

الآية

((قل سيروا في الأرض فانظروا كيف بدأ الخلق ثم الله ينشئ النشأة الأخرى إن الله على كل شيء قدير))

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DEDICATION

First of all, I would like to thank **Allah** for having inspired me and gave me power to complete my thesis. This thesis is dedicated to **my mother**, who taught me the meaning of life and how to deal with. It is also dedicated to **my father**, who taught me that even the largest task can be accomplished if it is done one step at a time. It is as well dedicated to all people, who encourage me in any part of my life.

RESEARCHER

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ABSTRACT

Recently, there has seen increasing interest in developing online map services using Google Maps with Mashups, which are used for integrating different web resources and information within a web site.

Mashups are based on Application Programming Interfaces (APIs) that are online libraries of functions. Most of the APIs are available free for web developers, Google Map API one of them.

In this study we created map mashups for Sudan using Google Map API. Thus we are considering a Geoinformation System of Sudan by overlaying data on Google Maps.

For creating this system, we used PHP script to retrieve geodata from database and then convert it into XML files which are fully compatible to integrate the database's content with Google Maps API by using JavaScript.

Through this system, anyone can search about trustful and up-to-date geoinformation about Sudan by easy way and by simple manner, furthermore the way of visualization of geoinformatin on google maps well clear and understandable.

The main contribution is that we are using map services and Mashup technology to display the States location with its localities and population, as well as well-known universities in each State to help people in general for searching about Geoinformation, which is organized, complete and up-to-date in Sudan.

المستخلص

في الآونة الاخيرة نجد ان هناك اهتمام متزايد في تطوير التطبيقات الخاصة بخدمات الخرائط المتاحة عبر الانترنت والتي تستخدم خرائط قوقل بتقنية المزج، حيث تستخدم هذه التقنية في جمع معلومات من مصدرين أو أكثر من المصادر الخارجية لإنشاء خدمة جديدة.

تقنية المزج مبنية على واجهات برمجة التطبيقات وهي مكتبات من الوظائف متاحة عبر الانترنت، أغلب واجهات برمجة التطبيقات متاحة مجاناً عبر الانترنت لمطوري تطبيقات الويب وخاصة واجهات برمجة تطبيقات قوقل.

في هذه الدراسة قمنا بإنشاء نظام معلومات جغرافية خاصة بالسودان بتقنية المزج حيث يمكن من خلاله عرض المعلومات الجغرافية الخاصة بالسودان على خرائط قوقل.

لإنشاء هذا النظام قمنا بإستخدام لغة بي اتش بي لاسترجاع البيانات الجغرافية من قاعدة البيانات ومن ثم تحويلها الي لغة الترميز القابلة للتوسّع, نسبة لإمكانيتها ومرونتها والغرض من ذلك دمج محتوى قاعدة البيانات مع واجهات برمجة تطبيقات خرائط قوقل وذلك باستخدام جافا اسكربت.

خلال هذا النظام يمكن لأي شخص البحث عن معلومات جغرافية عن السودان محدثة وموثوقة بطريقة سهلة و بأسلوب بسيط بالإضافة الى ذلك طريقة عرض المعلومات الجغرافية على الخريطة في هذا النظام اكثر وضوحاً وقابلة للفهم.

الإضافة الرئيسية في هذه الاطروحة إستخدام خرائط قوقل بتقنية المزج لعرض ولايات السودان على الخريطة متضمناً المحليات في كل ولاية بالإضافة لعدد السكان في كل محلية في الولاية المحددة، وذلك لمساعدة الناس بصورة عامة في البحث عن معلومات جغرافية منظمة ومرتبطة ومحدثة عن السودان.

List of Terms

SGIS	Sudan Geographic Information System
GEOINFORMATION	Geographic Information
GIS	Geographic Information System
GPS	Global Positioning System
PHP	Hypertext Preprocessor
IDE	Integration Development Environment
XML	Extensible Markup Language
XAMPP	Cross-Platform(X), Apache, MySQL, PHP and Perl (P)
API	Application Programming Interface
UML	Unified Modeling Language
POI	Point Of Interests

List of Figures

figure	description	page No
3.1	data processing within client side	15
3.2	data processing within server side	16
3.3	Description of whole system	17
4.1	Map of Sudan and neighboring countries	18
4.2	Sudan's States Maps	20
4.3	Sudan's States according to population	21
4.4	Khartoum and neighboring states	22
4.5	Distributed of localities and Population of Khartoum State	23
4.6	Some of Public Universities in Khartoum State	24
5.1	Use Case Diagram	27
5.2	Sequence diagram for view Sudan map	28
5.3	Sequence diagram for view State map	29
5.4	Sequence diagram for view localities	29
5.5	Sequence diagram for viewing population	30
5.6	Sequence diagram for viewing Universities	30
5.7	Sequence diagram for Add/Edit State	31
5.8	Sequence diagram for Add/Edit local	31
5.9	Sequence diagram for Add/Edit university	32
5.10	Deployment Diagram	32

5.11	Main page for Sudan geofomation system	33
5.12	The selection interface-1	34
5.13	The selection interface-2	35
5.14	The selection interface-3	36
5.15	The selection interface-4	37
5.16	The result of showing specific locality	38
5.17	The result of showing specific university	39
5.18	The result of showing population about specific locality.	39

Table of Contents

	page No
CHAPTER1: INTRODUCTION	
1.1 Research Background	1
1.2 Problem Statement	2
1.3 Research Hypothesis	2
1.4 Purpose of the Study	2
1.5 Significance of the Research	2
1.6 Research Scope	3
1.7 Research Goals and Objectives:	3
1.8 Research Methodology	3
1.9 Expected Result	4
1.10 Organization of Thesis	4
CHAPTER 2: LECTURE REVIEW AND RELATED WORK	
2.1 Literature Review	6
2.1.1 Introduction	6
2.1.2 Background	6
2.1.2.1 GIS	6
2.1.2.2 Mashup technology	6
2.1.2.3 Application Programming Interface (API)	7
2.1.2.4 Google maps	7
2.2 Related Work	8

CHAPTER 3: METHODOLOGY, TOOLS AND TECHNIQUES	page No
3.1 Overview	11
3.2 Tools and Technology	11
3.2.1 Javascript	11
3.2.2 MySQL	12
3.2.3 XAMPP	12
3.2.4 PHP	12
3.2.5 UML	12
3.2.6 Enterprise Architect	13
3.2.7 GPS	13
3.2.8 NetBeans IDE	13
3.3 Idea and Methodology	13
3.4 Data collection	14
3.5 Data preprocess	14
3.6 description of System Structure	14
3.6.1 Client side	14
3.6.2 Server side	16
3.7 Phases of creating the application	16
3.8 Phases of creating the Database	17
CHAPTER 4: GEOGRAPHY OF SUDAN	
4.1 Introduction	18
4.2 Geography of Sudan	18
4.2.1 Sudan States	19
4.2.2 Population	20
4.2.3 Khartoum State	21
4.2.3.1 Khartoum's localities	23

CHAPTER 5: DESCRIPTION, COMPONENT, ANALYSIS, IMPLEMENTATION AND RESULTS	page No
5.1 Introduction	25
5.2 System description	25
5.2.1 User of the system	25
5.2.2 Administration of the system:	25
5.2.3 User function	26
5.2.4 Administrator function	26
5.2.5 System function	26
5.3 Application component	26
5.3.1 Hardware component	26
5.3.2 Software component	27
5.4 Analysis of application	28
5.4.1 Use Case Diagram	28
5.4.2 Sequence Diagram	29
5.4.3 Deployment Diagram	32
5.5 Implementation and Application Interfaces	33
5.6 Results	40
CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS	
6.1 Introduction	41
6.2 Conclusions	41
6.3 Recommendation	42
7 References	43
8 appendix	

