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Online Destinations Map using Google Maps API Based on the Private Database

Ali N. Yousif[1], Hassan M. Ibrahim[2*]

[1,2]University of Information Technology and Communications (UOITC), Baghdad, Iraq*

Email: [1]alinafea@uoitc.edu.iq
Corresponding Email: [2]hassan.m@uoitc.edu.iq*

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Abstract: Online mapping applications have undergone a radical change as a result of the widespread use of the Internet,and an interested in the developing of the online mapping services due to the use of the Google Maps Application Programming Interface (API), Yahoo Maps API, and ESRI ArcGIS API, as well as the support for maps by operating systems on tablets and smartphones. One of the most helpful technologies for identifying locations and providing information about roads is online mapping. Although these applications are simple to use, they have a limited amount of the data that may be inaccurate, and the mapping technology does not have sophisticated or detailed characteristics of the required places. As a result, developers and programmers use maps as a platform to create features that are tailored to the needs of the user by using various programming languages. The goal of this paper is to develop the Google API by connecting it to a local, private database that houses data that is regularly gathered and developed. It also aims to create opportunities that make it easier for clients to access information stored on particular servers that can provide a variety of locations and details in order to meet their needs.

Keywords: Google Map (API), MySQL Database, PHP, Online Mapping.

1. INTRODUCTION

The online mapping application supported by Google provides a very useful service to clients in facilitating spatial data mining around the world. where Google maps are based on graphical user interface, database and software providing direct interaction between the client and the server through the Internet to provide spatial data on the map with a lot of characteristics (Low cost, dynamic navigation, query ability, ease of implementation) Google Map API has achieved great success and spread [1] , but the problem of the data provided is insufficient and with limited details that do not provide the requirements of the

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client using this service [2]. The disadvantage of such solutions is that the original data had to be reformatted and was not stored in its original database where it could be updated instantly. Second, since the goal of map "mashups" is to quickly supply customized services or data using the Maps API platform, these applications typically lack advanced functions and user-friendly interfaces that allow the user to edit the data.
Application Programming Interface (API) is a further functionality offered by Google to assist developers in supplying code sources.
API (Application Programming Interface) is a set of data and functions that can perform complicated software functions in an easy way that does not need to be understood by the client about how to program them but only deals with an easy-to-use graphical interface from which to choose his requests [3].

In the same sense, Google Map API provides this service through the use of JavaScript with maps and dealing with the programming languages such as PHP, SQL, HTML, XML, CSS and many programming languages by developers and programmers to obtain graphical and software add-ons that meet the customer's needs, These features and support make Google Maps wide-use [4], Also Google maps support most Internet browsers on the computer such as Internet Explorer, Firefox, Chrome, and other browsers. It also supports browsers on tablet and mobile devices such as Apple, Android, and other with full JavaScript support.
Many of the software applications have invested in Google Map API services through the addition of the software and the integration of many of the programming languages. This is called the mashups which means mixing many programming languages with Google maps for applications that have additional characteristics as needed [5]. Among the projects that used Oracle and SQL is the design of a site to identify earthquakes and volcanoes, also design a website to display and search for the types of gardens and their places in America [6]. Many applications that need spatial data on maps in addition to special data will be possible make it through the use of “mashups” Google Mapping API [7].
In this research the service will be used and mixed with many programming languages such as HTML, CSS, MySQL, PHP, and JavaScript with the Google Map API service In order to obtain a system to identify areas of destinations.

2. METHODOLOGY

2.1. Collect Data

The data will be collected and stored in the local database through the site, for example, the supervisor.
The geographical points (latitude and longitude) of these Regions will be stored on a secure private database based on the MySQL database.

2.2. How to Design the layout of this Application

The API implementation is built on a web page because the online map application is a web application [8]. Google Maps is depend on JavaScript, also, Google Maps is made of XHTML (Extensible HTML), which is styled with CSS.
The graphical interfaces relies on Google Map to handle geographic maps.

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Each location's longitude and latitude are saved in a unique database on a local server. When the user selects the area to be identified, additional information like the title, a geographic area, and some photographs will be displayed. The MySQL database and XML were used in the database design (the XML file serves as a conduit between the database and the user-facing map interface). Since the XML file pulls data straight from MySQL, it is simple to read, sensitive to commands, and easy to edit. The required functions are handled by the languages SQL and PHP in order to connected to the database, the graphical user interface, and Google Map.

2.3. Mashups of Google Map JavaScript API with MySQL database and PHP

The service provided by Google in the provision of geographic maps in the form of an online application known as Google Map API provides an important means to rely on the construction of geographical maps developed by programmers and developers to obtain new possibilities and additional characteristics where the main objective is to provide a model infrastructure that reviews information as an illustrative application of information [9].
As JavaScript is the dominant language in the Google map industry, the use of XHTML, CSS also provides a graphical user interface design to handle user requests and services[10].
The MySQL will be used as a database through which to store the geographical locations and information for each region and send this informations to XML file to be an intermediary In order to retrieve the information from it because the use of the file as XML will provide ease and speed in the implementation of the request to be called by the user at his request. The interfaces between the graphical Interface and the programming procedures are handled with the database using SQL and PHP programming language (Figure 1).

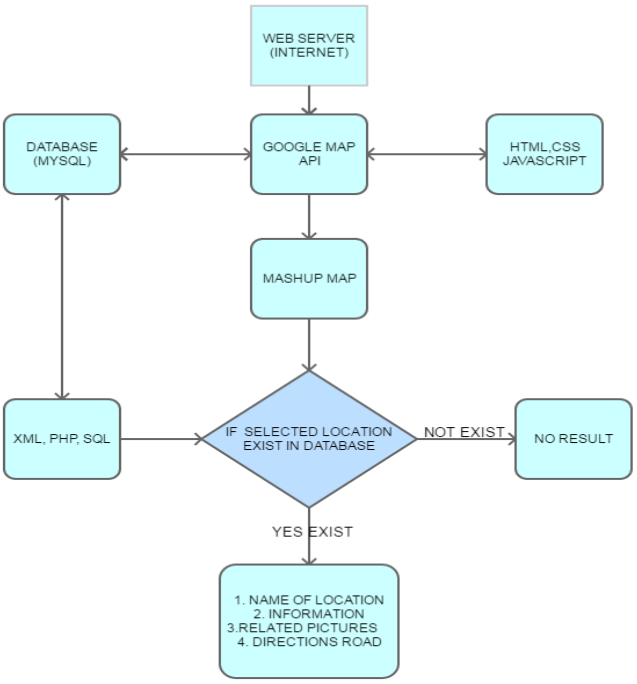

Figure (1): Flowchart for the mechanism of Mashups Map Application

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3. RESULT

This application offers Numerous beneficial advantages, like Ease of use, Speedy data retrieval, Reliable details, and Comprehensive data.
The system provides an interactive environment to give users enough availability to use information in this system and the option to search the global database of Google Maps directly from the same system, making it easier for users to reach their destinations with the least effort.
The geographic location data and destinations will be updated without affecting the system's functioning, system administrators will provide an upgradeable system, and the speed of response to user requests will be good.

4. CONCLUSION

This paper depend on dealing with the map service that provided by Google Map JavaScript API and developing it using a database (MySQL), based on a secure local server dealing with programming language (PHP, SQL) in order to implement features and software operations to identify and define destination areas. HTML, CSS, and JavaScript are used in the development of graphic design interfaces.
Places that are not included in the Google Maps global database will be made available with the aid of the local database system, along with new advantages make the online Maps API more sophisticated and practical, particularly when specific geolocations and destinations to make it easier to identify all destinations and to give the user all the information he requires. A special tool will be made available to provide all the necessary tourist information by adding addresses, photographs, and location-specific data to Google Maps.
Data mining and Google Maps are crucial when working with any geographic location system that depends on the regions represented in the database. This will make it easier to locate and navigate the roads, determine the quickest routes, and identify the best routes.

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