOCATION<br></h6>
```

Select your nearby center for charging.</p>
         </div>
       </div>

       <div class="col-md-6 col-lg-3 d-flex align-items-stretch mb-5 mb-lg-0">
         <div class="icon-box" data-aos="fade-up" data-aos-delay="200">
           <!-- <div class="icon"><i class="bx bx-file"></i></div> -->
           <h2 class="title">STEP 2</h2>
           <h6>CONFIRM YOUR SLOT TIMING
</h6>
Select slot timing according to your convenince.</p>
         </div>
       </div>

       <div class="col-md-6 col-lg-3 d-flex align-items-stretch mb-5 mb-lg-0">
         <div class="icon-box" data-aos="fade-up" data-aos-delay="300">
           <!-- <div class="icon"><i class="bx bx-tachometer"></i></div> -->
           <h4 class="title">STEP 3</h4>
           <h6>REGISTER YOURSELF
</h6>
Register yourself by filling the form.</p>
         </div>
       </div>

       <div class="col-md-6 col-lg-3 d-flex align-items-stretch mb-5 mb-lg-
0">
         <div class="icon-box" data-aos="fade-up" data-aos-delay="400">
           <!-- <div class="icon"><i class="bx bx-world"></i></div> -->
           <h4 class="title">STEP 4</h4>

```html
            <h6>ANY QUESTION?<br></h6>
Please follow our Frequently asked questions. </p>
          </div>
        </div>


      </div>
    </div>
  </section><!-- End How it works -->



  <main id="main">



  <!-- diduknow -->



  <section id="diduknow" class="diduknow">
    <div class="container" data-aos="fade-up">


      <div class="row">
        <div class="col-lg-4" data-aos="zoom-out" data-aos-delay="100">
          <img class="float-md-right"src="assets/img/did-you-img1.png"
class="img-fluid" alt="">
        </div>
        <div class="col-lg-8 pt-4 pt-lg-0 content d-flex flex-column justify-
content-center" data-aos="fade-up" data-aos-delay="100">


          <div id="carouselExampleControls" class="carousel slide" data-
ride="carousel">
```

```html
<div class="carousel-inner">
  <div class="carousel-item active">
    <div class="carousel-caption">


      <h3>Did You know?</h3>
      <p>We are here to provide you the best services and help in developing ev charging infrastructure.</p>
    </div>
  </div>
  <div class="carousel-item">
    <div class="carousel-caption">
      <h3>Did You know?</h3>
      <p>We established the first, public electric vehicle charging station in Nagpur, Maharashtra Making Nagpur EV ready.</p>
    </div>
  </div>
  <div class="carousel-item">
    <div class="carousel-caption">
      <h3>Did You know?</h3>
      <p>Total 232 clients are happy with our services.</p>
    </div>
  </div>
  <div class="carousel-item">
    <div class="carousel-caption">
      <h3>Did You know?</h3>
      <p>We have installed over 6 Ev charging station in Nagpur,Maharashta.</p>
```

```html
              </div>

            </div>

            <div class="carousel-item">

              <div class="carousel-caption">

                <h3>Did You know?</h3>

                <p>We are supposed expand our services in over 10 cities
across Maharshtra so far including
Solapur,Nashik,Aurangabad,Satara,Kolhapur,Yavatmal,Amravati,,Nanded,Latu
r.</p>

              </div>

            </div>

          </div>

          <a class="carousel-control-prev"
href="#carouselExampleControls" role="button" data-slide="prev">

            <span class="carousel-control-prev-icon" aria-
hidden="true"></span>

          <span class="sr-only">Previous</span>

          </a>

          <a class="carousel-control-next" href="#carouselExampleControls"
role="button" data-slide="next">

            <span class="carousel-control-next-icon" aria-
hidden="true"></span>

            <span class="sr-only">Next</span>

          </a>

      </div>

      </div>

      </div>

      </div>

    </section>

    <!-- end diduknow -->
```

```html
<!-- ======= About Section ======= -->
<section id="about" class="about section-bg">
  <div class="container" data-aos="fade-up">


    <div class="section-title">
      <!-- <h2>About</h2> -->
      <h1>Delivering the <span>latest technology</span></h1>
      <h5>Smart charging with EV Power.</h5>
    </div>


    <div class="row">
      <div class="col-lg-6" data-aos="zoom-out" data-aos-delay="100"><br><br>

        <img src="assets/img/how-it-works.jpg" class="img-fluid" alt="">
      </div>

      <div class="col-lg-6 pt-4 pt-lg-0 content d-flex flex-column justify-content-center" data-aos="fade-up" data-aos-delay="100">

        <h6>EV Power website is to provide the convenience of locating charging stations on aerial map, getting updates on charging, recommendations on paying charges.</h6><br>

        <h6>Just like traditional fuel engine vehicles, the cost of running an electric vehicle varies depending on the model, make and specifics of the vehicle – it means there's an option for everyone and this including buying an EV too.</h6>


        <ul>
          <li>
```

```html
        <div>

            <h6>Electric vehicles are likely to cost you less over the
course of ownership. Electricity costs much less than petrol or diesel and
electric cars require less maintenance than an internal combustion engine
(ICE).</h6><br>

            <h6>In addition, there are various incentives offered such
as government grants or schemes, Vehicle Excise Duty discounts or exemption
and also exemption from Fuel Duty.</h6>

        </div>
    </li>
    <li>


        <div>

            <h6>One of the biggest advantages of driving electric is the
improvement it can make to the environment we live in.Pure electric vehicles
have no tailpipe, so they don't emit any exhaust gases, which reduces local air
pollution particularly in congested cities.</h6>


    </div>


  </div>
</section>
<!-- End About Section -->


<!-- Resources  -->
<section id="resources" class="resources">
  <div class="container" data-aos="fade-up">


    <div class="row">
      <div data-aos="zoom-out" data-aos-delay="100">
```

```html
            <h1>Company Culture</h1>
            <ul>
              <li>Innovation</li>
              <li>Customer Orientation</li>
              <li>Care for our people</li>
              <li>Commitment</li>
              <li>Trust worthiness</li>
            </ul>
            </div>
         </div>
       </div>
      </section>
<!-- end Resources -->




<!-- ======= Counts Section ======= -->
<section id="counts" class="counts">
   <div class="container" data-aos="fade-up">

      <div class="row">

         <div class="col-lg-3 col-md-6">
            <div class="count-box">
               <i class="icofont-simple-smile"></i>
               <span data-toggle="counter-up">232</span>
               <p>Happy Clients</p>
```

```html
          </div>
      </div>


      <div class="col-lg-3 col-md-6 mt-5 mt-md-0">
        <div class="count-box">
          <i class="icofont-document-folder"></i>
          <span data-toggle="counter-up">521</span>
          <p>Projects</p>
        </div>
      </div>


      <div class="col-lg-3 col-md-6 mt-5 mt-lg-0">
        <div class="count-box">
          <i class="icofont-live-support"></i>
          <span data-toggle="counter-up">1,463</span>
          <p>Hours Of Support</p>
        </div>
      </div>


      <div class="col-lg-3 col-md-6 mt-5 mt-lg-0">

        <div class="count-box">
          <i class="icofont-users-alt-5"></i>
          <span data-toggle="counter-up">15</span>
          <p>Number of staffs</p>
        </div>
      </div>
```

```html
        </div>

      </div>
    </section>


    <!-- ======= Services Section ======= -->
    <section id="services" class="services">
      <div class="container" data-aos="fade-up">

        <div class="section-title">
          <!-- <h2>Services</h2> -->
          <h3>Check our <span>Services</span></h3>
          We offer the wide range of services.Our passionate service people to
deliver the right services for individual challenges today and in future.
                    <br><p><center>YOUR CONFIDENCE IS OUR
PROMISE.WE ARE THERE.</p></center>
A processes adopted and enhanced over the month of experience to customer
through value added services in following keys.

        </div>


        <div class="row">
          <div class="col-lg-4 col-md-6 d-flex align-items-stretch" data-
aos="zoom-in" data-aos-delay="100">
            <div class="icon-box">
              <div class="icon"><i class="bx bxl-dribbble"></i></div>
              <h4><a href="">EV Charging</a></h4>
```

```html
        <p>We provide seamless charging experience . It allows you to
stay charge on the go. Plug in at at your convenience.</p>

        </div>

      </div>


        <div class="col-lg-4 col-md-6 d-flex align-items-stretch mt-4 mt-md-
0" data-aos="zoom-in" data-aos-delay="200">

        <div class="icon-box">

          <div class="icon"><i class="bx bx-file"></i></div>

          <h4><a href="">Insurance Facility</a></h4>

          <p>we provide insurance facility for electric vehicles. Electric
Vehicle Comprehensive Policy will also extend 12 add-on covers, such as
depreciation reimbursement, no-claim bonus (NCB) protection, repair of glass,
fibre, plastic, and rubber parts, loss of personal belongings, emergency transport
and hotel expenses, daily allowance, return to invoice, key replacement, motor
secure, tyre secure, consumable expenses, and roadside assistance.</p>

        </div>

      </div>


        <div class="col-lg-4 col-md-6 d-flex align-items-stretch mt-4 mt-lg-
0" data-aos="zoom-in" data-aos-delay="300">

        <div class="icon-box">

          <div class="icon"><i class="bx bx-tachometer"></i></div>

          <h4><a href="">Test Drive</a></h4>

          <p>Are you looking for a new electric car but can't decide which
one to go for? Don't panic! Book a test drive for one of our models and take
some time to think before you make your choice.</p>

        </div>

      </div>
```

```html
        <div class="col-lg-4 col-md-6 d-flex align-items-stretch mt-4" data-
aos="zoom-in" data-aos-delay="100">

        <div class="icon-box">

          <div class="icon"><i class="bx bx-world"></i></div>

          <h4><a href="">Portable Charger</a></h4>

          <p>Portable charger supplies a full charge without ever leaving
the house. Easily installed in a variety of homes and designed for both indoor
and outdoor use, Wall Connector provides convenient, fast charging for every
homeowner and tenant, any time of the day</p>

        </div>

      </div>


        <div class="col-lg-4 col-md-6 d-flex align-items-stretch mt-4" data-
aos="zoom-in" data-aos-delay="200">

        <div class="icon-box">

          <div class="icon"><i class="bx bx-slideshow"></i></div>

          <h4><a href="">Parking Facility </a></h4>

          <p>Parking spaces are very important to cities. We provide
enough parking space for electric vehicles with charging facility.</p>

        </div>

      </div>


        <div class="col-lg-4 col-md-6 d-flex align-items-stretch mt-4" data-
aos="zoom-in" data-aos-delay="300">

        <div class="icon-box">

          <div class="icon"><i class="bx bx-arch"></i></div>

          <h4><a href="">Pick & Drop </a></h4>

          <p>we provide pick & drop facility from your home to our
charging station & then station to your home.We provide full security &
responsible for any damage during this service</p>
```

```html
          </div>

        </div>


      </div>


    </div>

  </section>
  <!-- End Services Section -->




  <!-- ======= Pricing Section ======= -->
  <section id="pricing" class="pricing">
    <div class="container" data-aos="fade-up">


      <div class="section-title">
        <!-- <h2>Pricing</h2> -->
        <h3>Check our <span>Pricing</span></h3>
        <p></p>
      </div>


      <div class="row">


        <div class="col-lg-3 col-md-6" data-aos="fade-up" data-aos-delay="100">
          <div class="box featured">
            <h3>Hourly</h3>
            <h4><sup>₹</sup>1000<span> /hour</span></h4>
```

we provide hourly charging service at price of ₹1000 per hour.

People can come at any time & charge their vehicle.

                                                    </div>
                                         </div>

<div class="col-lg-3 col-md-6 mt-4 mt-md-0" data-aos="fade-up" data-aos-delay="200">

<div class="box featured">

<h3>Monthly Pacakage</h3>

<h4><sup>₹</sup>20000 / month</h4>

It includes whole month subscription.
In this free charging for whole month including 1 vehicle service.

</div>

</div>

<div class="col-lg-3 col-md-6 mt-4 mt-lg-0" data-aos="fade-up" data-aos-delay="300">

<div class="box featured">

<h3>Anually</h3>

<h4><sup>₹</sup>30000 /year</h4>

It includes full year subscription.
In this free charging for whole year including 4 vehicle service.

</div>

</div>

```html
            <div class="col-lg-3 col-md-6 mt-4 mt-lg-0" data-aos="fade-up" data-
aos-delay="400">

              <div class="box featured">

                <!-- <span class="advanced">Advanced</span> -->

                <h3>Portable Charger</h3>

                <h4><sup>₹</sup>25000<span> /unit</span></h4>

                It is the most convenient charging solution for
apartments,<br>hospitality properties and workplaces.


              </div>

            </div>


          </div>


        </div>

      </section>

      <!-- End Pricing Section -->


      <!-- ======= Frequently Asked Questions Section ======= -->

      <section id="faq" class="faq section-bg">

        <div class="container" data-aos="fade-up">


          <div class="section-title">

            <!-- <h2>F.A.Q</h2> -->

            <h3>Frequently Asked <span>Questions</span></h3>

            <p><center><h5>Answer to your problems.</h5></center></p>

          </div>
```

```html
<ul class="faq-list" data-aos="fade-up" data-aos-delay="100">


        <li>

            <a data-toggle="collapse" class="" href="#faq1"><h5>Why do I
need a charger, can I not just use a 13A plug?</h5> <i class="icofont-simple-
up"></i></a>
                <div id="faq1" class="collapse show" data-parent=".faq-list">

                  <p>

                     A charger has multiple advantages over a 13A plug -<br><br>
```

1. Fast Charging: EV Chargers depending upon their rated capacity can charge
your EV at much faster rates (multiple times) compared to 13A plug point.

2. Safety: EV Chargers comes with many in-built protection systems which
enhances the overall safety.

3. Access Control: EV Chargers comes with OTP / RFID authorization systems.
So you can rest assured that no one can misuse charging point at your parking
lot without your permission.

4. Smart Features: Most EV Chargers comes with features like remote access
and control, smart charging etc. which are not available in 13A plug.

```html
                  </p>
                </div>
            </li>


        <li>

            <a data-toggle="collapse" href="#faq2"
class="collapsed"><h5>What is a standard installation?</h5> <i class="icofont-
simple-up"></i></a>
                <div id="faq2" class="collapse" data-parent=".faq-list">

                  <p>

                     Standard installation comprises of supplies and services which
```
are generally required at the time of installation such as one-time installation

activities as per Tata Power approved designs, certain length of cabling work, cable casing etc. It does not include any special requirement which may be required at site. Please read standard installation scope and Terms and Conditions in the offer for more details before confirming your order

```
          </p>
        </div>
      </li>


      <li>
        <a data-toggle="collapse" href="#faq3"
```
class="collapsed"><h5>What is the difference between the charger given to me by the car company and an EZcharge home charger?</h5> <i class="icofont-simple-up"></i>

```
        <div id="faq3" class="collapse" data-parent=".faq-list">
          <p>
```

EZcharge home chargers comes with multiple features which might not be there in basic charger provided by your car company. These features may include - Faster Charging rate, Safety & Protection, Access control, Smart Charging features etc.

```
          </p>
        </div>
      </li>


      <li>
        <a data-toggle="collapse" href="#faq4"
```
class="collapsed"><h5>How quickly can a home charger be installed, my car delivery is imminent?</h5> <i class="icofont-simple-up"></i>

```
        <div id="faq4" class="collapse" data-parent=".faq-list">
          <p>
```

EV Power has Service teams present in 30+ cities (including all metros and most of the major cities) in India. Home charger can be installed within even 3 days depending upon your location, site feasibility and stock availability. Please contact us for a more precise estimate.

```
          </p>
        </div>
      </li>


      <li>
        <a data-toggle="collapse" href="#faq5"
class="collapsed"><h5>Can I buy another brand charger myself from the
market and install it?</h3> <i class="icofont-simple-up"></i></a>
        <div id="faq5" class="collapse" data-parent=".faq-list">
          <p>
```

EV Charger should be compatible with your EV. It is recommended that you should buy chargers of a trusted brand only. Also, charger installation requires expertise since the electricity load can be quite high. Therefore, it is important that installation be done by authorized experts. Tata Power provides end-to-end customized solutions and offerings including EV charger supply, installation, CMS subscription and AMC.

```
          </p>
        </div>
      </li>


      <li>
        <a data-toggle="collapse" href="#faq6"
class="collapsed"><h5>Can I install the home charger myself? Or using my
building electrician?</h5> <i class="icofont-simple-up"></i></a>
        <div id="faq6" class="collapse" data-parent=".faq-list">
          <p>
```

EV Charger installation requires subject expertise since the electricity load can be quite high (several kW). Therefore, it is important that installation be done by experts only.

```
            </p>
          </div>
        </li>


      </ul>


    </div>

  </section>

  <!-- End Frequently Asked Questions Section -->


  <!-- ======= Contact Section ======= -->

  <section id="contact" class="contact">

    <div class="container" data-aos="fade-up">


      <div class="section-title">

        <!-- <h2>Contact</h2> -->

        <h3><span>Contact Us</span></h3>
```

Want more information, have a question about our services, or would like to discuss your needs with us? You are in right spot. Our response time for E-malis is usually within 24 hours, but if you need to talk with us sooner, just give us a call.

```
      </div>


      <div class="row" data-aos="fade-up" data-aos-delay="100">

        <div class="col-lg-6">
```

```html
        <div class="info-box mb-4">
          <i class="bx bx-map"></i>
          <h3>Our Address</h3>
          <p><center>Ring Road, Pardsinga, Nagpur, Maharashtra
440028</p></center>
        </div>
      </div>

      <div class="col-lg-3 col-md-6">
        <div class="info-box  mb-4">
          <i class="bx bx-envelope"></i>
          <h3>Email Us</h3>
          <p><center>@ezcharge.com</p></center>
        </div>
      </div>

      <div class="col-lg-3 col-md-6">
        <div class="info-box  mb-4">
          <i class="bx bx-phone-call"></i>
          <h3>Call Us</h3>
          <p><center>9028227660</p></center>
        </div>
      </div>

    </div>

    <div class="row" data-aos="fade-up" data-aos-delay="100">
```

```html
        <div class="col-lg-6 ">
          <iframe
src="https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d3721.499
249293451!2d79.00198821424715!3d21.132521089605373!2m3!1f0!2f0!3f0!3
m2!1i1024!2i768!4f13.1!3m3!1m2!1s0x3bd4eb422c52ce17%3A0xe9bf2291d4
2dad30!2sElectric%20Vehicle%20Charging%20Station!5e0!3m2!1sen!2sin!4v
1624968027106!5m2!1sen!2sin" width="550" height="450" style="border:0;"
allowfullscreen="" loading="lazy"></iframe>


        </div>


        <div class="col-lg-6">
          <form action="forms/contact.php" method="post" role="form"
class="php-email-form">
            <div class="form-row">
              <div class="col form-group">
                <input type="text" name="name" class="form-control"
id="name" placeholder="Your Name" data-rule="minlen:4" data-msg="Please
enter at least 4 chars" />
                <div class="validate"></div>
              </div>
              <div class="col form-group">
                <input type="email" class="form-control" name="email"
id="email" placeholder="Your Email" data-rule="email" data-msg="Please
enter a valid email" />
                <div class="validate"></div>
              </div>
            </div>
            <div class="form-group">
```

```html
                <input type="text" class="form-control" name="subject"
id="subject" placeholder="Subject" data-rule="minlen:4" data-msg="Please
enter at least 8 chars of subject" />
                <div class="validate"></div>
              </div>
              <div class="form-group">
                <textarea class="form-control" name="message" rows="5"
data-rule="required" data-msg="Please write something for us"
placeholder="Message"></textarea>
                <div class="validate"></div>
              </div>
              <div class="mb-3">
                <div class="loading">Loading</div>
                <div class="error-message"></div>
                <div class="sent-message">Your message has been sent.
Thank you!</div>
              </div>
              <div class="text-center"><button type="submit">Send
Message</button></div>
            </form>
          </div>


      </div>


    </div>
  </section>
  <!-- End Contact Section -->


  </main>
```

```html
    <!-- End #main -->


    <!-- ======= Footer ======= -->
    <footer id="footer">


      <div class="footer-top">
        <div class="container">
          <div class="row">


            <div class="col-lg-3 col-md-6 footer-contact">
              <h3>Ez Charge<span></span></h3>
              <p>
                Ring Road, Pardsinga,<br> Nagpur,<br> Maharashtra
440028<br><br>
                <strong>Phone:</strong>9028227660<br>
                <strong>Email:</strong>@ezcharge.com <br>
              </p>
            </div>


            <div class="col-lg-3 col-md-6 footer-links">
              <h4>Useful Links</h4>
              <ul>
                <li><i class="bx bx-chevron-right"></i> <a
href="#">Home</a></li>
                <li><i class="bx bx-chevron-right"></i> <a href="#">About
us</a></li>
                <li><i class="bx bx-chevron-right"></i> <a
href="#">Services</a></li>
```

```html
                    <li><i class="bx bx-chevron-right"></i> <a href="#">Terms
of service</a></li>
                    <li><i class="bx bx-chevron-right"></i> <a href="#">Privacy
policy</a></li>
                </ul>
            </div>


            <div class="col-lg-3 col-md-6 footer-links">
                <h4>Our Social Networks</h4>
                <p>Connect With Us</p>
                <div class="social-links mt-3">
                    <a href="#" class="twitter"><i class="bx bxl-
twitter"></i></a>
                    <a href="#" class="facebook"><i class="bx bxl-
facebook"></i></a>
                    <a href="#" class="instagram"><i class="bx bxl-
instagram"></i></a>
                    <a href="#" class="google-plus"><i class="bx bxl-
skype"></i></a>
                    <a href="#" class="linkedin"><i class="bx bxl-
linkedin"></i></a>
                </div>
            </div>


        </div>
      </div>
    </div>
  </footer>
  <!-- End Footer -->
```

```html
<div id="preloader"></div>
<a href="#" class="back-to-top"><i class="icofont-simple-up"></i></a>

<!-- Vendor JS Files -->
<script src="assets/vendor/jquery/jquery.min.js"></script>
<script src="assets/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
<script src="assets/vendor/jquery.easing/jquery.easing.min.js"></script>
<script src="assets/vendor/php-email-form/validate.js"></script>
<script src="assets/vendor/waypoints/jquery.waypoints.min.js"></script>
<script src="assets/vendor/counterup/counterup.min.js"></script>
<script src="assets/vendor/owl.carousel/owl.carousel.min.js"></script>
<script src="assets/vendor/isotope-layout/isotope.pkgd.min.js"></script>
<script src="assets/vendor/venobox/venobox.min.js"></script>
<script src="assets/vendor/aos/aos.js"></script>

</body>

</html>
```

TESTING AND VALIDATION

Validation is an automatic check to ensure that data entered is sensible and feasible. Validation is the security measures taken at the time of the execution of any program. It is necessary for the analyst to take the validation in their project as it provides more accuracy and systematic flow to project. Validation not only stops input of the false data but also provides the information in the form of message to the user clearly warn the user to input correct data type. Hence it plays an important role of a guide during input of data. Validation put it controls over the data in both character as well as integer data type. Whenever wrong data or invalid data is stored by the user it frees the message immediately.

Validation cannot ensure data is accurate. When programming, it is important that you include validation for data inputs.

- The validation tester is all about reporting the deviations by precision in order to obtain the maximum possible results. Each and every test case should be sharply written along with broadening the scope of understand ability.
- If you want to check whether your software meets the specific requirements or not then verification and validation testing is the must for you. During the Development process, v&v testing phases analyse your requirements.

Validation testing is important:
- To ensure customer satisfaction
- To be confident about the product
- To fulfil the client's requirement until the optimum capacity
- Software acceptance from the end-user

Validation input data:

It is essential that the input themselves along with the transaction requested are valid. Several texts can be incorporated into software to ensure the validity.

We consider many possible ways to validate input and they are as follows:

- ➢ Validation is done for the empty fields that if at all any field remains empty then website will prompt to enter the data in all the fields.

- ➢ Test is done for the name that only characters will be allowed to enter.

- ➢ To input e-mail id in the textbox it is compulsory to enter the valid email address like an email address should contain @gmail.com into its mail string.

- ➢ Contact number should be of minimum 10 numbers. Only numbers are allowed when entering the contact no.

- ➢ User should put valid charging station address which is selected.

- ➢ Vehicle numbers should be of minimum six characters. It can be digits, letters or any special characters.

- ➢ Vehicle model should be in digits, letter.

- ➢ Test is made with the data available in the database to book with the slot or to cancel the slot or to edit the details of the user.

IMPLEMENTATION, EVALUATION AND MAINTENANCE

IMPLEMENTATION:

Implementation phase is mainly concerned with the user training, site, and preparation and file conversion. It also involves final testing of the system. During implementation the component built during development are put into optional use.

Following are the points should be considered while doing implementation of the application:

• Testing, debugging and documentation program
. Converting data from old to new system
• Giving training to the user about how to operate the system
• Developing operating procedures for the computer operating staff.
• Establishing a maintenance procedure to repair and enhance system
• Completing Documentation
• Operating system on the user location and solving all the issues occurred while operation

Evaluation:

After the implementation stage, another important stage is project development is evaluation. After keeping the project in the working condition for some time, all the errors that are show in the computer program should be removed. The Programmer needs to correct the most hat the same errors should not be repeated. After evaluating the program and satisfying the needs of the user the program maintained fully to give the same functionally for what is as intended to be this stage should be implemented so as to regular check-up of errors with error /handling techniques. This stage is updating and correcting of the program w account for changing conditions or field experience. The evaluation MINESS includes the study of the existing system their and the drawbacks various To improve the system. The concentration should be on the satisfying the primary requirement of the user, the system is evaluated on the basis of

1. System availability

2. Compatibility
3. Correcting errors
4. Resolving necessary changes.
5. Specification changes.
6. Enhances or modifying the system maintenance.

Maintenance:

Maintenance is very crucial for success of any application, proper maintenance of the application makes it smooth working application Maintenance is done basically for two reason i.e. to correct software errors which occurs after the testing and implementation of the application when one user it and other reason is to enhance the software capabilities in response to changing organizational needs. User often requires additional feature after he she uses the application and becomes familiar with it. Some of the large companies gives AMC Annual Maintenance Contract) to other companies for regular maintenance of the software application. The cost of the maintenance increases the cost of the application software At a point of time it becomes feasible to perform the tasks related to the maintenance of the software Maintenance phase always occurs after the implementation of the application is done. It corrects all the previously undetected errors of the application and helps to do update in the application which is requited by the user

Maintenance is one of the stage in the SDLC (System Development Life Cycle). It is basically done for the estimation, controlling, and making modification to the implemented system.

FUTURE SCOPE

India is one of the top ten automotive markets in the world today and having highly increasing middle class population with buying potential and the steady economic growth. Here comes the potential need for alternative technologies in automobiles such as electric vehicles in India. The demand for EV is increasing, which means EV charging stations are going to be one of the basic needs of electric vehicles. The scope of the charging station in India is going to be bright. Large scale introduction of Plug-in electric vehicles, including plug-in hybrid electric vehicles and Battery Electric Vehicles have the potential to improve Indian energy and environmental landscape of personal transportation.

- Virtual event on electric vehicle and electric charging station.
- E-Vehicles have potential to improve energy & environmental landscape of personal transportation.
- EV charging stations are going to be one of the basic needs of electric vehicles.

1. **Costing:** The automotive industry in India is extremely cost responsive. This influences the expectations of customers for economic mobility choices.

2. **Public Transportation:** Public transport coverage in India has so far been limited. Still, the need for last-mile connectivity is increasing rapidly. New consumer industries with high potential for electrically powered systems are emerging in the form of last-mile transport needs, including 2 and 3-wheelers, cars, and buses.

3. **Reduced prices:** Driven by a technologically advanced scale, battery packs' costs have dropped, making them more cost-effective and accessible.

4. **Frameworks of policies and regulations:** EVs are favoured in central and state policies over ICE vehicles, particularly for public and institutional transport. EVs have become more attractive by allocating funds

specifically for EV production – from early subventions to non-fiscal initiatives.

5. **An effort to build charging infrastructure:** OEMs' confidence has also been strengthened by central and state government efforts to promote accessible public charging networks throughout the country.

6. **Leasing of Vehicles:** A vehicle leasing model is ideal for higher acceptance for commercial or taxi use for both passenger vehicles. Leasing for ICE vehicles is now in operation, minimizing the purchaser's initial expenditure and delivering bundled services such as repairs and insurance. This EV model requires a high initial investment but offers stable revenues due to electric vehicles' high cost. The lower mechanical wear in EVs, telecommunication, and vehicle health surveillance will manage repair costs and decrease residual value, which will increase financial profitability.

7. **Leasing of batteries:** As the battery corresponds to half the engine's cost, this model is highly suited to commercial vehicles and buses, as the high initial cost is minimized and made commercially feasible. The potential hazards include battery wear and tear, very complicated market models, and civil liability problems. This company can be developed through battery OEMs and leasing funding partners. However, it can be complicated by the inclusion of OEMs since all involved parties must harmonies. The model will all be taken on by ride-hailing aggregators, big private buses, state transit operators, and municipal buses.

8. **Sharing Vehicles:** Sharing mobility is an evolving industry with players developing an electric car network for point-to-point transport. This model helps minimize purchasing costs and decreases the cost of use by maximizing the use of assets. This also helps combat the issue of air pollution.

CONCLUSION

Electric cars and their charging stations are becoming increasingly more present in our lives, so it is important to bear in mind some of the minimum-security requirements discussed in this article.

It is also advisable to assess the proposed recommendations in the development stage and implement them, whenever possible, in order to avoid large expenses in modifying products or suffering attacks once the product is deployed in production. All of these tips allow for increased cybersecurity in charging stations and reduced exposure to both possible physical and logical attacks. Increasing the number of public charging stations is a must. Home and office charging are dominant charging forms. However, also the public charging infrastructure must keep pace with the current mass introduction of electric vehicles.

- User friendly charging infrastructure. Challenges here are, among other things, that several private and public actors are involved. Standardised and more user-friendly rules are required for parking and payment at public charging stations.

- Coordination of efforts. More test and demonstration projects are required for smart charging systems. Such efforts must yet comply with real needs of users and energy providers. A coordination within a municipality and/or region is therefore recommended.

- Planning and ensuring of power grid capacity. An early involvement of electricity companies in planning and construction of charging infrastructure is crucial for guaranteeing a sufficient supply of power at any time.

- Customise regional and city planning for e-mobility. This means that e-mobility, as a possible game changer of urban mobility, has to be considered much more in the future when it comes to urban planning. As noise and emission levels of traffic considerably decrease, possibilities for housing projects arise in areas, where to date they are still restricted by law.

- Changed behaviour is important for transition towards e-mobility. Automatisation may enable drastically changed behaviour as well as "servicification" will. Electrification may give the user the experience of 100% sustainability but in total the changes may lead to unwanted or wanted consequences depending on the sum of individual behaviours. This must be considered when planning for increased e-mobility.

BIBILOGRAPHY

While developing this project internet was the eternal support. Following are the websites referred by me which helped me developing my project:

1) **https://www.w3schools.com**
2) **https://www.tutorialspoint.com/css/index.html**
3) **https://www.w3schools.com/js/**
4) **HTML Black Book**
5) **HTML5 And CSS**

A

Project Synopsis

On

"Electric Vehicle charging Station"

Submitted to

G. S. COLLEGE OF COMMERCE & ECONOMICS, NAGPUR

AUTONOMOUS

In the Partial Fulfillment of

B.Com. (Computer Application) Final Year

Synopsis Submitted by

Vaishnavi Anil Mandavkar

Sivani Swaro

Under the Guidance of

Pravin J. Yadao

1. **Introduction: (Write 4 to 5 lines)**

Electric vehicle charging station is a window application which is made in PHP.As we know that during the past two decades electrification of transportation sector is gradually becoming a global trend due to environmental benefits from electric vehicle. Although the electrical vehicle charging post plays as a primary energy supply, public electric vehicle fast charging station is definitely an important backup energy supply system to the electric vehicle customers in case of urgent need.

2. Objectives of the project: (Write only 5 points)

1. Increase overall awareness and education regarding electric vehicle charging station.

2. Encourage off peak charging.

3. Reduce dependency on foreign oil.

4. Reduce greenhouse gases.

5. Remove barriers for customer.

3. Project Category: Window Application

4. Tools/ Platform/ Languages to be used:

Programming language: PHP
Operating System   : Window 8

5. Scope of future application: (Write 4 to 5 points)

1. In future, it has a relative abundance of renewable energy resources.

2. Provide Information regarding electric vehicles

3. Availability of skilled manpower in the technology and manufacturing sectors.

4. Provide 24/7services to public

Submitted by,   **Approved by,**

Vaishnavi Anil Mandavkar

Sivani Swaro

                                                               Prof. Pravin Yadao

Name and Signature of the student   **Project Guide**