

## SWIFT CHARGE

IT Is future....

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### Abstract:

The Swift Charge is a facility is used by Indian citizens who owns Electrical Vehicle, to find out the nearest charging station and book charging slots in advance. Currently if people want to charge their vehicles at charging stations they have to wait till charging slots to get empty and the time required may vary from type of e-vehicles.

It is estimated that the total potential demand for the full range of electric vehicles in India (mild hybrids to full electric vehicles) will be in the range of 5–7 million units in new vehicle sales by 2023.

As number of e-vehicles are increasing day by day. Crowd at charging stations is required to manage because e-vehicle takes time to charge and if crowd is present at charging stations, then it will take more time to get a slot for charging.

So, with the help of our project, we trying to minimize the waiting time required at charging stations to get slot by booking slot in advance and also helping user to find out the nearest charging station.

### Introduction:



An electric vehicle charging station, also called EV charging station, electric recharging point, charging point, charge point and electronic charging station (ECS) is an element in an infrastructure that supplies electric energy for the recharging of plug-in electric vehicles including electric cars, neighbourhood . electric Vehicles and plug in hybrids An electric vehicle also called an EV, uses one or more electric motors or traction motors for propulsion.

An electric vehicle powered through a collector system by electricity from self-contained with a battery or off-vehicle sources , solar panels or an electric generator to convert fuel to electricity.

Nowadays energy efficiency is a top priority. boosted by a major concern with climatic changes and by the soaring oil prices in countries that have a large dependency on imported fossil fuels, which leads to the demand of EV charging station in the country.

***Literature Review:***

Published- 05 May 2017

Electric vehicles charging infrastructure location  
a genetic algorithm approach.

1.Katerina Chrysostom ,Dimitri's Efthimios, ,  
Maria Morolake & Georgia Fotopoulos

Abstract:

As part of the overall goal of carbon emissions  
reduction European cities as well as Ashiya are  
expected to

encourage the electrification of urban transport. In  
order to prepare themselves to welcome electric  
vehicle.

The Electric Vehicle Charging Infrastructure  
optimization problem Location Problem that can  
be approached

by linear programming, multiple objective  
optimization and genetic algorithms increased  
number of Electric vehicles circulating in the city  
networks in the near future they are expected to  
deploy networks of public electric vehicle chargers.

2. Author:- Aishwarya Gajanan Belle, Yakshas're  
Rajaram Patil, Vikram B Patil

Review Paper on Charging of Electrical Vehicle

Abstract-

This type vehicles available in a variety of models  
with a varying ranges

and capabilities and plugged in to a source of  
electrical power to recharge. Now in

market two major battery technologies used in EVs  
are nickel metal hydride and

lithium ion (Li-ion).

this paper also evaluates the batteries and challenge  
of deploying an

expanded network of EV charging system.

This paper discuss about electrical charging  
stations its vehicle battery

Most of Electric vehicles use electric motors  
powered by electrical energy stored in a battery

for propulsion.

3. Review Paper on Electric Vehicle Charging

Mukesh Kumar Gupta

Suresh Gyan Vihar University, Jaipur

Date Written: 17 may 2019

Abstract:

This trend is driven by several factors including the  
need to reduce air and noise pollution .Battery  
powered electric vehicles are gaining popularity  
worldwide.

The main drawback of electric vehicle is its limited  
range and the long time duration is required to  
charge the electric batteries.

In recent years significant progress has been made  
to accelerate the charging time of the electric

vehicle batteries through pulse charging rather than  
supplying continuous current and voltage.

4. Electric Vehicle Charging Station

Published paper ID: JETIR2004477, Registration  
ID: 231193

Published In: Volume 7 | Year April-2020

Abstract:

This report discusses about the potential need for  
electric vehicles charging station

infrastructure and its challenges for the Indian  
scenario. With increase in privatization ,  
banalization & expansion of distributed and  
renewable power generation of Indian electricity  
distribution ,transmission as well as market  
processes related to the allocation of

energy & energy mix are undergoing an evolutionary development with improved

reliability & efficiency

A structured analysis of parameters is performed for the commercial,

scopes of electric vehicles in existing energy market. Market based and regulatory concerns are

considered to outline a scenario where an aggregator provides ancillary grid services & controls the charging of electric vehicles.

**5. An analysis of electric vehicle charging station structure** Author Muhammad Shahid Mastoid Shen Xian Zhuang entered 23 May 2022, Revised 18 August 2022, Accepted 4 September 2022, Available online 17 September 2022.

**Abstract** This paper discusses the crucial factors when planning electric vehicle charging structure. This paper provides information about technological developments & planning that can be used to ameliorate the design and perpetration of charging station structure. A comprehensive review of the current electric vehicle script the impact of EVs on grid integration. Electric Vehicle optimal allocation provisioning are presented. A significant metamorphosis occurs encyclopaedically as transportation switches from reactionary energy- powered to zero and ultra-low tailpipe emigrations vehicles. The transition to the electric vehicle requires an structure of charging stations with information technology, ingenious, distributed energy generation units, favourable government programs. In particular, this paper analyses exploration and developments related to charging station structure, challenges sweats to regularize the structure to enhance unborn exploration work. In addition, the optimal placement of rapid-fire charging stations is grounded on profitable benefits and grid impacts.

**6. Electric Vehicles Charging Technology Review and Optimal Size Estimation** Authors Morris Brenna, Federica Frikadelle, Carola Leone & Michela Longo Journal of Electrical Engineering & Technology ,Published 02 October 2020

**Abstract**

multitudinous different types of electric vehicle charging technologies are described in literature and executed in practical operations. This paper presents an overview of the being and proposed EV charging technologies in terms of motor topologies,, power flux power situations, directions, charging control strategies. An overview of the main charging styles is presented as well, particularly the thing is to illuminate an effective and fast charging fashion for lithium ions batteries concerning dragging cell cycle life and retaining high charging effectiveness. Once presented the main important aspects of charging technologies and strategies, in the last part of this paper, through the use of heritable algorithm, the optimal size of the charging systems is estimated and, on the base of a sensitive analysis, the possible future trends in this field are ultimately valued.

### ***Propose work:***

Swift Charge is a platform where we are giving facilities to users like finding nearest charging stations. The purpose of this project is to minimize the waiting time of customers, manage the crowed at charging stations, increase the productivity of charging stations, adding the new charging stations in the current network of charging stations.

There is a wide scope for Ev's in four-wheeler market, auto rikshaws, goods vehicle, bus as well as two wheelers. All of this market is waiting for a change. We can integrate this web app with restaurants and malls which have charging points in their parking, we can also make the mobile application for this Swift Charge. In future demand for e-vehicles will increase more rapidly so need to manage this crowed of e-vehicles at charging

stations this can be achieved by increasing number of charging stations

## **Operating Environment-Hardware and Software Used For System:**

### **1 Hardware Platform:**

The hardware infrastructure requirements for Swift Charge will be addressed in the Infrastructure and Deployment Architecture document.

### **2 Software Platform:**

- Front-end: - React Bootstrap.
- Back-end: - Spring boot / MySQL.

### **3 Supported Tools:**

- Eclipse, Vs Code.

### ***Detail Description of Technology Used We've developed Swift Charge System.***

We've developed this design on the Windows Operating System. We work on colourful Technology for developing WEB runners we work on colourful technologies like the frontal end we used Reply Bootstrap. For the Back end we used the Spring charge, MySQL. The supporting tools that we used to develop this system are the decline, Vs Code.

### **MySQL**

MySQL is a relational database operation system(RDBMS) that runs as a garçon furnishing multi-user access to a number of databases. MySQL is a popular choice of database for use in web operations and is an open source product. The process of setting up a MySQL database varies from host to host, still we will end up with a database name, a stoner name and a word. Before

using us database, we must produce a table. A table is a section of the database for storing affiliated information. In a table we will set up the different fields which will be used in that table. Creating a table in phpMyAdmin is simple, we just class the name, elect the number of fields and click the ' go ' button. we will also be taken to a setup screen where you must produce the fields for the database. Another way of creating databases and tables in phpMyAdmin is by executing simple SQL statements. We've used this system in order to produce our database and tables.

### **Java Spring Boot**

Java Spring Framework is a popular enterprise position ,open source, frame for creating standalone product grade operations that run on the Java Virtual Machine. Java Spring Boot is a tool that makes developing web operation and micro services with Spring Framework lightly through three core capabilities

1 bus configuration

2 An opinionated approach to configuration

3 The capability to produce standalone operations These features work together to give you with a tool that allows you to set up a Spring- grounded operation with minimum configuration and setup.

### **ReactJS**

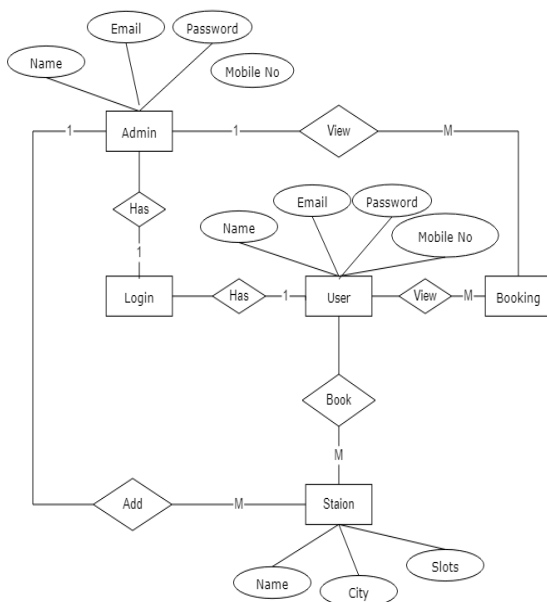
ReactJS is JavaScript library used for erecting applicable UI factors. According to React sanctioned attestation, following is the description – Reply is a library for erecting compostable stoner interfaces. It encourages the creation of applicable UI factors, which present data that changes over time. Lots of people use Reply as the V in MVC. Reply objectifications down the DOM from you offering a better performance ,simpler programming model. Reply can also render on the garçon using knot, and it can power native apps using React Native. Reply tools one- way reactive data inflow, which reduces the boilerplate and is

easier to reason about than traditional data list.  
 Reply Features • JSX – JSX is JavaScript syntax extension. It is not necessary to use JSX in React development, but it's recommended. • factors – React is each about factors. You need to suppose of everything as a element. This will help you maintain the law when working on larger scale systems. •

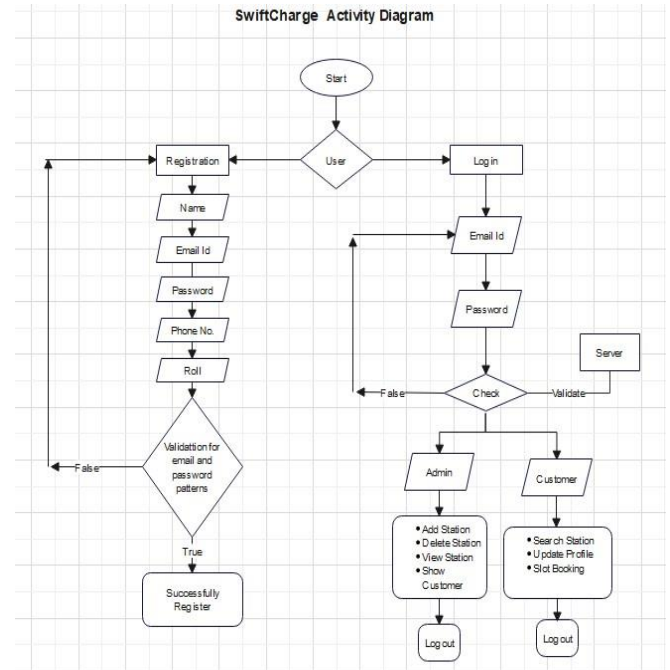
Unidirectional data inflow and Flux React tools one way data inflow which makes it easy to reason about your app. Flux is a pattern that helps keeping your data multiple directionl. • License React is certified under the Facebook Inc. Attestation is certified under CC in4.0.

## ANALYSIS AND DESIGN –

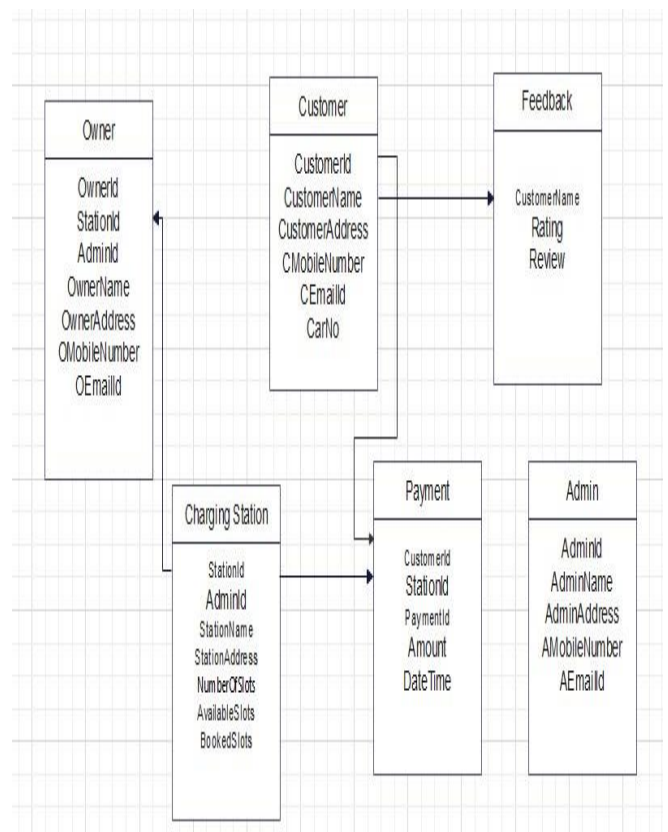
### ER Diagram:



### Table Structure :



### Activity Diagram:



### **Proposed Enhancement:**

There are numerous places where we can ameliorate. The following are the features that we're about to apply in near future.

1. In future, we give hunt installations like order wise searching or price wise searching.
2. give announcements to stoner about offers and abatements.
3. We can develop mobile operation for utmost of the druggies who uses smart phones rather than cybersurfs.
4. In the future, I want to Enhanced my design with thee admin part of online flowers, galettes etc shopping.
5. Add further product types in web point.

### **CONCLUSION:**

The design and implementation of this system environment is such that customer could search charging station and also book their slots which they want. Also, this software environment is made for two wheeler, three wheeler and also for four wheeler electric vehicles. After analysing the cost benefit analysis of the current system, we conclude that the advance booking system is best. It also reduces the burden of searching charge station and wasting time in queue. The system is highly user friendly and is well efficient to ease interactions with admin and customer. The system is done with an insight into the necessary modification that may require in the future. Finally the total system can be maintained successfully and can be upgradable as per new implementations

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