

# Design an Information Review System for Tourists by using Mashups Concept and Google Map API

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**Abstract**— there has been a major development on the Internet about the creation of applications and the implementation of various function operations through the concept of Mashups, which is emerging more clearly in Web applications via Web 2.0 technologies. The Mashups services combine Web 2.0 and Web services technologies to provide integrated user software applications.

In this paper, we will focus on the characteristics of the concept of Mashups, the examples of its applications, the great benefits of its uses, especially the combination of Google maps API and its possible advantages with how to develop the programmable interface for these maps to establish an online system to review tourist destinations and information based on the electronic maps, which began to spread in terms of use by tourists around the world and who rely on self-guidance of their tourist destinations through the use of the Internet.

Keyword: Mashups, web 2.0, Google map, API, Web Service.

## 1 INTRODUCTION

The development of Internet technologies and the need for applications with high features that provide the growing needs of users, has emerged a new concept in the world of web applications, which is known as the Mashups name.

Mashups services typically provide solutions to specific problems by sharing and collect the information and software experiences by combining existing Web resources and utilizing heterogeneous applications and integrating them into a state of integration in the creation of new applications and user interfaces that provide extensive possibilities.

The definition of the meaning of the Mashups is that it is a way to create new Web applications by using and collecting several pre-existing Web resources programmed to implement certain properties, using specific data and API interfaces [1].

Mashups involve data fetching and aggregation for new content that meets wider user needs through applications that offer easier interfaces and better features. The concept of Mashups, (as the figure (1)) provides a wide dimension where services will be available to be used in the new locations requiring those services [2]. For example, anyone can be allowed to combine data sources provided by major business sites such as Amazon, e-bay, etc., as well as Google services [3]. Here, new websites and applications will be supported with pre-existing features.

On the other hand, the asynchronous JavaScript programming language has given the opportunity to develop applications that rely on Mashups, allowing the server to execute specific requests by users.

Web 2.0 played an important role in the development of Web culture, where collaboration and user participation emerged, and the Mashups concept was developed by facilitating shar-

ing, dynamic content support and open source code. We can say that Web 2.0 was the basis for the emergence of the Mashups concept and thus the building of web applications that provide useful services and features such as rapid execution, ease of delivery, data integration and clear and uncomplicated user interface.

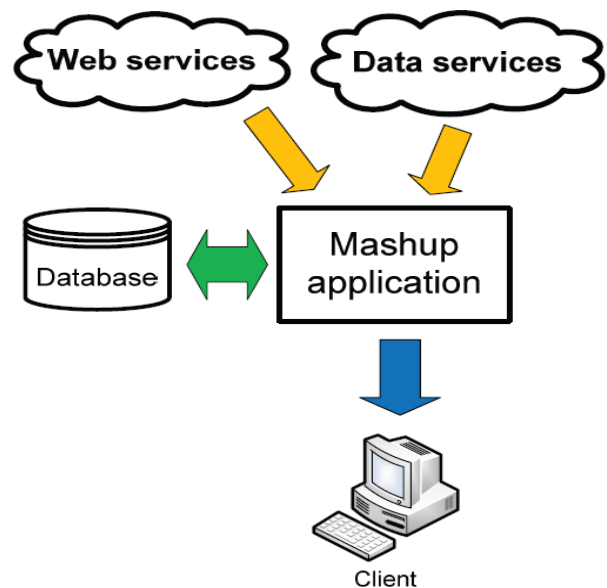


Figure (1): Illustrate Mashups concept

## 2 MASHUPS: STRENGTHS AND CONSTRAINTS

The concept of Mashups provides distinctive features and benefits in the completion of web applications, which are accomplished through the integration and participation of a number of pre-programmed applications. One of the most prominent features provided by the Mashups is the possibility of allowing users to add their comments and access to dynamic applications that share with other users, the most popular of these applications are social networking sites, blogs, and various data sharing sites [4]. These sites allow each user the possibility of creating special pages, sites, and data based on the software provided by the original website. There are many possibilities offered by the concept of Mashups, including [5]: 1- take advantage of the APIs, as API provided by Google in the applications of Google Map. 2- Network control APIs. 3- APIs commercial and administrative processes.

In terms of weaknesses or obstacles in the use of the Mashups, where the two models use mixing to solve the problems of circumstantial and simple lack of engineering planning for the design is approved by everyone [6], In addition to that many developers can use the APIs are similar to each other without participation in other things such as data or nature of use. Also, the lack of tools is easy enough to affect the speed of development in the field of Mashups.

It is worth mentioning that the challenge facing the widespread of Mashups is that most applications that run by mixing focus on a specific problem of a specific category (company or organization). Consequently, the big challenge is how to find the right synthesizer or the required data source when needed [7].

It is also possible to point to the problem that the basis of these applications is the Internet and therefore may face the process of Mashups the problem of access to content and security problems and rights and others [8].

The concept of Mashups is a real challenge against the concept of IT governance where it is possible for the user to control the functions of the application without reference to the administration, which may cause a problem because there is no official authorized to control this application according to certain policies and authorities.

## 3 MOTIVATION

This paper is demonstrating the concept of Mashups and services that available through its use in Web 2.0 applications that were the basis for the emergence of this concept.

We review one of the most applications based on the Mashups concept that provides multiply-integrated functionalities, which is Google Map API (Application Programmable Interface of the maps provided by Google).

The integration of programming languages and programmable interfaces to access the required services and completion of the application which reviews the geographical points around the world, where Google Maps is an Internet-based service that was implemented using the programming languages,

especially, JavaScript which is the dominant language in this application [9], relying on a giant database with a huge number of places around the specific area.

All of these features are available to developers as a free and open source code that enables developers or users to take advantage of them to implement different applications as needed, and to integrate these maps into the interface of the applications created [10]. It should be noted that the use of HTML, CSS in the design of the main interfaces was the main reason to facilitate the process of sharing the source and the possibility of editing easily because these languages are compatible with all devices and applications that deal with the Internet.

The availability of these possibilities makes it possible to take advantage of this application interface and develop it in many projects that need to refer to geographical locations or routes, where it is possible to develop websites that deal with information about weather and climates by regions, Several projects have been completed such as the designation of areas that suffer from the risk of pollution, and The designation of seismic zones, volcanoes and natural disasters. Many applications that can be used Google Maps API to identify and activate interfaces with characteristics that meet the needs of developers and users, and thus the completion of the integrated of application and effective efficiency as well as quickly in the achievement, as the figure(2).

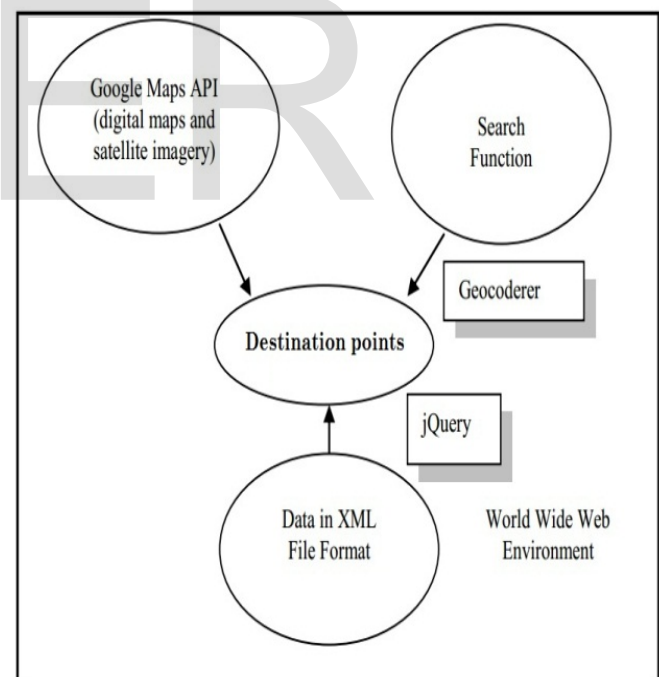


Figure (2): Process the data call and create a map interface

## 4 THE AIM OF STUDY

Building an interactive system is to review all tourist destinations in Iraq. Google Maps and Mashups technique are used to create a graphical map interface that displays all tourist destinations based on a local database that provides data, (latitude

and longitude) for each destination. Destinations will find out by geographical locations on the map, as the figure (3).

Common programming languages will be used to develop the graphical interface of the map to suit the system body. HTML, CSS is used in terms of user interfaces, and PHP, MySQL language in database building and programmable functions, and handling of asynchronous JavaScript for deal with Google Maps API which provides the main interface of the map, as the figure (4).

The system provides fast search and filtering services by quickly identifying the desired area through the interface developed to suit the touristic reviews on the map and thus providing a tour guide that reviews the destinations and information about them. Once the destination is selected, the system will display multiple information's to identify the characteristics of this destination, and drawing the way to access it via the interface of the system map.

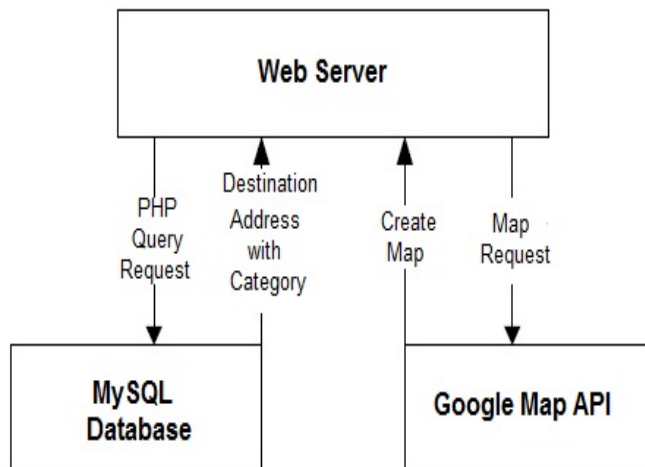


Figure (4): The process of dealing with servers and database

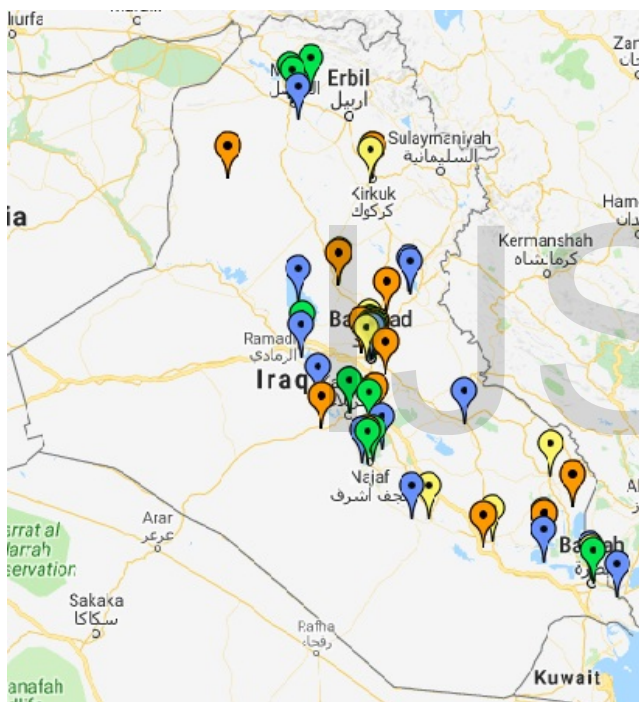


Figure (3): The main map for destinations

## 5 RESULT

Many of the benefits and features of the Mashups concept will have a great impact in many areas. Here we focus on Mashups the Google Map API interface with a local database and providing the ability to display many geographical regions in the Iraq country that does not supported in the database of Google Maps, this will be done programmatically by using a local private database (MySQL) and using programming languages such as JavaScript, PHP, XML, as well as relying on the Google Map API. It is possible to make some modifications to reach an interface that is compatible with the application and the possibilities offered. The implementation of this application will provide the possibility of review of the regions and considered as a geographical indication of the regions or the potential in the country, it can be used to identify addresses, access routes, and can be used by a tourist guide to help the tourist to choose his destination without the trouble to search multiple sites. This application is an example of combining a pre-existing application and using it (Google Map API) and linking it to a database created specifically for this application, using programming languages to add additional functions to the application, expansion of the search area, filtering and quick access to the required area. When the database is connected with the map interface to browse destinations and places on the map, the system will provide the possibility to specify the route to the desired destination and act as a geographical guide on the map using the A-star algorithm to determine the path between two destinations will have the greatest effect in drawing the route between the current destination and the destination it is looking for. Thus, the path between the two sides will be determined and can be followed to navigate and reach the desired destination. As a result, this application is the product of the Mashups concept, it is possible to add other features that are displayed with the geographical location, for example, information about the site or a description of it and a lot of ideas that expand the possibilities of application and increase the information provided to the user.

The integration of web applications with API interfaces such as Google Map API, provides an important feature as the application will provide the possibility to work with all operating systems for computers, mobile devices and tablets that support the languages of HTML and JavaScript such as MAC, Android, windows, Linux, so it will provide Extensive utility and possibility of developing the application and activating its connection with GPS systems (Global Position System), and activate the possibility of positioning the people who deal with the application and thus facilitate the knowledge of distance and navigate the directions address.

## 6 CONCLUSION

This paper examines the content of the development of Internet application programming and the concept of Mashups information and software from various places on the Internet through which the evolution of fast-paced applications and integrated functions to solve different problems or response to user requests or to provide specific services.

The spread of Web 2.0 and the growing in web application services have helped greatly increase the trend towards mixing applications, despite the obstacles we mentioned above, there is great interest in launching applications that are efficient and fast in execution, in addition to the possibility of continuous development and creating applications with endless features.

In this paper we have studied several examples of the use of the Mashups concept and the results of its use, in addition to focusing on the implementation of a system that integrates the Google Map API with a local database and using programming languages such as PHP, JavaScript, MySQL for a system that supports the provision of a geographical guide to a specific country and the possibility of adding special information about these geographical locations. The concept of Mashups will continue to evolve, especially with the increasing availability of open source applications (free of charge) and the development of Web 2.0 technology that supports this concept to achieve a software integration that makes it easier for developers and programmers to implement specific Web-based software solutions that deliver a variety of services.

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