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VEHICLE TRACKING SYSTEM USING GPS NAVIGATION

Modern people cannot imagine their lives without phones, smartphones or tablets. In fact, people need to spend less time for waiting. Therefore, a wide variety of applications are being invented that help us in everyday life. Communication, data exchange, data collection and information retrieval can be possible with the Internet and mobile applications.

One of such developments is the system of GPS (Global Positioning System) - a collection of electronic items for determining the position, the velocity of the object on the surface or in the atmosphere. The provisions of the object is calculated by the use of GPS-receiver that receives and processes the satellite signals space segment of GPS, and determines the exact coordinates of such system in ground control centers.

Sensor GPS in mobile devices can be used not only for its intended purpose (for navigation or determining the coordinates), but also for a variety of other, often non-obvious, at first glance, tasks. For example, the utility "Here I am 2" is used to determine the coordinates of the user, display it on the map, and send the link to Google Maps via SMS, email or other services to close friends or relatives. The "Parent Control" can time determine the position of the child (relative, friend) at any time, or receive the notification when the child has left the specified location (such as school).

A significant advantage of GPS is that GPS is available in locations where there is no mobile network.

To develop mobile applications that can use GPS is much recommended to use PhoneGap. PhoneGap (a platform used to develop the applications with support for HTML5 (Hypertext Markup Language), which allows you to create native applications with applying web technologies, and provides the access to powerful API.

The benefits PhoneGap are:

1. When we create a mobile application we can use the code that has been used on the main site;

2. The application will run on any mobile device that has a browser;

3. In HTML, CSS and JavaScript is easier to write and debug application than in Java (or Objective-C for iOS);

4. It is much easier to find a web developer, than Java- programmer or Objective-C-developerer;

5. With using JavaScript we can get access to the API device having the opportunity to control the camera, contacts, files and other hardware advantages.

Another advantage of this approach is that PhoneGap is not platform-specific. This means that if you have a single codebase (even on plain HTML) - PhoneGap easily encloses it in any mobile platform: for example, Apple IOS, Google Android, Windows Phone 7, etc. So you get the best opportunities, as well you save the time spent on cross-platform development. Besides, there in no need to learn a few of languages.

What is a web application? A web application - a client-server application where the client is the browser and a web server is the. The logic of a web application is distributed

between the server and client, data storage is performed mostly on the server, exchange of information takes place over the network. One advantage of this approach is the fact that customers do not depend on the particular user's operating system, so the web application is cross-platform services. The web-based applications which are loaded into the mobile Web-browser are different from the buit0in ones. Their code is developed using Web-based technologies (HTML, JavaScript and CSS), which are not dependent on the operating system of the device. HTML and JavaScript are well known to Web-developers for Web-pages desktop browsers creating. Most of the mobile Web-browsers can render the same Web-pages, but Web-sites often provide mobile version with a smaller amount of information and faster loading (due to smaller screen sizes and slower network).

To run Web-based applications a user enters the URL-address in the mobile Web-browser. Since the loading is finished, the Web-page becomes an access point in Web-based application. Web-based applications do not propagate via storage applications; they are links which can turn to other Web-pages, emails or even write on paper.

I have developed the mobile application and website that allows you to track the vehicles using GPS-navigation.

The following technologies and development environments are used:

1. Operating system Windows, OS X or Linux.

2. Java Development Kit (JDK) 5 or JDK 6 (JRE is not enough).

3. Integrated development environment Eclipse (Eclipse Helios V3.6 or higher) or IBM Rational Application Developer V8.

4. Android SDK and platform (12 or higher).

5. Plug Android Development Toolkit (ADT) for Eclipse.

6. PhoneGap SDK (V1.0.0 or later).

7. Google Maps API

Google Maps is the world's most popular online mapping service. Google Maps API is used by more than 800 thousands of sites and the number of users of the mobile version is more than 250 million.

API Google Maps allows you to add easy-to-use interactive maps on the public website. This feature improves the working environment of users, making it easier for to find information about the organization. For this reason Maps API Google acquired the high popularity throughout the world. If Google maps play an important role on a public web site or are used in domestic applications for employees, organization needs enterprise-class application that handles a large number of visits and provides needed support.

The principle of my development is as following. A driver of a vehicle loads the application that will transfer to php-server data about the current location by using GPS-navigation. The user clicks on when a website gets the opportunity to choose the desired route number, the track number of vehicles, and their location in real time and sees this on the map of Google Maps. There is also a form of authorization that will log in by an administrator who provides the ability to add the numbers of routes, vehicles,the driver cell phone numbers and general information on the site.

So, the given application is developed using the latest technologies such as PhoneGap, HTML5, CSS3, JavaScript, PHP. It will contribute to saving precious time of users, and will track the vehicles in real time.