



JSS MAHAVIDYAPEETHA
JSS SCIENCE AND TECHNOLOGY UNIVERSITY
SRI JAYACHAMARAJENDRA COLLEGE OF ENGINEERING, MYSURU
DIAMOND JUBILEE YEAR-2023



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



ELECTRIC VEHICLE NAVIGATION ASSISTANCE SYSTEM

TEAM MEMBERS

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01

**Limited Driving
Range**

02

**Charging
Infrastructure**

03

Charging Time

04

Battery Breakdowns

05

**Inefficient Route
Planning**

WHY?

The slide features several abstract, organic shapes in shades of purple and blue. A large, irregular shape is in the top right corner. A smaller, more rounded shape is in the bottom right corner. A large, flowing shape is in the bottom left corner. These shapes serve as a decorative background for the text.



Advantages

Ensuring availability

Pre-booking an EV charging station ensures availability for long-distance travel and effective journey planning.

Planning your journey and saving time

Planning charging locations and times helps with route planning and stop scheduling. Pre-booking a charging station saves time and avoids waiting in line.

Avoiding range anxiety

Alleviating range anxiety by knowing where and when to charge increases confidence in travel plans



Key Features

Smart Navigation for EVs

Create a application that integrates real-time charging station data with navigation capabilities.

Hassle Free Charging

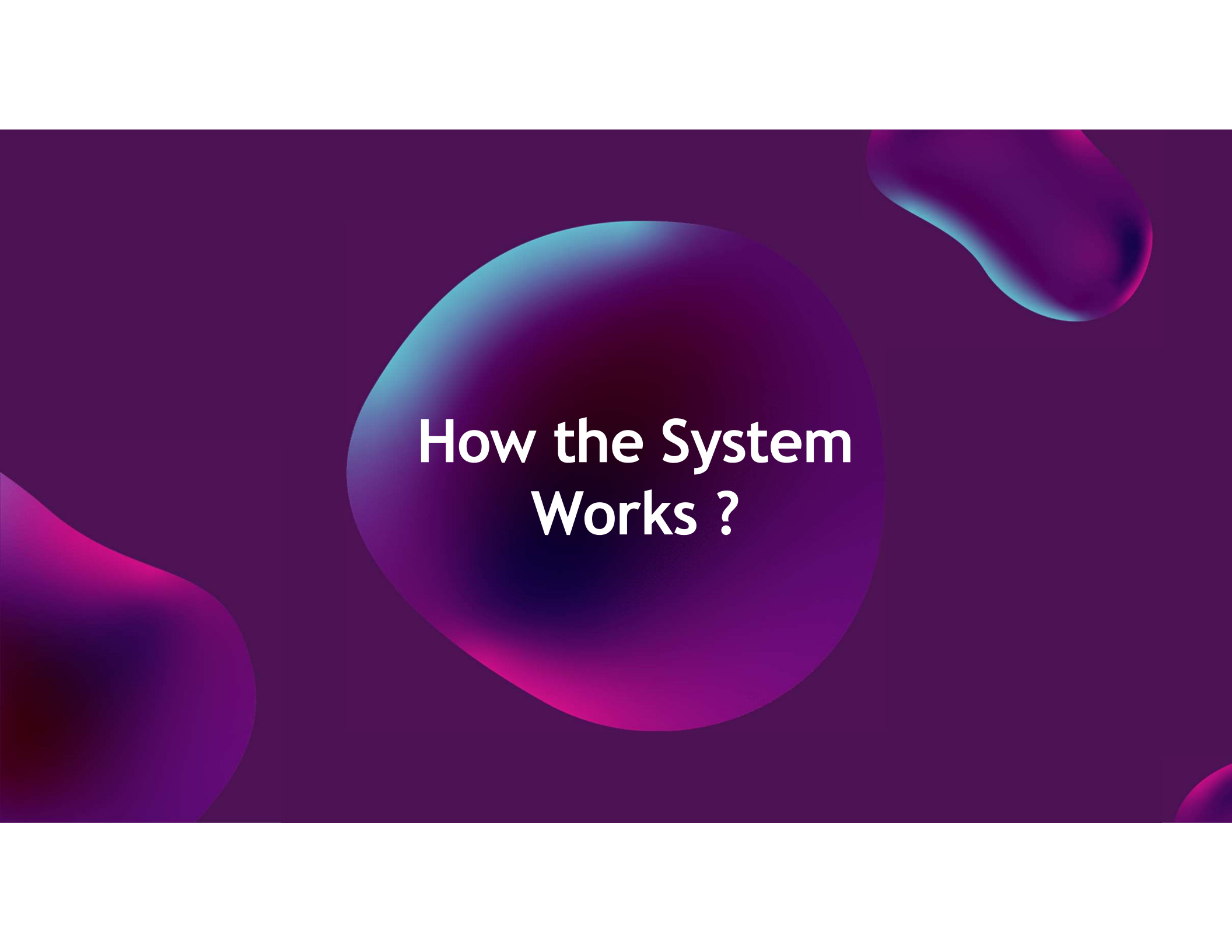
Enable EV users to reserve and pay for charging slots in advance through a secure online platform

On-Demand Roadside Assistance

Provide real-time assistance for EV users in the event of a breakdown or other issue through a mobile app.

Technologies Used

- **Database: MongoDB**
- **Mapping libraries: Google Maps API like OpenStreetMap**
- **Routing algorithm: A* algorithm**
- **Frontend technologies: HTML, CSS, and JavaScript are used for building the user interface, React is being used for more complex interfaces**
- **Web frameworks: Django is used to build the web application backend.**

The background is a deep purple with several organic, flowing shapes in shades of blue and magenta. A large, central, glowing sphere with a blue-to-purple gradient is the focal point. The text is centered within this sphere.

**How the System
Works ?**



Smart Navigation

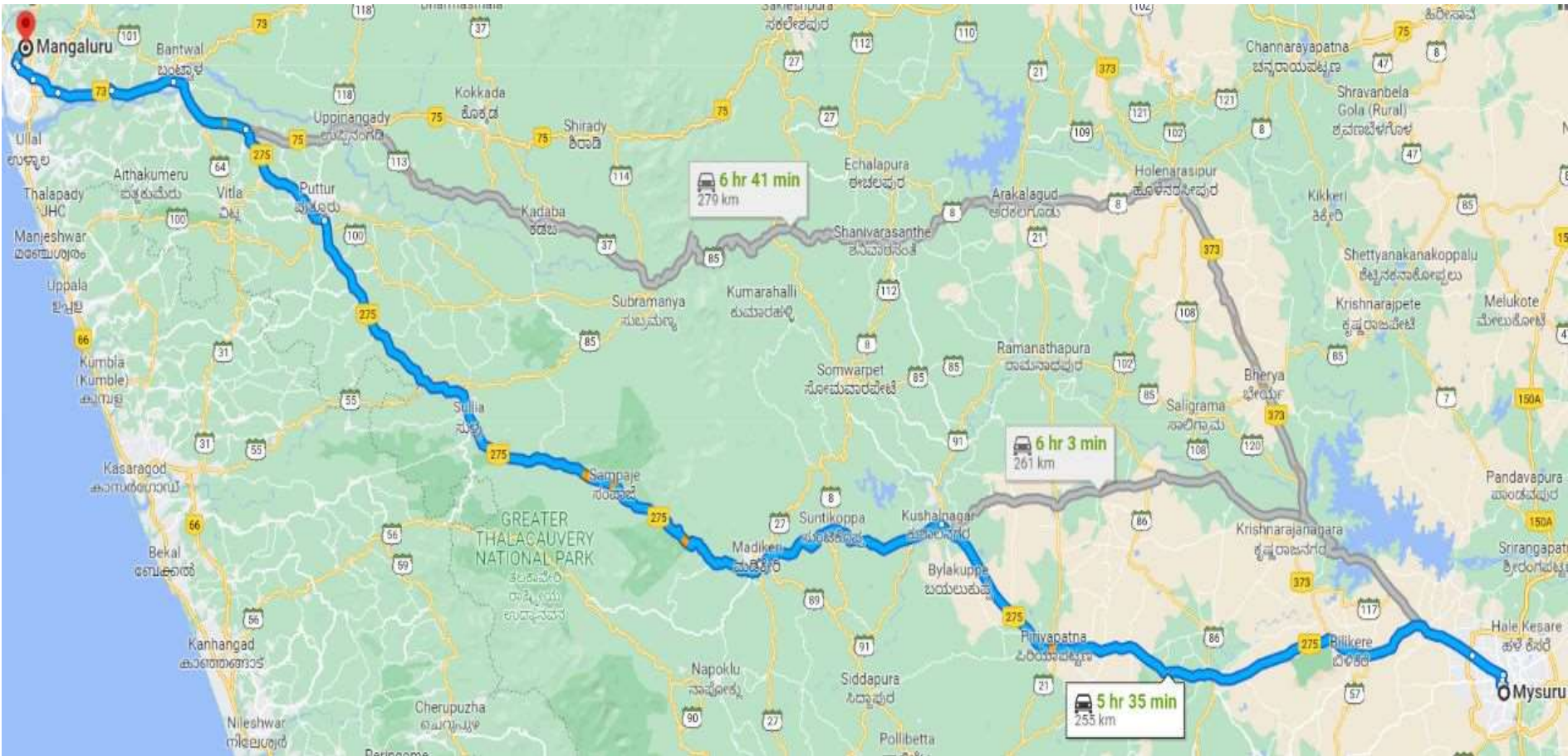


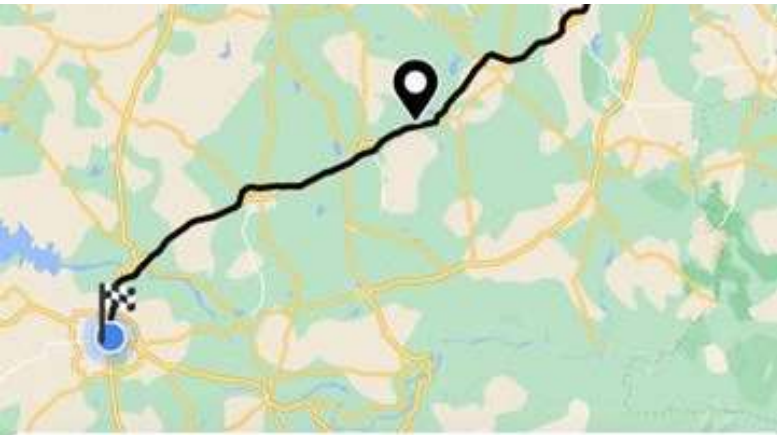
Breakdown Assistance



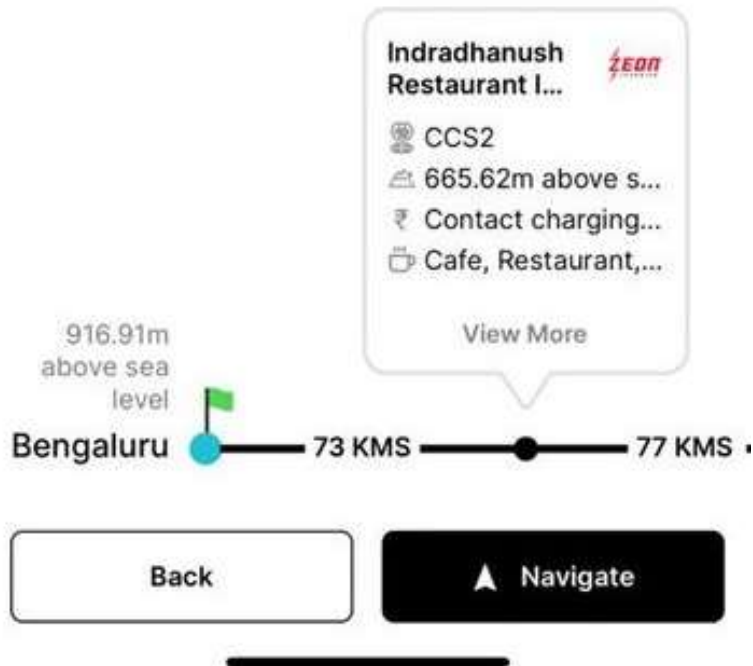
Charging Slot Booking System

HOW GOOGLE WORKS



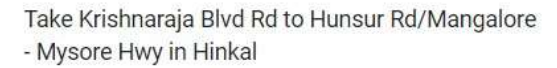


Smart Routing



1. Select source and destination
2. Mapping of source and destination to its corresponding latitude and longitude co-ordinates.
3. Map Creation
4. Selection of Charging Stations along the route.
5. Heuristic Calculation
6. Marking of charging stations in the navigation map

Breakdown Assist



850 m

Electric vehicle charging station · 2203 60 New
Sayyaji Rao Road, Nelson Mandela Rd
Open 24 hours

Charging Slot Booking

V POWER Charging Station

No reviews

Electric vehicle charging station ·
PFWH+PXW, Shree Ganesh Building

3

Navigate

Book Slot

Zeon Charging Station

2.6 ★★☆☆☆ (5)

Electric vehicle charging station · 2203 60 New
Sayyaji Rao Road, Nelson Mandela Rd
Open 24 hours

2

Navigate

Book Slot

Electric Vehicle Charging Station

4.9 ★★★★★ (15)

Electric vehicle charging station ·
Thalathmane, Post
Open 24 hours

4

Navigate

Book Slot

Slot Booking

01

**Finding available
charging stations**

02

Selecting a time slot

03

**Confirming the
booking**

04

**Arriving at the
charging station**

05

**Completing the
charging and
payment process**

Breakdown assistance

Breakdown assistance for electric vehicles is a service that provides roadside assistance and repair services to electric vehicle drivers who experience a breakdown.

Process

- Go to breakdown assistance section.
- Enter location, vehicle info, and issue.
- Website shows list of services with contact info and pricing.
- Select service and make arrangements.



Breakdown Assistance

**Shashi auto electrical works - Car A/C ,
Battery & repair services**

4.1 ★★★★★ (14)

Car repair and maintenance service · NH66,
Maruthi Kripa building , ujjodi

Navigate



ELECTRIC VEHICLES - MANGALORE

5.0 ★★★★★ (32)

Two Wheeler Dealer · PAM ARCADE

Navigate



**GoMechanic - Car Helpline
Mysore**

4.1 ★★★★★ (10)

Car Service Station · 2121 N,
Hunsur Rd

Navigate



The image features a white background with the text "Thank You" centered. There are three abstract, organic shapes in shades of purple and blue. One shape is in the top right corner, another is in the bottom left corner, and a third, smaller one is in the bottom right corner.

Thank You