**A Project Proposal**

**On**

**Web Application with Android apps and GIS for Electric Charging Station and Vehicles Users.**

**Proposed for: Electric Charging Station and Vehicles Users**

**Proposed by: Legend Engineering Training & IT Solution**

[www.legendsoftbd.com](http://www.legendsoftbd.com)

**Date:** 30 March 2018

# Introduction:

Thank you for your interest in partnering with “**LEGEND ENGINEERING TRAINING & IT SOLUTION**” for your “**Web Application with Android apps and GIS for Electric Charging Station and Vehicles Users**” .

At Legend IT Solution, we hold one goal above all others: 100% client satisfaction. Our in-house team of web designers, copywriters, graphic designers, and developers uphold the highest standards for project planning and execution, also performed different types of training. We’re dedicated to train up for developing skill and enhancement.

We’ve trained professional and Industrial training and other skill development

In this proposal, you’ll find that what we feel is the optimal solution for your website and software development needs, along with the associated delivery timeline, costs, and project terms. Once you’ve reviewed this proposal thoroughly, simply electronically sign it at the bottom to indicate your approval.

Thanks again for the opportunity to earn your business!

About Us:

Legend IT Solution is a top provider of professional Software, IT Solution, Web site design and software development. We have over 3 years of experience in the web development field with a long list of satisfied customers. We will be happy to provide additional references upon request.

We have a clear understanding of the Software development requirements, and we have the knowledge, skills and experience to successfully complete the Software project. We have successfully completed different types of industrial management software. Our Company is doing some great activities and continuous development for responsible, passionate, rhythmic, skilled and active developer team. They are well-wisher and have enough experience for taking any challenging work which interpreted with new technology like GIS, Google Map integration with web application, Big Data and also some network technology such as CRN (Cognitive Radio Network).

Company Portfolio:

We have developed different types of Software and Apps.

Here some given below:

1. Charts of Accounts for Any Group of Industries.
2. Production Management System such as

* Auto Rice Mill Management
* Auto Bricks Field Management
* Jute Mill Management

1. Co-Operative Management or Micro Credit business.
2. Inventory or Ware house Management
3. Web Application with Apps and GIS for Cargo System (Ongoing Project)
4. Hospital or Diagnostic System Management
5. Cold Storage Management
6. Dealership or whole sale business software
7. School, College, University portal with Library, HRM, Payroll, Online registration, Admission, Exam, Result Management Payment Strategy etc.
8. Polytechnic Management for Technical Education (Diploma, BSc)

Developers Profiles:

List of some developers and some others info are given below in tabular form:

|  |
| --- |
| **Name:** Engr. Md. Motassem Billah  **Designation:** Managing Director and Project Manager  **Email:** motassem0281@gmail.com  **Experts on Topic:** Software Analysis, Database Design, Software Testing, C, C++, Java, Python, Network Design (CCNA), Big Data, Predictive Analysis, BI & A, Power BI, Tableau. |
| **Name:** Md. Nasir Hossain  **Designation:** Senior Software Developer.  **Email:** mnasirmollah@gmail.com  **Experts on Topic:** Java programming, Spring Boot 2, Rest full API, swagger, Apache camel for stream cashing, Spring Data JPA, Spring security 4.3.2, Auth2 Authentication for API security. React JS, React Bootstrap, Redux, Saga, Selector, Reducer, Jqx grid, Faker & js pdf for reporting, I report. |
| **Name:** A K M Rakib Hasan  **Designation:** Senior Software Developer.  **Email:** rakibhasan880@gmail.com  **Experts on Topic:** PHP, Database Design, My SQL,  Yii Framework, Cake PHP, Laravel Framework, Bootstrap, Expert on Java Script (JS), HTML-5, CSS-3, Also have Java Programming Knowledge. |
| **Name:** Engr.Motahar Bin Ataur  **Designation:** Software Developer.  **Email:** mrhsajib.cse@gmail.com  **Experts on Topic:** PHP, Database Design, My SQL,  Yii Framework, Word press Theme development, Laravel Framework, Bootstrap, Expert on Java Script (JS), HTML-5, CSS-3. |
| **Name:** Chayan Chandra Majumdar  **Designation:** Software Developer.  **Email:** chayancseduet@gmail.com  **Experts on Topic:** Java programming, Spring Boot 2, Rest full API. |
| **Name:** Engr.Manik Ullah  **Designation:** Web Developer.  **Email:** engmanik11@gmail.com  **Experts on Topic:** PHP, Word press Theme development, Bootstrap, Expert on Java Script (JS), HTML-5, CSS-3. |

Project Description:

Electric Charging Station:

An electric vehicle charging station, also called EV charging station, electric recharging point, charging point, charge point and EVSE (electric vehicle supply equipment), is an element in an infrastructure that supplies electric energy for the recharging of electric vehicles, such as plug-in electric vehicles, including electric cars, neighborhood electric vehicles and plug-in hybrids.

As plug-in hybrid electric vehicles and battery electric vehicle ownership are expanding, there is a growing need for widely distributed publicly accessible charging stations (some of which support faster charging at higher voltages and currents than are available from residential EVSEs). Many charging stations are on-street facilities provided by electric utility companies or located at retail shopping centers and operated by many private companies. These charging stations provide one or a range of heavy duty or special connectors that conform to the variety of electric charging connector standards.

Charging stations fall into four basic contexts:

* Residential charging stations: An EV owner plugs in when he or she returns home, and the car recharges overnight. A home charging station usually has no user authentication, no metering, and may require wiring a dedicated circuit. Some portable chargers can also be wall mounted as charging stations.
* Charging while parked (including public charging stations) – a commercial venture for a fee or free, offered in partnership with the owners of the parking lot. This charging may be slow or high speed and
* encourages EV owners to recharge their cars while they take advantage of nearby facilities. It can include parking stations, parking at malls, small centers, and train stations (or for a business's own employees).
* Fast charging at public charging stations >40 kW, delivering over 60 miles (100 km) of range in 10–30 minutes. These chargers may be at rest stops to allow for longer distance trips. They may also be used regularly by commuters in metropolitan areas, and for charging while parked for shorter or longer periods. Common examples are CHAdeMO (a company that designs and sells standardized chargers), SAE Combined Charging System, and Tesla Superchargers.

Battery swaps or charges in under 15 minutes. A specified target for CARB credits for a zero-emission vehicle is adding 200 miles to its range in under 15 minutes. In 2014, this was not possible for charging electric vehicles, but it is achievable with EV battery swaps and Hydrogen Fuel Cell vehicles. It intends to match the refueling expectations of regular drivers.

Battery capacity and the capability of handling faster charging are both increasing, and methods of charging have needed to change and improve. New options have also been introduced (on a small scale, including mobile charging stations and charging via inductive charging mats). The differing needs and solutions of various manufacturers has slowed the emergence of standard charging methods, and in 2015, there is a strong recognition of the need for standardization. (From Wiki).

Geographic Information System (GIS):

A geographic information system (GIS) is a system designed to capture, store, manipulate, analyze, manage, and present spatial or geographic data. The acronym GIS is sometimes used for geographic information science (GI Science) to refer to the academic discipline that studies geographic information systems and is a large domain within the broader academic discipline of geo informatics. What goes beyond a GIS is a spatial data infrastructure, a concept that has no such restrictive boundaries.

In general, the term describes any information system that integrates stores, edits, analyzes, shares, and displays geographic information. GIS applications are tools that allow users to create interactive queries (user-created searches), analyze spatial information, edit data in maps, and present the results of all these operations. Geographic information science is the science underlying geographic concepts, applications, and systems.

GIS can refer to a number of different technologies, processes, and methods. It is attached to many operations and has many applications related to engineering, planning, management, transport/logistics, insurance, telecommunications, and business. For that reason, GIS and location intelligence applications can be the foundation for many location-enabled services that rely on analysis and visualization.

**Google Maps:**

Google Maps is a web mapping service developed by Google. It offers satellite imagery, street maps, 360° panoramic views of streets (Street View), real-time traffic conditions (Google Traffic), and route planning for traveling by foot, car, bicycle (in beta), or public transportation. Google Maps offers an API that allows maps to be embedded on third-party websites

**Google Maps API:**

After the success of reverse-engineered mashups such as chicagocrime.org and housingmaps.com, Google launched the Google Maps API in June 2005 to allow developers to integrate Google Maps into their websites. It is a free service, and currently does not contain ads, but Google states in their terms of use that they reserve the right to display ads in the future.

By using the Google Maps API, it is possible to embed Google Maps site into an external website, on to which site specific data can be overlaid. Although initially only a JavaScript API, the Maps API was expanded to include an API for Adobe Flash applications (but this has been deprecated), a service for retrieving static map images, and web services for performing geocoding, generating driving directions, and obtaining elevation profiles. Over 1,000,000 web sites use the Google Maps API, making it the most heavily used web application development API.

The Google Maps API is free for commercial use, provided that the site on which it is being used is publicly accessible and does not charge for access, and is not generating more than 25,000 map accesses a day Sites that do not meet these requirements can purchase the Google Maps API for Business.

The success of the Google Maps API has spawned a number of competing alternatives, including the HERE Maps API, Bing Maps Platform, Leaflet and Open Layers via self-hosting.[citation needed]. The Yahoo! Maps API is in the process of being shut down.

In September 2011, Google announced it would discontinue a number of its products, including Google Maps API for Flash.

After analyzing all the discussion above theory from Wikipedia we have finalize to develop an Apps that resolve the charging problem of any vehicles quickly. The Apps will work using GIS tools and Google Map APIs and also will have a Web Application for registering the charging stations.

**Project proposals**

There are several steps have to be maintained to develop or manage this application:

**Charging Stations:**

1. It should be register or include all the Charging Station according to specific zip code or location.
2. How many vehicles will be charged at a time in a specific Charging station or how many charging slots have in one Charging station it should be countered and input into this application
3. How many times needs to complete charging of one vehicle according to vehicles types or others factors it should be verified
4. Payment strategies have some terms and condition, like 1 hour charging of any vehicle is $20.

**Users Sign In and Sign Out:**

When a vehicle driver or a vehicle owner needs to charge his vehicle:

**Step1:** He has to go online and enter into this apps (Named Charging apps) then search the nearest charging point from his current location.

**Step2:**  The apps will show all nearest charging station with available charging slots. Also apps will show the distance between vehicles and charging station.

**Step3:** Then Rider can choose his preferable charging station and charging slot then he can gives booking order and can payment online.

**Step4:** before booking he can register himself on this app for future service and facility.

**Step5:** There have some others special feature for rating and commissions.

**Development tools:**

1. For GIS we can use different types of GIS tools like Arc GIS.
2. Using different types of Google Maps API, we can generate location.
3. Using distance Matrices Algorithm we can find out the distance between vehicles and charging station.
4. Nearest neighbor Algorithm can helps to find most nearest charging station.
5. DFS Algorithm or Modified DFS Algorithm can helps to find available node or free slots.
6. For Web application development we can use Java programming, Spring Boot 2, Rest full API, swagger, Apache camel for stream cashing, Spring Data JPA, Spring security 4.3.2, Auth2 Authentication for API security. React JS, React Bootstrap, Redux, Saga, Selector, Reducer, Jqx grid, Faker & js pdf for reporting, I report etc.
7. For developing Android Apps we can use apps development SDK or other related software.
8. For database design we can use My SQL Server or Oracle database management software.
9. Finally we can integrate all the APIs, Algorithm, Programming languages, database using some others software tools and hardware.

**Comparing Other Apps:**

1. Using Uber Apps we can take a taxi cab but Uber apps cannot view all the seat of any car or Microbus. For this case we cannot booked any specific seats but our apps can facilitate.

**Others Applicable Sectors and implementations:**

1. This application can be used some others sectors like Cargo System management.
2. Filling station, Gas Station etc.

If any query or suggestion please inform us. We would be pleasure and more efficient for client satisfaction. The entire requirement has to be done as client requirement also.

Thank you so much for your great response.