
# EFFECTIVE OF REAL ESTATE OFFICES DATABASE STRUCTURE ANALYSIS

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# EFFECTIVE OF REAL ESTATE OFFICES DATABASE STRUCTURE ANALYSIS

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**BY**
**NOOR ABDULSALAM ALBAYATI**

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Title of the Thesis: Effective of Real Estate Offices Database Structure Analysis.

Submitted by **NOOR ABDULSALAM ALBAYATI**

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This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

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## ABSTRACT

### EFFECTIVE OF REAL ESTATE OFFICES DATABASE STRUCTURE ANALYSIS

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Kirkuk is considered one the most important cites in Iraq for its many natural resources, multi ethnicities, groups and nationalities.

Accommodation and choosing the perfect location for investment is a very important things. The scholar intends to create huge and optimize database by using MySQL language that includes urban planning foundation and geographical distribution regarding patterns of land uses. Currently, Iraq is still using old traditional system in searching the best real estate which requires a lot of effort and time to meet the needs.

Kirkuk's applying this system encourages the scholar to build electronic real estate system. In order to facilitate the task in a short time by creating such a mobile application.

This system has been created via Php language to design the website. The website admin inputs data regarding the required the real estate and then put them on a map (based on Google map) as well as authorizing the agent ( broker ) to do the same tasks done by the admin. The results will be displayed on (Android Application) which has been created via java Android language. In this way, citizens of Kirkuk will easily find their prospective real estate (Residence, Land, Apartment, Shops, Pharmacy, Firm,

Factory, Agricultural land) for either purchasing or rent purpose in any time or place. Least but not last the user can communicate with the broker in case he/she likes the e. advert by calling, sms or sending a message on email address or any social media posts ( Facebook, Twitter ). Finally all these steps will be activated after the user's registration.

**Keywords:** Kirkuk, R.E, Php, MySQL, Java Android, K.E.R.E, Mobile App

# ÖZ

## EMLAK BÜROLARI VERİTABANI YAPISI ANALİZİNİN ETKİLİLİĞİ

Yüksek Lisans, Matematik-Bilgisayar
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Kerkük pek çok doğal kaynağı, birçok etnik yapıyı, grubu ve milliyeti içinde barındırdığından Irak'ın en önemli şehirlerinden biri sayılmaktadır.

Yaşam mahalli ve yatırım için en iyi yeri seçmek çok önemlidir. Bilim adamı arazi kullanımlarına ilişkin şehir planlama temeli ve coğrafik dağıtım içeren MySQL dili kullanarak büyük ve optimum veritabanı oluşturmak niyetindedir. Hali hazırda Irak'ta en iyi gayrimenkulü araştırmak için hala eski geleneksel sistem kullanılmaktadır ve bu gereksinimleri karşılamak için çok fazla çaba ve zaman gerektirir.

Kerkük'te bu sistemin uygulanması bilim adamının elektronik gayrimenkul sistemi kurmasını teşvik etmektedir. Bu işi en kısa zamanda kolaylıkla yapmak için cep telefonu uygulaması hazırlanmıştır.

Bu sistem web site tasarlanmak için kullanılan Php dili ile yaratılmıştır. Web site admini gayrimenkule ilişkin gerekli verileri girer ve daha sonra onları haritaya yerleştirir (Google haritalara dayanarak) ve admin tarafından yapılan aynı işleri yapmak için bir temsilci (Emlakcı) de yetkilendirilmiştir. Sonuçlar (Android Uygulamasında) gösterilecektir ve bu Java Android diliyle hazırlanmıştır. Bu yolla Kerkük vatandaşları geleceğe dönük gayrimenkullerini (yerleşim, arazi, apartman, mağaza, eczane, şirket, fabrika, tarımsal arazi) hem satın almak hem de kiralamak amaçlı olarak herhangi bir zaman veya yerde kolaylıkla bulacaktır. Ayrıca, kullanıcı arama, sms veya e-posta veya

herhangi bir sosyal medya platformunda (Facebook, twitter) gelen reklamı beğenirse aracıyla irtibata geçebilecektir. Son olarak tüm bu adımlar kullanıcının kaydından sonra aktive olacaktır.

**Anahtar Kelimeler:** Kerkük, R.E, Php, MySQL, Java Android, K.E.R.E, Cep Uygulama

## ACKNOWLEDGEMENTS

First of all praise be to “ALLAH” for giving me the strength to complete this work. I would like to submit my sincere gratitude to my supervisors Prof. Dr. Taner ALTUNOK and for her helpful advice, valuable suggestions, and encouragement throughout this study. I would like to extend very special thanks and gratitude to my family and my husband for their valuable help, unlimited support, and encouragement during the period of courses and this research. I would like to extend my deep thanks and gratitude to my best friend for their prayer, and encouragement.

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| API | Application Programming Interface |
| PHP | Hypertext pre process |
| HTML | Hyper Text Markup Language |
| URL | Uniform Recourse Locater |
| OOP | Object Oriented Programming |
| XML | Extensible Markup Language |
| IIS | Internet Interface security |
| OS | Operating System |
| GUI | Graphical User Interface |
| ASP | Active Serve Page |
| POP | Post Office Protocol |
| DBMS | Data Base Management System |
| RDBMS | Relational Database Management System |
| IR | Intermediate Results |
| RERD | Real Estate Registration Department |
| USAID | United State Agency Of International Development |
| DLD | Dubai Land Department |
| DS_25 | Document Sample 25 Real Estates Registration in Iraq |
| GPS | Global Position System |
| K.E.R.E | Kirkuk Electronic Real Estate |

# CHAPTER 1
# INTRODUCTION

## 1.1 Background

Advances in technology have helped the growth of many businesses. including real estate internet sites that enable online property searches and value making. The Internet's ability to suitably display information has improved real estate communications and transactions that foster closer working relationships among stakeholders.

The real estate industry is undergoing changes that may affect the kind of e-business models adopted by companies. Companies collaborate with organizations to develop new product and services to better satisfy customers' needs. There are many types of real-estate business models, web-advertising, brokerage, and mobile application.

The web-advertising model is an extension of the traditional media broadcast model. The broadcaster is an internet site that sometimes provides free content and services (email, IM, blogs, etc.) mixed with advertising messages in the form of banner ads. One of the most forms of internet advertising is the Google ad.

The brokerage business model this model brings brokers, sellers, and buyers together to do business. Brokers connect consumers with retailers, businesses and consumers. In real estate, online companies enable the search for properties and provide brokerage services. Companies that use the brokerage model make money from commissions and from a variety of service fees.

Mobile application model this application providing real estate services from selling, renting, buying, and you can find a list of property like(houses, office, land, shops, etc). So because of mobile application become increasingly used [1].

Mobile devices are becoming indispensable for the user. Thus in our search we will build an real estate application ,it will be like electronic real estate market, means the user just need to download the application and use it any time at any where just by clicking on the application the user can find a list of property.

## 1.2 Historical Background Of Land Registration In Iraq

Land registration and property rights in Iraq have deep historical foundations reaching back to the Hammurabic period. However, the present land registration system owes more to the 400-year Ottoman occupation of Iraq and the later interval under the British mandate. Under these rules, land policy was self-serving and designed to continue and support the existing political power.

This was done through the allocation of land to influential individuals who supported the current regime.

This policy led to large accumulations of land and an undeveloped economy based on poor peasants who had limited rights of residence. During the early Ba'athist period, under a socialist ideology, large-scale land reform was implemented in the rural tribal areas. Under this reform, limitations on the size of holdings were enacted in law, and collective ownership of property and means of agricultural production were made possible.

The results of that land reform remain in place. In the latter Ba'athist period, government land was allocated to supporters of the regime, while Kurds and ethnic Iranians were deprived of property for which they held title.

## 1.3 Study Location

Kirkuk is the fourth largest city in Iraq, the area of the city with its suburbs about 9679 $km^2$ which the center of the province of Kirkuk located in northern Iraq, 250 km north-east of the province, Baghdad, capital of Iraq, and is bordered by the Zagros Mountains to the north and the River Little Zab from the west and a series Hamrin Mountains from the south and the river Sirwan from the south-west as shown in Figure 1. Kirkuk has an ancient history with an estimated age of more than 5,000 years. Kirkuk city centre coordinates are (Longitude E : 44.316667 ) and (Latitude N : 35.466667). The borders of the province of north Shwan and Alton-kopry on the south by district for Laylan and Taza and Toz-khermato district, as well as to Kara-anjeer is on the east district and Yaychy is on the west district. As shown in table 1

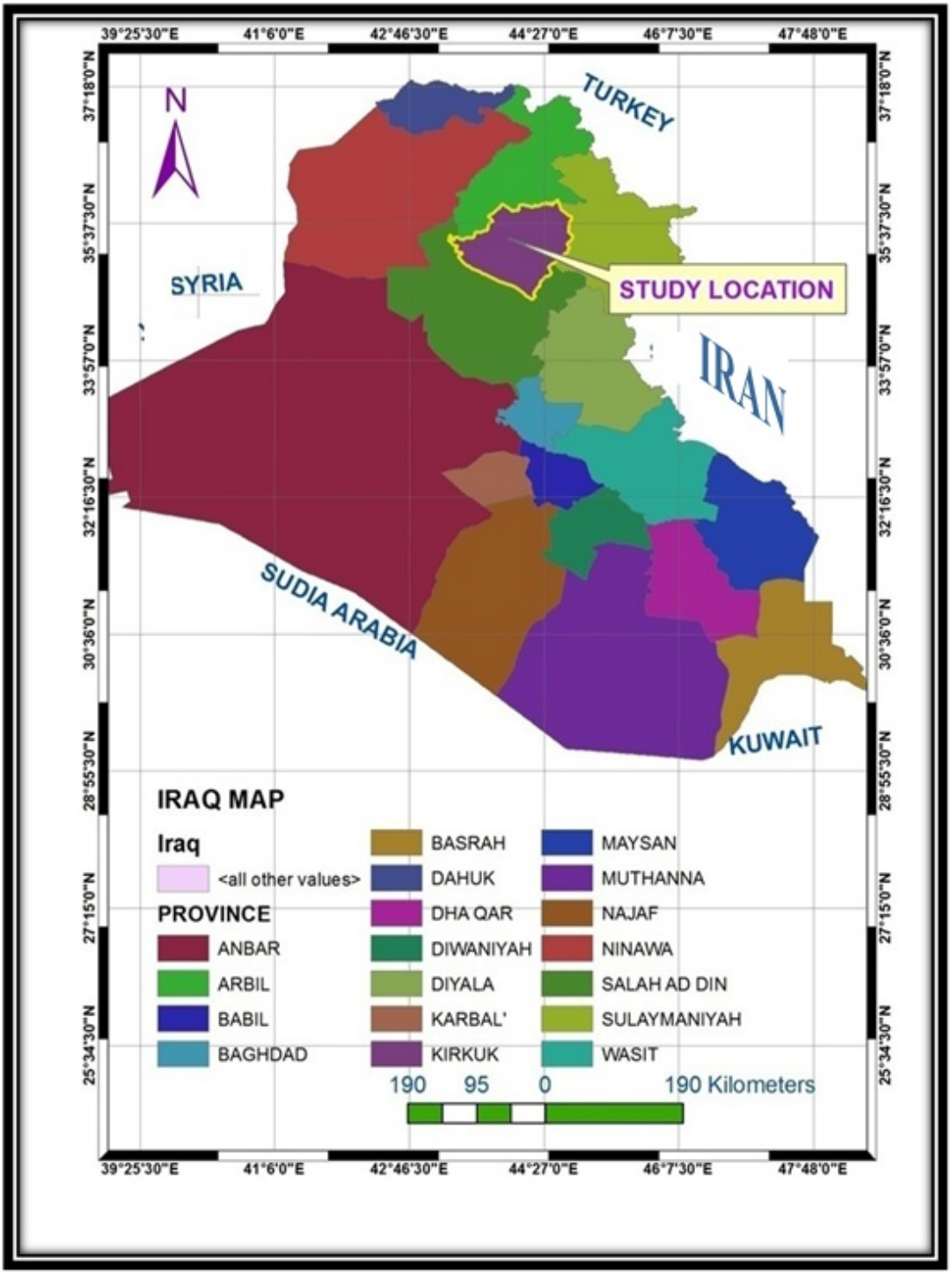



**Figure 1:** Study Location Map

| ID | Name of Residential | ID | Name Residential |
|---|---|---|---|
| 1 | Hay AL_Sena'ai | 24 | Hay Sare kahiya |
| 2 | Hay AL_Tadamen | 25 | Hay Bakler |
| 3 | Hay AL_A'askeriy | 26 | Hay A'arafa |
| 4 | Hay AL_Syada | 27 | Hay AL_A'amlal_sha'aby |
| 5 | Hay AL_Kadesia | 28 | Hay Shaterlo |
| 6 | Hay AL_Salam | 29 | Hay Almas |
| 7 | Hay AL_Afaq | 30 | Hay Raheemawa |
| 8 | Hay AL_Sha'ab | 31 | Hay Barodhana |
| 9 | Hay AL_Rashed | 32 | Hay AL_Intefada |
| 10 | Hay AL_Hasar | 33 | Hay AL_A'aroba |
| 11 | Hay AL_Madina | 34 | Hay AL_Iskan |
| 12 | Hay AL_Bahar | 35 | Hay Azadi |
| 13 | Hay AL_Jamea'ae | 36 | Hay Imamkasem |
| 14 | Hay AL_Zohoor | 37 | Hay AL_kala'ae |
| 15 | Hay AL_Sekak | 38 | Hay AL_Horiyea |
| 16 | Hay AL_Taakhi | 39 | Hay AL_Mansour1 |
| 17 | Hay AL_Gaz | 40 | Hay Kasabhana |
| 18 | Hay AL_Gernata | 41 | Hay AL_Zahra'e |
| 19 | Hay AL_Mansour2 | 42 | Hay Chakinlawa |
| 20 | Hay AL_Kadrae | 43 | Hay AL_ Masela |
| 21 | Hay AL_Teseen | 44 | Hay Periyadi |
| 22 | Hay AL_Hamzely | 45 | Hay AL_Sena'ai2 |
| 23 | Hay AL_Kasa | 46 | Hay Derwaze |

**Table 1:** List of Counties in Kirkuk

### 1.4 The Purpose Of The Study

In this search, we will study how to built an real estate mobile application for Kirkuk city and how it will help people to find their property they want easily, they can find property for sale, rent.

Brokers can share their real estate in this app. Also we will study the programming language that we used to build app, which is PHP and we will talk about the language features, also we will study about the database MySQL and how its a good pair with PHP.

# CHAPTER 2
# LITERATURE REVIEW

## 2.1 Real Estate (the Sell-Buy Process)

The procedure for buying real estate in Iraq is the same in all governorates. The seller and the buyer go together to the RERD. The seller presents the Title Deed as the only official document offering proof of his legal ownership.

The office issues the permanent Title Deed, which is referred to as document Sample 25 (DS-25), as shown in table 2, from The Ministry of Justice Sample (25) Real Estate Registration General Real Estate Registration/ Rusafa Application Sample of the Permanent Real Estate Registry.

This document is issued after close examination of the real estate file and its registry to assure that it belongs to the seller and is unencumbered. The sell-buy process cannot take place if the real estate is mortgaged or sequestered, or certification that the current owner has unencumbered authority to dispose of the property is not possible. The real estate property must have a clear title before a sale can be completed.

After DS-25 is issued, a selling application form is given to the seller to be completed by all concerned parties. It is submitted to the R.E.R.D to be examined by the specialized deputy for the related real estate location. If all of the above information is verified to be correct, the process continues.

The next step is that the RERD forwards the application to the Civil Affairs Department, the governmental department responsible for the identification card (ID) of Iraqi citizens, which verifies the identities.

The ID card contains all personal information, including the name of the person, eye, color, complexion, hair color, any identifying mark, father’s and mother’s names, last name, place and date of birth, marital status, and a photo of the person. The name of the husband or the wife must be included. Any change in marital status is registered in the ID card (i.e., married, divorced, or widowed). Next, the Monitoring Committee confirms the real

estate's category (land, house, building, etc.) and land use type (residential, industrial, etc.). Subsequently, the real estate is evaluated. An evaluation is not necessary if the transaction is between a willing buyer and seller. In this case, the value is according to their personal agreement. But if the real estate is under any legal restriction (i.e., inheritance, mortgage, foreclosure, etc.), then an evaluation by the committee is needed. This committee consists of a judge from the Civil Court and a specialist who is typically not an employee of the R.E.R.D. The specialist might be an engineer or a broker with wide experience who is regarded as reliable by the court.

Both the seller and buyer have to sign the selling application form, after listing all personal official information as shown in the ID cards (Iraqi nationality paper, civil affairs ID card). All official papers and signatures are to be checked against the ones given previously by the specialized deputy of the RERD. If the real estate is worth more than 20 million Iraqi's dinars, all documents associated with the process are sent for approval to the General Taxes Department in the region where the real estate is located. Approval is granted when there are no outstanding tax liens on the property. After this examination, the Real Estate Taxes Department must also stamp the application to confirm that there are no unpaid taxes.

The last step in this procedure is at the Municipal Directorate in the region where the real estate is located. This body also validates the procedure. Thus, three official bodies must ratify the transfer. If the real estate is valued at less than 20 million Iraqi dinars, then the General Taxes Department may be excluded. At the Real Estate Registration Office, the procedure is completed by paying the tax on "Transferring an Immovable Property Possession. Afterwards, both the seller and buyer sign the selling form, which the specialized deputy and the employee in charge of registration are also to sign. The application is registered at the Permanent Real Estate Registry, where the seller and buyer also must sign.

The Monitoring Committee (comprises engineers and surveyors) then determines whether everything has been carried out legally and without any missteps. After a decision from this committee, a new permanent Title Deed (DS-25) can be issued with the buyer's name, certifying that the buyer has become the legal owner of this real estate.

<table>
<tr><td colspan="3">Description of the Current Permanent Real Estate Registry</td><td>Governorate</td><td>District (Qada')</td><td>Subdistrict (Nahiya)</td><td>Street</td><td>Floor no.</td><td>Apartment no.</td></tr>
<tr><td>No.</td><td>Date</td><td>Cover no.</td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="3">Description of the Permanent Real Estate Registry transferred from</td><td>Real Estate order</td><td>Quarter</td><td>Door no.</td><td>Plot no.</td><td>Province no.</td><td>Province name</td></tr>
<tr><td>No.</td><td>Date</td><td>Cover no.</td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="6">The owner or the authorized person instead and his origin:</td><td colspan="3">Real Estate Category:<br><br>Additional Residential Buildings:<br></td></tr>
<tr><td colspan="6">Borders<br>North East:<br>North West:<br>South East:<br>South West:</td><td colspan="3">Type of Real Estate(type):<br><br>Easement rights:<br></td></tr>
<tr><td colspan="2">Area</td><td>Square meter</td><td>Owlk (Measurement unit)</td><td>Dunam (1000 m2)</td><td>Title deed type</td><td colspan="3">Description of the Permanent Real Estate Registry transferred to</td></tr>
<tr><td colspan="2" rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td>No.</td><td>Date</td><td>Cover no.</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="6">Type of the Registration and its Documents:</td><td colspan="3">Signs of sequential assurances and registry locations:</td></tr>
<tr><td colspan="2">The real price</td><td colspan="2">The actual money Paid</td><td colspan="2">The sum money under taxation</td><td colspan="3" rowspan="3">This is a photocopy of the real estate registry issued according to a request from…….<br>The tax money that is…….is paid according to taxes registry no……..dated……..<br>Signature……<br>Head of Directory signature……<br>Employee name and signature……..<br>The Real Estate Directory Registration Date:</td></tr>
<tr><td>ID</td><td>Iraqi cent</td><td>ID</td><td>Iraqi Cent</td><td>ID</td><td>Iraqi cent</td></tr>
<tr><td>The Official Stamp</td><td colspan="5"></td></tr>
</table>

**Table 2:** DS-25

A photocopy of this registration is sent back to the Monitoring Committee to be examined, confirming that the registration is correct and legal.

This committee also stamps the application and its registry and sends these documents to the General Real Estate Registry to be covered as a second copy of the original one. If the Monitoring Committee finds any error or deficiency in these papers, it sends them back to the branch concerned to be corrected. A third copy of this registration will be issued to a new branch in the General Real Estate Registration Directorate as a document file in a new computerized filing system. R.E.R.D offices in each governorate are related hierarchically to the General Real Estate Registration Directorate in Baghdad, a highly centralized system. Any problems related to missing documents for any type of real estate in any governorate may be solved by contacting this directorate.[2]. As shown in figure 2.

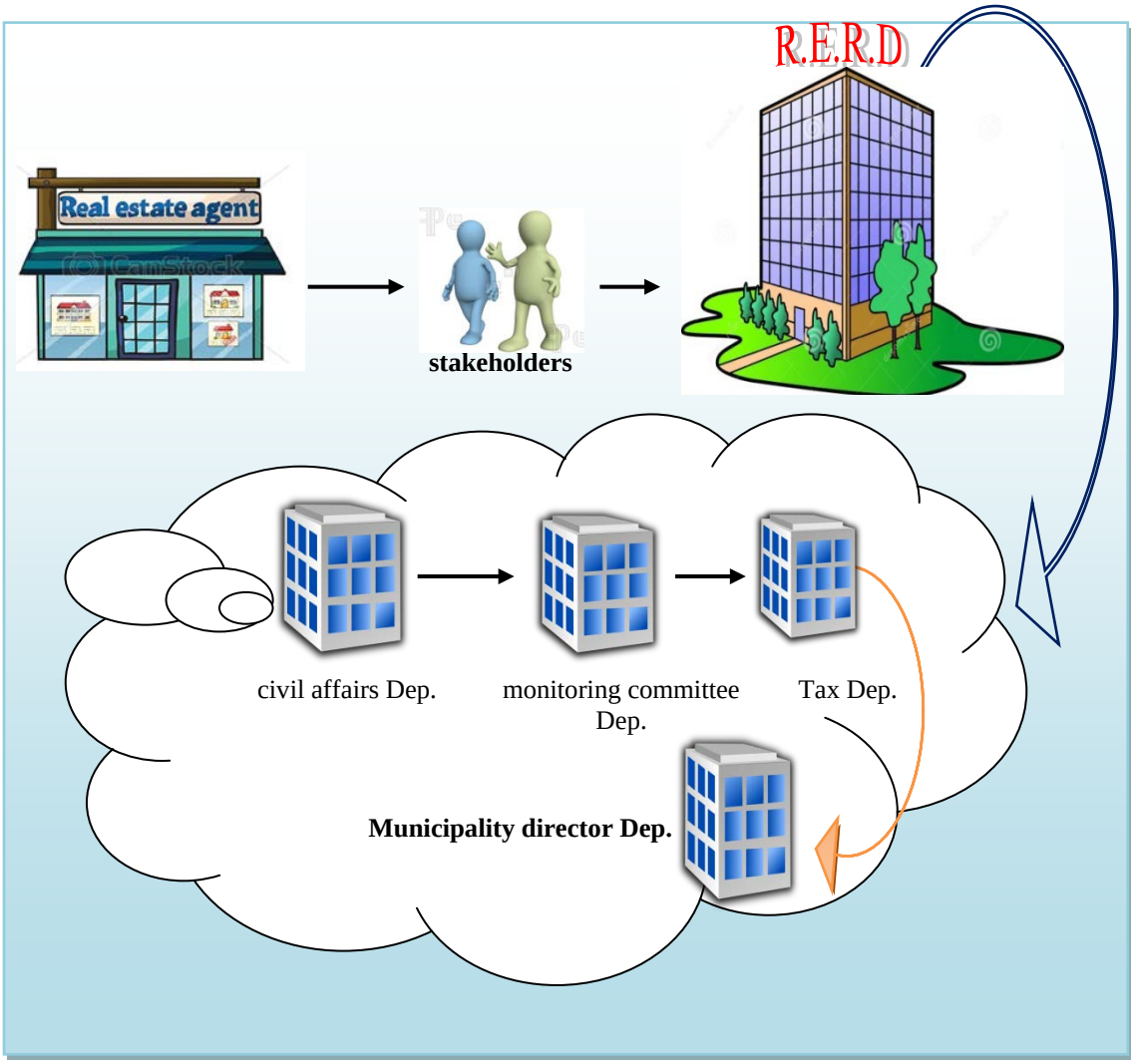



**Figure 2:** Real Estates Rigsteration Procdure

## 2.2 Land Classification In Kirkuk

The concept land uses urban concepts wide and complex, and no matter how many opinions that they collect as a mutual relationship between humans and earth urban. As we know, the spatial distribution functions of the city has multiple functions includes residential uses, commercial uses, service uses, recreational uses, industrial uses, religious uses etc [3].

### 2.2.1 Residential areas

The residential area in Kirkuk has developed because of population growth in the city as a result of the impact of two important factors of growth, migration, increasing demand on residence thus effective clearly in the expansion of the city and all directions particular towards the south and southwest of the city [4].

### 2.2.2 Commercial areas

That means function of commerce. The region where he overcomes business on any other activity, they are characterized by the concentration of heavy for shops dealing different commodities. Also the goods include some light industry, handicrafts and comprising various services such as the offices of lawyers and companies transporting goods and doctors' offices, travel, tourism offices, hotels and other services. It aims exercised from behind and earn a profit increase of income under the standard commercial profit. Total area of commercial use in the city is about 1.607km$^2$ a proportion of 1.434% [5] .

### 2.2.3 Industry areas

The function of important industrial functions for the role in the economic construction of cities. They contribute an operation of a significant number of labor in the development of the city. The service population and represents industrial use wider area of commercial use and has the power of competition comes second place after the commercial use is concentrated in the city. This figure refer to the percentage of land uses in Kirkuk city, as shown in figure 3 [6].

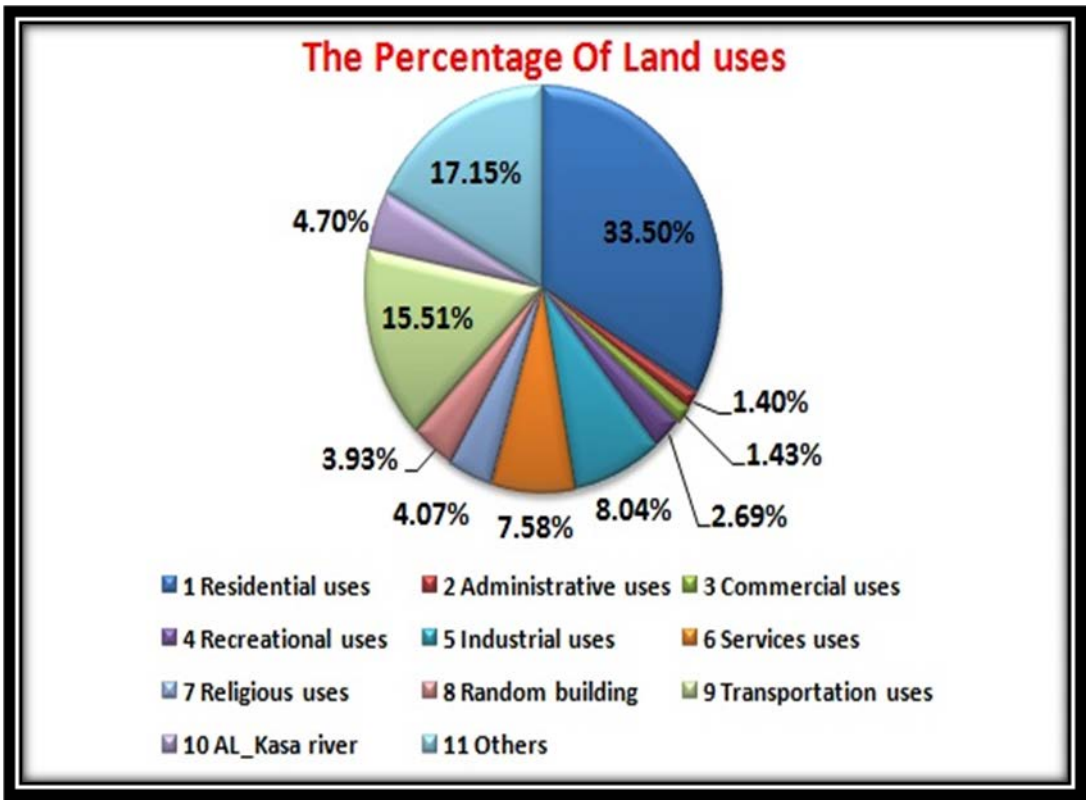



**Figure 3:** Percentage of Land Uses in Kirkuk

### 2.3 Historical Overview of Php Language

The first version of PHP(PHP/FI,) which stood for "Personal Home Page", created in 1995, was developed by Rasmus Lerdorf were used on his home page to keep track of who was looking at his online resume .This version of PHP had support for some basic functions, mainly the ability to handle form data and support for the mySQL database [7].

According to the official PHP which came to mean "PHP: Hypertext Preprocessor Web site" www.php.net", PHP is a" widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML[8]."Starting at the end of that statement, to say that PHP can be embedded into HTML means that you can take a standard HTML page, drop in some PHP wherever you need it, and end up with a dynamic result. This feature makes PHP very accessible for anyone that's done even a little bit of HTML work. Also, PHP is a scripting language, Also, PHP is a scripting language, as differing to a programming language: PHP was designed to write Web scripts, not stand alone

applications (although, with some extra effort, you can now create applications in PHP [9].

PHP scripts run only after an event occurs—for example, when a user submits a form or open a URL. PHP is a server-side, cross-platform technology. Server-side refers to the reality that everything PHP does occurs on the server. A Web server application, like Apache or Microsoft's IIS (Internet Information Services), is required and all PHP scripts must be accessed through a URL (http://-something). Its cross-platform means that PHP runs on most operating systems, including Windows, Unix and Macintosh [10].

Other important, the PHP scripts written on one server will normally work on another with little or no modification. PHP/FI 1.0 was followed by PHP/FI 2.0 and, quickly replaced in 1997 by PHP 3.0. PHP 3.0, developed by Andi Gutmans and Zeev Suraski, was where things started to get attractive. PHP 3.0 was a complete rewrite of the original PHP/FI implementation and it included support for a wider range of databases, including MySQL and Oracle.

PHP 3.0 is extensible architecture encouraged independent developers to begin creating their own language extensions, which help to increase the language's popularity in the developer community. PHP 4.0, which was released in 2002, used a new mechanism to deliver better performance, greater reliability and scalability, support for web servers other than Apache, and a host of new language character, including built-in session management and better OOP support. then PHP5.0 released in 2004 which includes better exception handling, a more consistent XML toolkit, improved MySQL support, and a better memory manager [11].

### 2.3.1 Significance of php

Simply, when it comes to developing dynamic Web sites, PHP is more better, faster, and easier to learn than the alternatives. What you find with PHP is good performance, a good couple with almost every database available, stability, portability, and a almost limitless feature set due to its extendibility. All of this comes at no cost (PHP is open source) and with a very manageable learning curve. PHP is one of the best marriages between the ease with which beginning programmers can start using it and the ability for more advanced programmers to do everything they require. Finally, PHP has seen an exponential growth in use since its

beginning. It's the most requested module for Apache (the most-used Web server) [12].

### 2.3.2 Features

As a programming language for the Web, PHP is hard to ignore. Clean syntax, object-oriented fundamentals, an extensible architecture that encourages innovation, and excellent database integration.

#### 2.3.2.1 Simplicity

Because PHP uses a logical syntax and constant , and because it comes with a clearly written guide, the beginners find it easy to learn .Actuality, the quickest way to learn PHP is to move through the guide tutorial, and then begin looking at code samples off the Web. Within a few hours, you'll have learned the basics and will be sure enough to begin writing your own scripts. PHP can even access C libraries and take advantage of program code written for this language.

#### 2.3.2.2 Portability

PHP is available for a large variety of platforms, including Mac OS,OS/2 ,UNIX, and Microsoft Windows. also, because PHP code is not compiled and interpreted, PHP scripts written on one platform generally work as is on any other platform for which an interpreter exists. So it means that developers can code on Windows and set up on UNIX without any major difficulties.

#### 2.3.2.3 Speed

PHP scripts run faster than most other scripting languages, and with many independent standard putting the language ahead of competing alternatives like ASP.NET, Perl and JSP. PHP 4.0 was raised the performance bar with its completely new parsing engine. PHP 5.0 improves performance even more use of an optimized memory manager, and the use of object handles that decrease memory utilization and help applications run faster.

#### 2.3.2.4 Open source

The best thing about PHP is that it's free—its source code is freely available on the Web, So developers can install and use it without paying licensing fees or

investing in expensive hardware or software. Using PHP can as a result extensively reduce the development costs of a software application, without compromising on any performance or reliability. The open-source approach also ensures quicker integration of new technologies into the core language and faster bug fixes .

#### 2.3.2.5 Extensible

PHP's creators built an extensible architecture that enables developers to easily add support for new technologies to the language through modular extensions. This extensibility keeps PHP fresh. So think about what PHP lets you do when its add -on modules : dynamically create PDF, and SWF files ,image ; connect to IMAP and POP3 servers; interface with MySQL, Oracle, and SQLite databases; and execute Java ,Perl , and COM code through a PHP script. And there's also an online repository of free PHP classes called PEAR.

### 2.3.3 Php procedures

As previously known, PHP is a server-side language. This means that the code you write in PHP sits on a host computer called a server. The server sends Web pages to the requesting visitors (you, the client, with your Web
browser). When a visitor goes to a Web site written in PHP, the server reads the PHP code and then processes it according to its scripted directions. In the example shown in Figure 4, the PHP code tells the server to send the appropriate data—HTML code—to the Web browser, which treats the received code as it would a standard HTML page. This differs from a static HTML site where, when a request is made, the server merely sends the HTML data to the Web browser and there is no server-side interpretation occurring [11]. Because no server side action is required, you can run HTML pages in your Web browser without using a server at all. To the end user and their Web browser there is no perceptible difference between what home.html and home.php may look like, but how that page's content was created will be significantly different [13].

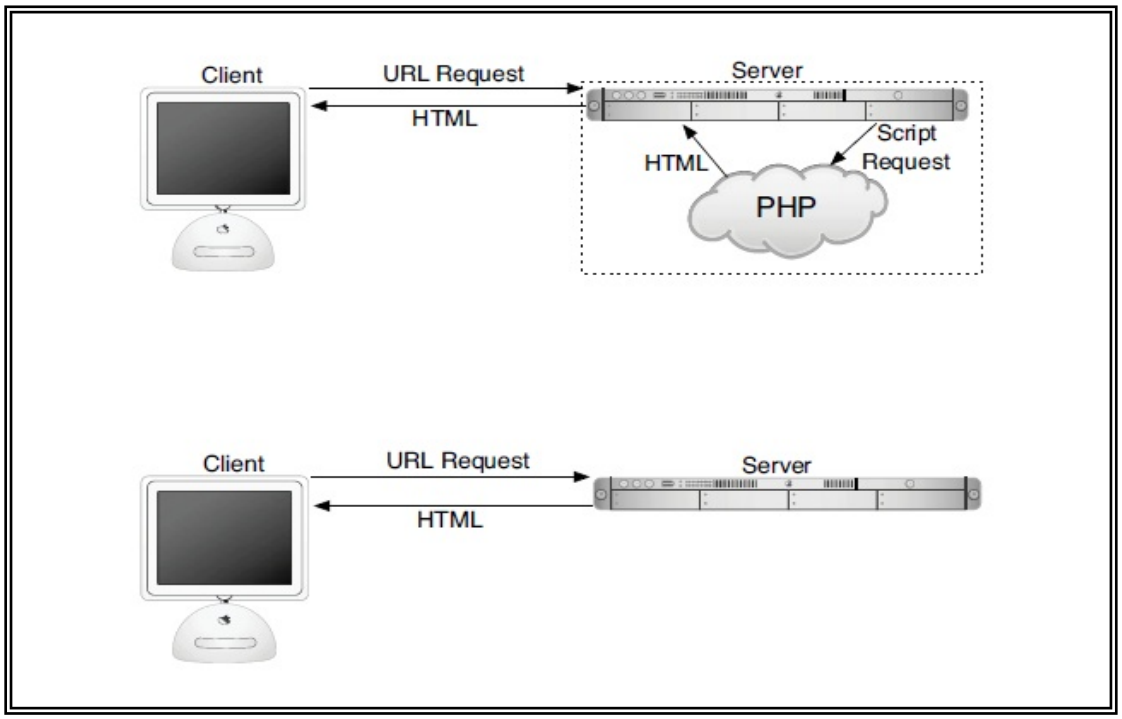



**Figure 4:** PHP Procedures

PHP and MySQL the suited couple as noted previously, one of the most important factors driving PHP's popularity over the last couple of years has been its support for a variety of databases, including MySQL, Oracle and Microsoft Access. PHP enables developers to build complex data driven web applications while enjoying short development cycles, so next we will explain what is MySQL.

### 2.4 MySQL Language

MySQL, going back to 1979, when Michael "Monty" produced a database system named UNIREG for the Swedish company TcX. UNIREG didn't occur for TcX account requirement , so TcX started a search for alternatives. They tried mSQL created by David Hughes, but also the attempt failed. Thus, Monty decided to create a new database server modified to his specific requirements, but based on the mSQL API (to simplify porting applications between the two) [14].

So The system, completed and released to a small group in May 1996, became MySQL 1.0.MySQL is the most popular open-source database. Like PHP, MySQL offers excellent performance, portability, and reliability, with a reasonable learning curve and little to no cost. MySQL is a database management system (DBMS) for relational databases (RDBMS). A database, in the simplest terms, is a

collection of interrelated data, be it text, numbers, or binary files, that are stored and kept organized by the DBMS. There are many types of databases, from the simple flat-file to relational and object-oriented. A relational database uses multiple tables to store information , While relational databases may involve more thought in the design and programming stages, they offer an improvement to reliability and data integrity that more than makes up for the extra effort required. Further, relational databases are more searchable and allow for concurrent users [15]. MySQL like PHP is an open-source application, meaning that it is free to use or modify the source code . But there are some cases in which you should pay for a MySQL license, especially if you are making money from the sales or integration of the MySQL product. MySQL is technically pronounced “My Ess Que Ell,” just as SQL should be said “Ess Que Ell.” This is a question many people have when first working with these technologies. While not a critical issue, it’s always best to pronounce acronyms correctly [11]. As shown in figure 5.

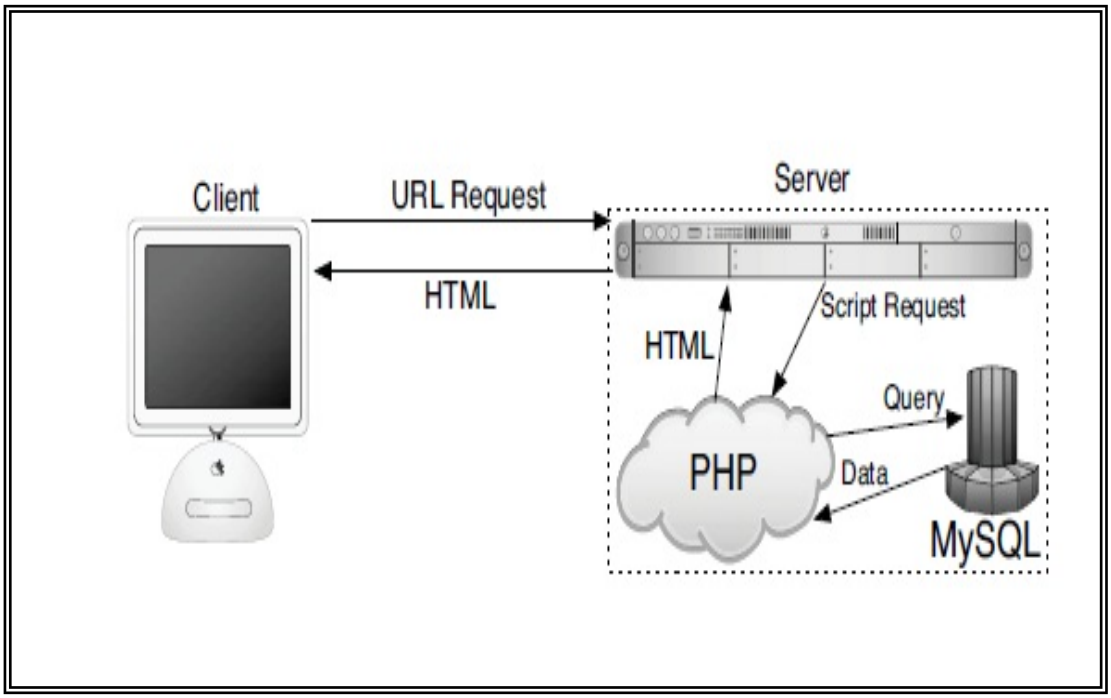



**Figure 5 :** MySQL Procedures

### 2.4.1 Features of mysql

The following sections describe MySQL's most compelling features.

#### 2.4.1.1 Speed

MySQL scores high on this parameter because in an RDBMS, speed—the time taken to execute a query and return the results to the caller—is everything , with better performance than almost all its competitors, including commercial systems .

#### 2.4.1.2 Reliability

MySQL's creds are impeccable. The MySQL RDBMS has been certified and tested for use in high-volume, mission-critical applications by some of the world's largest organizations, including HP, NASA, and Yahoo!. MySQL has deep roots in the open-source community, so every new release is typically tested by users over the world, on different operating systems and in different operating conditions, to ensure that it is completely bug-free before being certified for use. more, every new release of MySQL first has to pass MySQL's in-house test suite, affectionately known as *crash-me* because its primary goal is to attempt to crash the system.

#### 2.4.1.3 Security

MySQL's developers have taken a great deal of care to ensure that MySQL is as secure as possible. So Security is an important concern when dealing with multiuser databases. MySQL comes with a sophisticated access control and privilege system to prevent unauthorized users from accessing the system. This system implemented as a five-tiered privilege hierarchy, enables MySQl administrators to protect access to sensitive data using a combination of user- and host-based authentication schemes. Users can be restricted to performing operations only on specified databases or fields, and MySQL even makes it possible to control which types of queries a user can run, at database, table, or field level.

#### 2.4.1.4 Scalability and portability

MySQL can hold extremely complex and large databases without too much of a drop in performance. Tables of several gigabytes containing hundreds of thousands of records are not rare, and the MySQL web site itself claims to use databases

containing (50) million records. And once you've got your tables filled with data, you can move them from one platform to another without any difficulty—MySQL is available for both UNIX and non-UNIX operating systems, including and Windows 95, 98,2000,XP ,Linux, Solaris, Free BSD, OS/2,AND MacOS. It development team has taken pains to make MySQL easy to use, administer, and optimize.

#### 2.4.1.5 Wide application support

MySQL exposes application programming interface APIs to many different programming languages, thus making it possible to write database-driven applications in the language of your choice. Additionally, hooks to MySQL are available in C, C++, Perl, Python, and Tcl, to offer developers maximum freedom in designing MySQL-backed applications.

#### 2.4.1.6 Easy licensing policy

MySQL RDBMS is licensed below the GPL, and users can free download it and modify the source code of the application to their needs, and to use it to power their applications free of cost. This licensing policy has only fuelled MySQL's popularity, creating an active and enthusiastic global community of MySQL developers and users. This community plays an active role in keeping MySQL ahead of its competition, both by crash-testing the software for reliability on millions of installations worldwide and by extending the core engine to stay abreast of the latest technologies and newest developments.

#### 2.4.1.7 Ease of use

Most commercial RDBMSs are unapproachable, with cryptic command-line interfaces and hundreds of tunable parameters. Not this one, though—well aware that a complex interface adds to the total cost of ownership of an RDBMS, the MySQL

## 2.5 Sample Applications

Sample of the types of applications that developers have used PHP and MySQL for:

- **Horde:** Is a PHP-based application development framework that provides the foundation for a suite of web-based applications,
  including a Webmail client, a contact manager, a file manager, and a news client [16].

- **Midgard:** Is a template-based content management system (CMS) that provides a WYSIWYG interface for building web sites. It includes a web-based administrative interface to easily add and delete content, as well as support for content in multiple languages [17].
- **Drupal:** Is a content management system that enables users to publish and manage many different types of content. It supports news articles and content, polls, discussion forums, weblogs
  and download archives, and comes in handy if you need to jump-start a community-based web site or personal weblog [18].
- **Php Groupware:** Is a PHP-based multiuser, multi language application suite. Usable through a web browser, it provides a calendar, to-do list, e-mail client, file manager, and address book [19].
- **Gallery:** uses PHP and MySQL to create a highly configurable digital photo archive complete with automatic thumbnail creation, image captioning and editing, keyword search, and gallery-level authentication [20].
- **hp Ads New:** Is a banner rotation and tracking system for web sites that enables site administrators to manage advertisers, display banners in rotation, and generate reports on views.
  In the follow below we explained the PHP language and MySQL database ,that we will built the mobile web app ,So what is mobile web app [21].

## 2.6 Mobile Web Application

A mobile web application breathes inside a browser application. These applications make use of standard web technologies like HTML, CSS, JavaScript and other scripting languages.

Web applications are platform neutral and can run across devices.A mobile web app is designed specifically for the touch, small screens capabilities of smartphones and tablets. Mobile web app can be accessed using any mobile device's Web browser, like Safari and Chrome. Simply by type in the URL or click on a link to your website, and the website automatically find out the mobile device and follow up the viewer to the mobile version of you website [22].

### 2.7 Benefits Of A Mobile Web Application

The primary benefit of a mobile website is that it makes regular websites more accessible for mobile users. It can have all the same elements such as its look and feel, pages, images and other content as the regular version of the website. By having a mobile website, customers can access your website anytime, anywhere using any device, without compromising the user experience. Also Lowest development & maintenance cost and same development team for different platforms, Instant updates for clients on newer feature release [23].

### 2.8 Java Android

Android applications are developed using the Java language. Java is a very popular programming language developed by Sun Microsystems (now owned by Oracle). Developed long after C and C++, Java incorporates many of the powerful features of those powerful languages while addressing some of their drawbacks. Still, programming languages are only as powerful as their libraries. These libraries exist to help developers build applications let’s take this bubble idea a bit further. Because Java applications run within the bubble that is a virtual machine, they are isolated from the underlying device hardware. Therefore, a virtual machine can encapsulate, contain, and manage code execution in a safe manner compared to languages that operate in machine code directly. The Android platform takes things a step further. Each Android application runs on the (Linux-based) operating system using a different user account and in its own instance of the Dalvik VM. Android applications are closely monitored by the operating system and shut down if they don’t play nice (e.g. use too much processing power, become unresponsive, waste resources, etc.). Therefore, it’s important to develop applications that are stable and

responsive. Applications can communicate with one another using well-defined protocols [24]. Some of the Java's important core features are:

- It's easy to learn and understand
- It's designed to be platform-independent and secure, using virtual machines
- It's object-oriented

## 2.9 Previous Studies

In the past the only way to find homes for sale was to engage a real estate agent to send you listings or drive up and down the streets scouting "for sale" signs. And it takes you a long time. So with the development of technology and advancement Especially in recent years, an explosion of online real estate listings services has drastically changed the way people's look for homes. It's now possible, with a click of a mouse, from anywhere at any time to find the sales price of the home next door, search for listings in a given school zone and take virtual tours of homes you're interested in.

This surge of online information has not eliminated real estate agents, but has changed their role from keeper of the listings to negotiator and guide [25].

### 2.9.1 Sample of real estates application

#### 2.9.1.1 eMart

eMart, Dubai Real Estate Market , is a good initiative launched by the Dubai Land Department in 2012 in order to support real estate market process by providing excellent real estate services from selling, renting, buying, and providing and updates the latest real estate news , also there's a side providing a selection of payment options. The portal, as such, obtain supervisory role over all real estate operations in order to limit prices and ensure market stability."

(eMart) is an online portal; designed especially for real estate professionals to list their properties for sale and rent in Dubai. This system provides public with number of e-services allowing them to search for properties listed for auction, sale or rent,

which communicate with , brokers and management companies and also complete sale transactions online end to end [26].

1. **The Main Goals of eMart** :
    - Complete the sales and rent processes electronically anywhere anytime with online payment
    - Supply brokers, developers ,investors and owners, with trusted market place for property trading
    - support stakeholders decisions to find their property for sale, or rent easily through one trusted reference (electronic portal on browser and smart devices like : mobiles, tablets)
    - Gives the actual prices of properties for sale and rent
    - Present exact figures for property prices and Stop fake listing
    - Dubai Land Department objective is to achieve in the coming 3 years 30% of market share registration through eMart compared to the total sales transactions registration in DLD outside the boundaries of eMart [27].

2. **Challenges**
    - To start selling and buying properties online cultural need to change.
    - Online payment end to end of big amounts property transactions.
    - All owners participate in listing their properties in eMart to present transparent and complete information to the real estate market
    - The rapidity and dynamic changes in Dubai real estate market make the cycle of listing, property examination, buying and paying online a long process [28].

#### 2.9.1.2 Zillow

Zillow is the most important real estate and rental marketplace dedicated to empowering consumers with data, motivation and knowledge around the place they call home, and connecting them with the best local professionals who can help.[29]

Zillow launched in 2006 and is headquartered in Seattle [30].

Zillow serves the full lifecycle of buying, selling, renting, financing, remodeling and more. Zillow operates the most popular collection of mobile real estate apps, with more than two dozen apps across all major platforms [31].

- **Zillow Features**

Zillow has data on (110) million homes across the united estate , it offers several features including value changes of each home in a given time frame, a aerial views of homes, and prices of comparable homes in the area [32].

It also provides basic information on a given home, such as square footage and the number of bedrooms and bathrooms. Users can also get current estimates of homes if there was a significant change made [33].

Zillow provides an application programing interface (API) and developer support network.

In December 2006, Zillow launched new pieces of functionality: allowing users to post homes for sale and set a "Make Me Move" price (an informal way to pre-market a home.

In 2006, Zillow teamed with Microsoft to offer Bird's Eye View, a feature in Microsoft Virtual Earth, which shows (in certain areas) clearer aerial photographs taken from airplanes rather than conventional satellite imagery [34].

- **Zillow Flaws**

First, most Americans still don’t find the home they need to purchase on the internet. Given the foundation of America’s two-agent 6% fee system, this makes sense , some of Americans  can be explained by the need for an agent that is known and trusted, and the feeling that purchasing a house is a risky endeavor, consumers are not likely to chose the featured agent on a Zillow  listing. They will instead opt for the agent their parents used, or the agent that lives down the street.

The second reason Zillow lack the ability to review web traffic is because they do not have direct access to the Multiple Listing Service (MLS) listings of brokers without the broker’s compliance [35].

# CHAPTER 3
# METHODOLOGY

## 3.1 Real Estates Developer

The real estate market trading in Kirkuk since thousands of years based on the old traditional methods, but with the advent of ICT and e-government and the adoption of several countries Arab and international cities on this development became necessary to work seriously on this topic to facilitate e-marketing real estate process in this city. Where we build a database by MySQl covering all the needs of land use in the city by linking with high level program languages and specialized in web design and applications PHP version 6, and work to create mobile application via java Android, to make possible citizen to selection genus Property with high accuracy and speed in the search engine.

## 3.2 MySQL Procedures

MySQL is a database management system (DBMS) for relational databases (RDBMS). A database, in the simplest terms, is a collection of interrelated data, be it text, numbers, or binary files, that are stored and kept organized by the DBMS.

### 3.2.1 Create and drop tables

Through this command we created windows work requirements as shown in Figure 6.

```
-- Table structure for amenities
-- ----------------------------
DROP TABLE IF EXISTS `amenities`;
CREATE TABLE `amenities` (
  `id` tinyint(4) NOT NULL AUTO_INCREMENT,
  `name` varchar(255) DEFAULT NULL,
  `created_at` datetime DEFAULT NULL,
  `updated_at` datetime DEFAULT NULL,
  PRIMARY KEY (`id`)
) ENGINE=InnoDB AUTO_INCREMENT=1 DEFAULT CHARSET=latin1;

-- ----------------------------
-- Table structure for cities
-- ----------------------------
DROP TABLE IF EXISTS `cities`;
CREATE TABLE `cities` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `name` varchar(50) CHARACTER SET utf8 COLLATE utf8_unicode_ci NOT NULL,
  `county_id` int(11) NOT NULL,
  `created_at` datetime DEFAULT NULL,
  `updated_at` datetime DEFAULT NULL,
  PRIMARY KEY (`id`)
) ENGINE=InnoDB AUTO_INCREMENT=1 DEFAULT CHARSET=latin1;

-- ----------------------------
-- Table structure for estates
-- ----------------------------
DROP TABLE IF EXISTS `estates`;
CREATE TABLE `estates` (
  `id` bigint(20) NOT NULL AUTO_INCREMENT,
  `title` varchar(255) COLLATE utf8_unicode_ci DEFAULT NULL,
  `content` varchar(2000) COLLATE utf8_unicode_ci DEFAULT NULL,
  `price` decimal(12,2) DEFAULT NULL,
  `user_id` bigint(20) DEFAULT NULL,
  `county_id` int(11) DEFAULT NULL,
  `image_path` varchar(500) COLLATE utf8_unicode_ci DEFAULT NULL,
  `types_id` int(11) DEFAULT NULL,
  `report` tinyint(4) NOT NULL DEFAULT '0',
  `area` varchar(200) COLLATE utf8_unicode_ci DEFAULT NULL,
  `bathrooms` tinyint(4) NOT NULL DEFAULT '0',
  `bedrooms` tinyint(4) DEFAULT '0',
  `address` varchar(200) COLLATE utf8_unicode_ci DEFAULT NULL,
  `lng` varchar(500) COLLATE utf8_unicode_ci DEFAULT NULL,
  `lat` varchar(500) COLLATE utf8_unicode_ci DEFAULT NULL,
  `description` varchar(500) COLLATE utf8_unicode_ci DEFAULT NULL,
  `marker_id` varchar(200) COLLATE utf8_unicode_ci NOT NULL,
  `purpose` tinyint(4) NOT NULL,
  `status` tinyint(4) DEFAULT NULL,
  `activated` tinyint(4) NOT NULL DEFAULT '0',
  `created_at` datetime DEFAULT NULL,
  `updated_at` datetime DEFAULT NULL,
  `time_rate` tinyint(4) DEFAULT NULL,
  `cities_id` int(11) DEFAULT NULL,
  `view_counter` bigint(20) DEFAULT '0',
  PRIMARY KEY (`id`)
) ENGINE=InnoDB AUTO_INCREMENT=1 DEFAULT CHARSET=utf8 COLLATE=utf8_unicode_ci;

-- ----------------------------
```

**Figure 6:** Sample Codes of Create and Drop Tables

### 3.2.2 Insert into

For insert the countries where we have to choose the country of study as shown in figure 7.

```
NSERT INTO `countries` VALUES ('83', 'Greece', 'GR', 'GRC', '300', 'EUR', 'Eur', '€', 'GR.png');
NSERT INTO `countries` VALUES ('84', 'Greenland', 'GL', 'GRL', '304', 'DKK', 'Kro', 'kr', 'GL.png');
NSERT INTO `countries` VALUES ('85', 'Grenada', 'GD', 'GRD', '308', 'XCD', 'Dol', '$', 'GD.png');
NSERT INTO `countries` VALUES ('86', 'Guadeloupe', 'GP', 'GLP', '312', 'EUR', 'Eur', '€', 'GP.png');
NSERT INTO `countries` VALUES ('87', 'Guam', 'GU', 'GUM', '316', 'USD', 'Dol', '$', 'GU.png');
NSERT INTO `countries` VALUES ('88', 'Guatemala', 'GT', 'GTM', '320', 'GTQ', 'Que', 'Q', 'GT.png');
NSERT INTO `countries` VALUES ('89', 'Guinea', 'GN', 'GIN', '324', 'GNF', 'Fra', null, 'GN.png');
NSERT INTO `countries` VALUES ('90', 'Guinea-Bissau', 'GW', 'GNB', '624', 'XOF', 'Fra', null, 'GW.png');
NSERT INTO `countries` VALUES ('91', 'Guyana', 'GY', 'GUY', '328', 'GYD', 'Dol', '$', 'GY.png');
NSERT INTO `countries` VALUES ('92', 'Haiti', 'HT', 'HTI', '332', 'HTG', 'Gou', 'G', 'HT.png');
NSERT INTO `countries` VALUES ('93', 'Heard Island and McDonald Islands', 'HM', 'HMD', '334', 'AUD', 'Dol', '$', 'HM.png');
NSERT INTO `countries` VALUES ('94', 'Honduras', 'HN', 'HND', '340', 'HNL', 'Lem', 'L', 'HN.png');
NSERT INTO `countries` VALUES ('95', 'Hong Kong', 'HK', 'HKG', '344', 'HKD', 'Dol', '$', 'HK.png');
NSERT INTO `countries` VALUES ('96', 'Hungary', 'HU', 'HUN', '348', 'HUF', 'For', 'Ft', 'HU.png');
NSERT INTO `countries` VALUES ('97', 'Iceland', 'IS', 'ISL', '352', 'ISK', 'Kro', 'kr', 'IS.png');
NSERT INTO `countries` VALUES ('98', 'India', 'IN', 'IND', '356', 'INR', 'Rup', '', 'IN.png');
NSERT INTO `countries` VALUES ('99', 'Indonesia', 'ID', 'IDN', '360', 'IDR', 'Rup', 'Rp', 'ID.png');
NSERT INTO `countries` VALUES ('100', 'Iran', 'IR', 'IRN', '364', 'IRR', 'Ria', '', 'IR.png');
NSERT INTO `countries` VALUES ('101', 'Iraq', 'IQ', 'IRQ', '368', 'IQD', 'Din', null, 'IQ.png');
NSERT INTO `countries` VALUES ('102', 'Ireland', 'IE', 'IRL', '372', 'EUR', 'Eur', '€', 'IE.png');
NSERT INTO `countries` VALUES ('103', 'Israel', 'IL', 'ISR', '376', 'ILS', 'She', '', 'IL.png');
NSERT INTO `countries` VALUES ('104', 'Italy', 'IT', 'ITA', '380', 'EUR', 'Eur', '€', 'IT.png');
NSERT INTO `countries` VALUES ('105', 'Ivory Coast', 'CI', 'CIV', '384', 'XOF', 'Fra', null, 'CI.png');
NSERT INTO `countries` VALUES ('106', 'Jamaica', 'JM', 'JAM', '388', 'JMD', 'Dol', '$', 'JM.png');
NSERT INTO `countries` VALUES ('107', 'Japan', 'JP', 'JPN', '392', 'JPY', 'Yen', '¥', 'JP.png');
NSERT INTO `countries` VALUES ('108', 'Jordan', 'JO', 'JOR', '400', 'JOD', 'Din', null, 'JO.png');
NSERT INTO `countries` VALUES ('109', 'Kazakhstan', 'KZ', 'KAZ', '398', 'KZT', 'Ten', 'лв', 'KZ.png');
NSERT INTO `countries` VALUES ('110', 'Kenya', 'KE', 'KEN', '404', 'KES', 'Shi', null, 'KE.png');
NSERT INTO `countries` VALUES ('111', 'Kiribati', 'KI', 'KIR', '296', 'AUD', 'Dol', '$', 'KI.png');
NSERT INTO `countries` VALUES ('112', 'Kuwait', 'KW', 'KWT', '414', 'KWD', 'Din', null, 'KW.png');
NSERT INTO `countries` VALUES ('113', 'Kyrgyzstan', 'KG', 'KGZ', '417', 'KGS', 'Som', 'лв', 'KG.png');
```

**Figure 7:** Sample Codes of Insert into

### 3.3 Necessity to Use Php Language

PHP is a“widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML.

#### 3.3.1 Web page design

By using PHP language we have built interface containing all the related articles and the needs of the application for the purpose of data entry by the administrator to get to page results.

#### 3.3.2 Contents of the Interface

- **Dashboard:** To design the main page as shown in figure 8.

```
function index(){
        if(!isset($_SESSION['user'])){
                redirect('admin/dashboard/login');
        }else{
                $user=$_SESSION['user'][0];
                if($user->perm==USER){
                        redirect('admin/denied');
                }
        }
        $this->bk_title=$this->lang->line('msg_dashboard');
        $this->load->model('contact_model');
        $this->load->model('estates_model');
        $data['estates']=$this->estates_model->get("*,estates.id as id", false,  false,  0, 10, array('estates.created_at'=>'DESC'));
        $data['contact']=$this->contact_model->get("*", array('is_read'=>IS_PENDING),  false,  0, 10, array('created_at'=>'DESC'));
        $this->render_backend_tp('backends/dashboard/index',$data);

    }
```

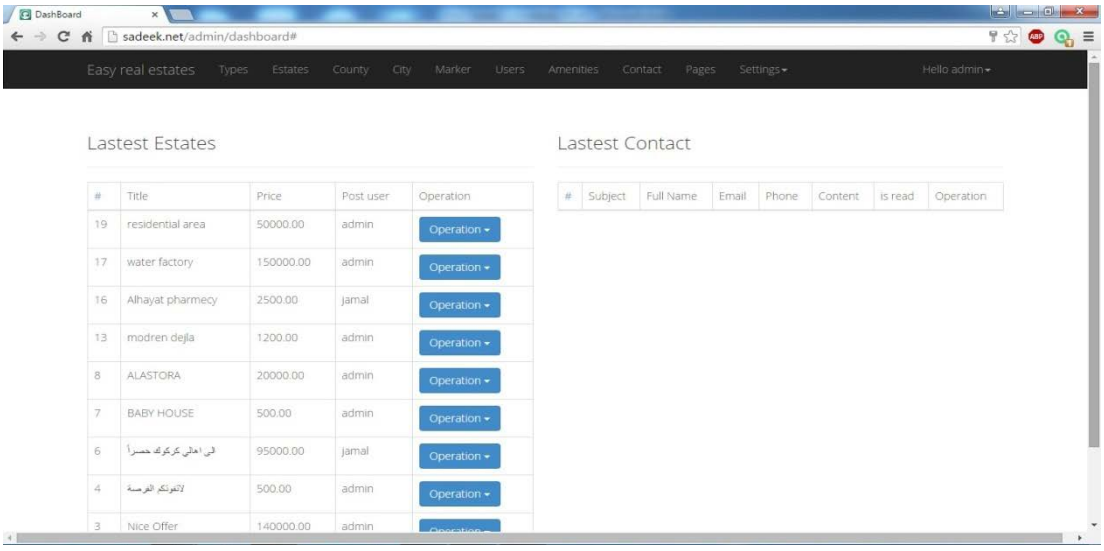



**Figure 8:** Sample Codes of Dashboard

- **Type**: To Add the type of the real estate as shown in figure 9.

```
	public function check_name_exist_add($name){
		$data=$this->type_model->get_by_exact_name($name, 0, 1);
		if ($data!=null)
		{
			$this->form_validation->set_message('check_name_exist_add', $this->lang->line('vl_feild_value_exist'));
			return FALSE;
		}
		else
		{
			return TRUE;
		}
	}

	public function check_name_exist_edit(){
		$id=$this->input->post('id_post');
		$name=$this->input->post('name');
		$data=$this->type_model->get_by_name_and_diff_id($id,$name);
		if($data!=null) {
			$this->form_validation->set_message('check_name_exist_edit', $this->lang->line('vl_feild_value_exist'));
			return FALSE;
		} else {
			return TRUE;


	public function edit(){
		if(isset($_GET['id'])){
			$id=$this->input->get('id');
			if($id==null || !is_numeric($id) || $id<=0){
				redirect('notfound');
			}
  if(isset($_POST['id_post'])){
	$id = $this->input->post('id_post');
this->form_validation->set_rules('name',$this->lang->line('msg_name'), 'trim|required|min_length[2]|max_length[60]|xss_clean|callback_check_name_exis
	if($this->form_validation->run()!=false){
		$data['name']=$this->input->post('name');
		$this->type_model->update($data,array('id'=>$id));
		$this->session->set_flashdata('msg_ok',$this->lang->line('edit_successfully'));
		redirect(base_url().'admin/types/edit?id='.$id);
			}
		}
		$data['obj']=$this->type_model->get_by_id($id);
		if($data['obj']==null){
			redirect('notfound');
		}
		$this->render_backend_tp('backends/types/edit',$data);
	}else{
		redirect('notfound');
		}
	}

	public function delete(){
		if(isset($_GET['id'])){
			$id=$this->input->get('id');
			if($id==null || !is_numeric($id) || $id<=0){
				redirect('notfound');
			}
			$this->type_model->remove_by_id($id);
			redirect('admin/types');
		}else{
			redirect('notfound');
		}
	}


	 public function search(){
		if(isset($_GET['query'])){
			$query=$this->input->get('query');
			$data=parent::getDataView();
			$page     = $this->input->get('page') ? $this->input->get('page') : 0;
			$per_page = $this->input->get('per_page') ? $this->input->get('per_page') : 10;
			$order    = $this->input->get('order') ? $this->input->get('order') : 'DESC';
			$config['total_rows'] = $this->type_model->total(array(), array('name'=>$query));
			$config['base_url']= base_url() . 'index.php/admin/types/search?order='.$order.'&query='.$query;
			$config['per_page']=$per_page;
			$data['msg_label']=$this->config->item('msg_label');
			$this->pagination->initialize($config);
			$data['list'] = $this->type_model->get_by_name($query,$page,$per_page);
			$data['page_link'] = $this->pagination->create_links();
			$data['search_title']='Result search for "'.$query.'"';
			$this->render_backend_tp('backends/types/index',$data);

		}
	}
}
?>
```

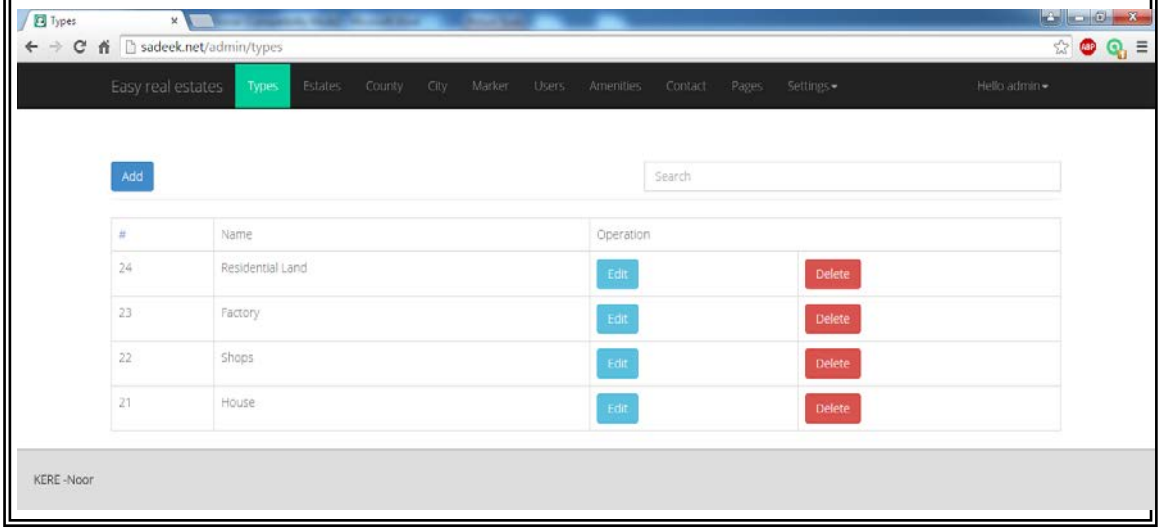



**Figure 9:** Sample Codes of Type

- **Estates:** To add the details of the estates as shown in figure 10.

```
public function remote_add(){
        if(!isset($_SESSION['user'])){
                //login to continue
                echo json_encode(array('ok'=>2));
                exit();
        }
        if(isset($_POST['title'])){
                $title=$this->input->post('title');
                $bathrooms=$this->input->post('bathrooms');
                $bedrooms=$this->input->post('bedrooms');
                $types=$this->input->post('types');
                $content=$content=preg_replace('/[\r\n]+/', "", htmlspecialchars($this->input->post('content')));
                $county=$this->input->post('county');
                $lat=$this->input->post('lat');
                $lng=$this->input->post('lng');
                $price=$this->input->post('price');
                $purpose=$this->input->post('purpose');
                $address=$this->input->post('address');
                $status=$this->input->post('status');
                $activated=$this->input->post('activate');
                $time_rate=$this->input->post('time_rate');
                $cities_id=$this->input->post('cities');
                $area=$this->input->post('area');
                $marker=$this->input->post('marker');
                $description=$this->input->post('description');
                $user=$_SESSION['user'][0];
                $data_array=array(
                        'title'=>$title,
                        'bathrooms'=>$bathrooms,
                        'bedrooms'=>$bedrooms,
                        'types_id'=>$types,
                        'content'=>$content,
                        'county_id'=>$county,
                        'lat'=>$lat,
                        'lng'=>$lng,
                        'price'=>$price,
                        'purpose'=>$purpose,
                        'address'=>$address,
                        'user_id'=>$user->id,
                        'cities_id'=>$cities_id,
                        'area'=>$area,
                        'marker_id'=>$marker,
                        'description'=>$description
                        );
                if($activated!=null){
                        $data_array['activated']=$activated;
                }
                if($status!=null){
                        $data_array['status']=$status;
                }
                if($time_rate!=null){
                        $data_array['time_rate']=$time_rate;
                }

                $estates_id = $this->estates_model->insert($data_array);
                if($estates_id!=0){
                        if(isset($_POST['amen'])){
                                $amenities=$_POST['amen'];
                                $this->load->model('estates_amenities_model');
                                foreach ($amenities as $id) {
                                        $data_array=array('estates_id'=>$estates_id,'amenities_id'=>$id);
                                        $this->estates_amenities_model-> insert($data_array);
                                }
                        }
                        echo json_encode(array('ok'=>1));
                }else{
                        echo json_encode(array('ok'=>0));
                }
        }else{
                echo json_encode(array('ok'=>0));
        }
}


public function activated(){
        parent::authentication_backend();
        if(isset($_GET['id'])){
                $id=$this->input->get('id');
                echo $id;
                $this->estates_model->update(array('activated'=>1),array('id'=>$id));
        }
        redirect('admin/estates');
}

public function deactivated(){
        parent::authentication_backend();
        if(isset($_GET['id'])){
                $id=$this->input->get('id');
                $this->estates_model->update(array('activated'=>0),array('id'=>$id));
        }
        redirect('admin/estates');
}
```

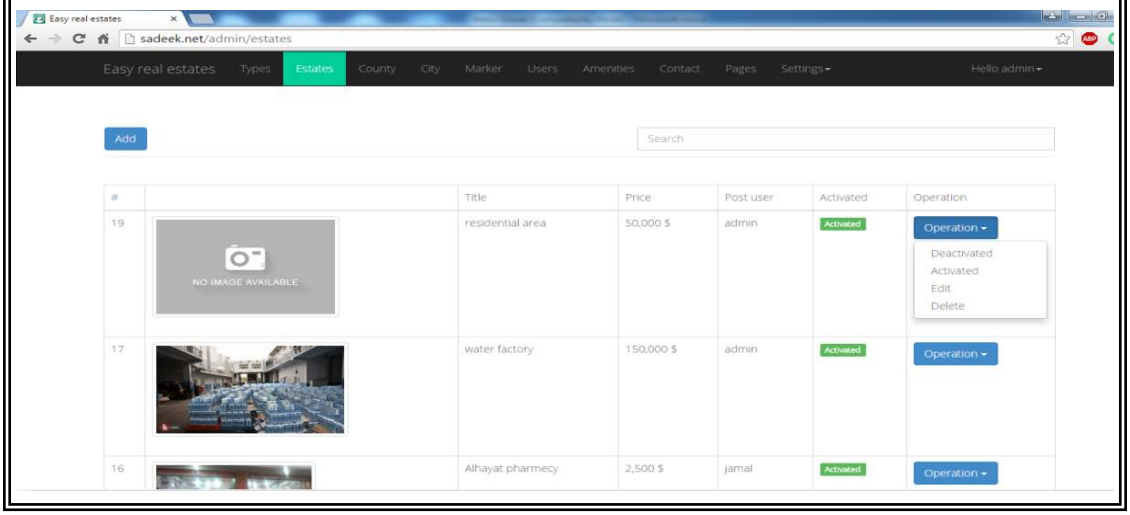



**Figure 10:** Sample Codes of Estates

- **County**: To add the name of county as shown in figure 11.

```
public function create(){
        if(isset($_POST['name'])){
        $data['name']=$this->input->post('name');
  $this->form_validation->set_rules('name','name', 'trim|required|min_length[2]|max_length[60]|xss_clean|callback_check_name_exist_add');
                if($this->form_validation->run()!=false){
                        $insert_id=$this->county_model->insert($data);
                        if($insert_id!=0){
                                $this->session->set_flashdata('msg_ok',$this->lang->line('add_successfully'));
                                redirect(base_url().'admin/county/create');
                        }
                }
        }
        $this->render_backend_tp('backends/county/add');
}
```

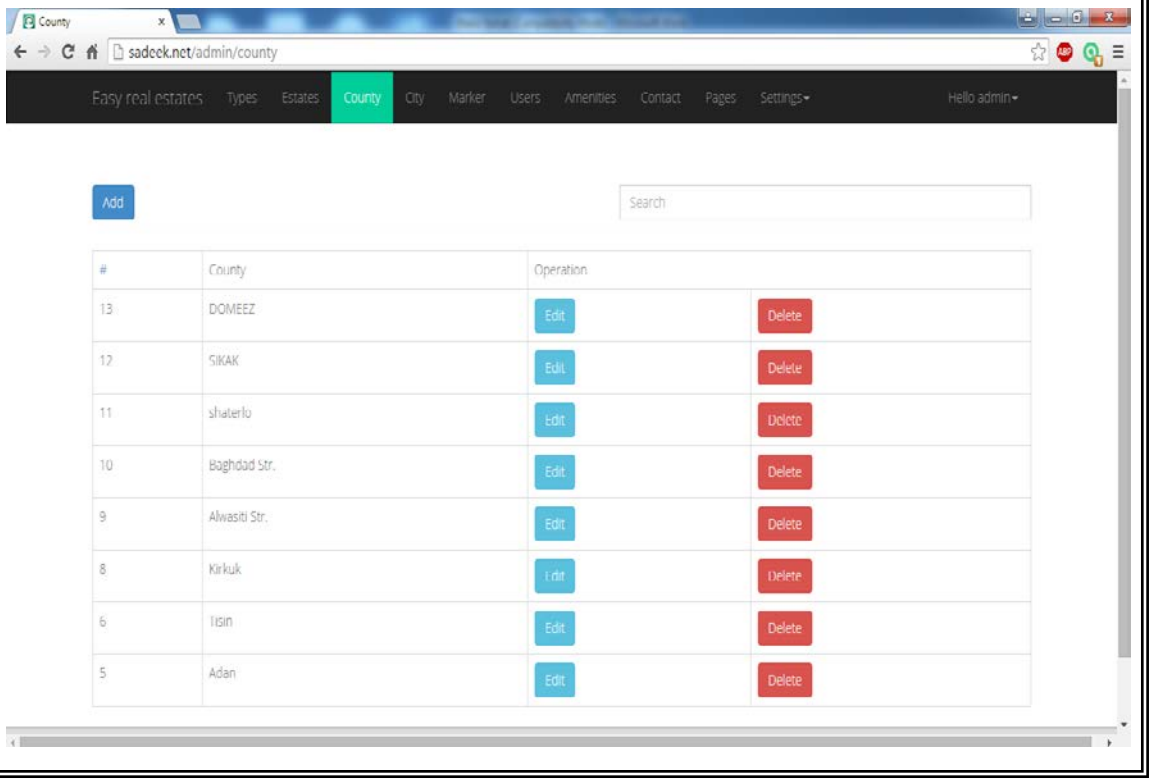



**Figure 11:** Sample Codes of County

- **City**: To add the cities as shown in figure 12.

```
public function create(){
        parent::authentication_backend();
        if(isset($_POST['name'])){
                $data['name']=$this->input->post('name');
                $data['county_id']=$this->input->post('county');
                $this->form_validation->set_rules('name','name', 'trim|required|min_length[2]|max_length[60]|xss_clean');
                $this->form_validation->set_rules('county', 'county', 'trim|required|xss_clean');
                if($this->form_validation->run()!=false){
                        $insert_id=$this->cities_model->insert($data);
                        if($insert_id!=0){
                                $this->session->set_flashdata('msg_ok',$this->lang->line('add_successfully'));
                                redirect(base_url().'admin/cities/create');
                        }
                }
        }
```

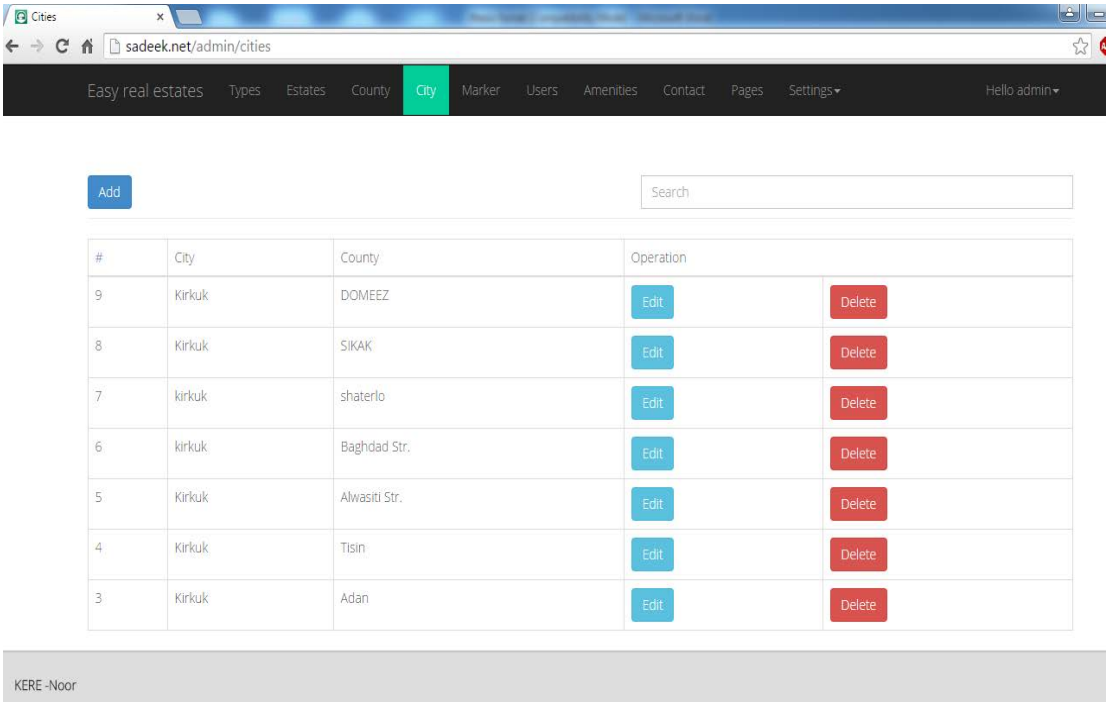



**Figure 12:** Sample Codes of City

- **User**: To add the broker details as shown in figure 13.

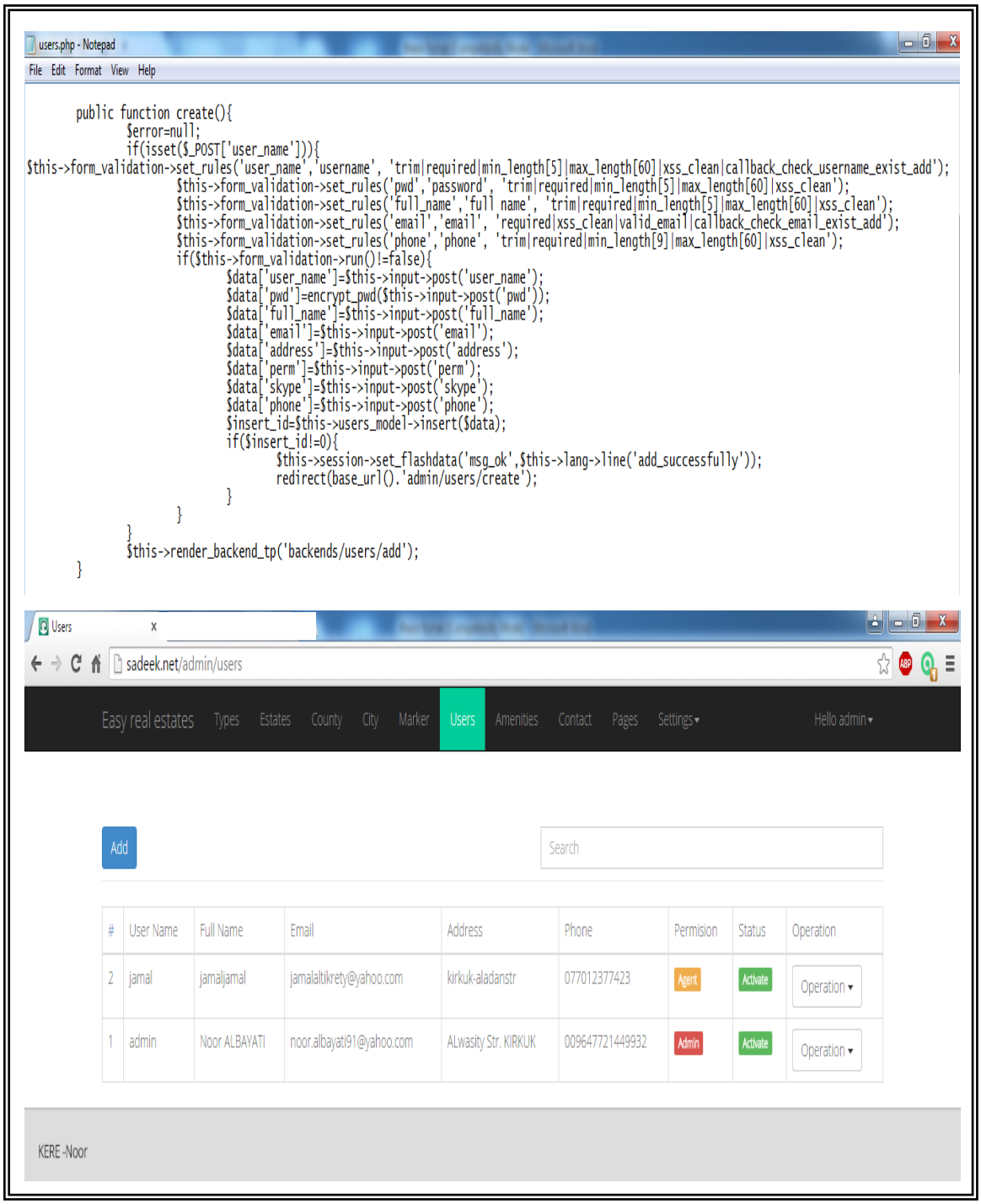



**Figure 13:** Sample Codes of User

- **Amenities**: the extension of the real estates as shown in figure 14.

```
public function create(){
        if(isset($_POST['name'])){
                $data['name']=$this->input->post('name');
        $this->form_validation->set_rules('name','name', 'trim|required|min_length[2]|max_length[60]|xss_clean|callback_check_name_exist_add')
                if($this->form_validation->run()!=false){
                        $insert_id=$this->amenities_model->insert($data);
                        if($insert_id!=0){
                                $this->session->set_flashdata('msg_ok',$this->lang->line('add_successfully'));
                                redirect(base_url().'admin/amenities/create');
                        }
                }
        }
        $this->load->model('amenities_model');
        $this->render_backend_tp('backends/amenities/add');
}
```

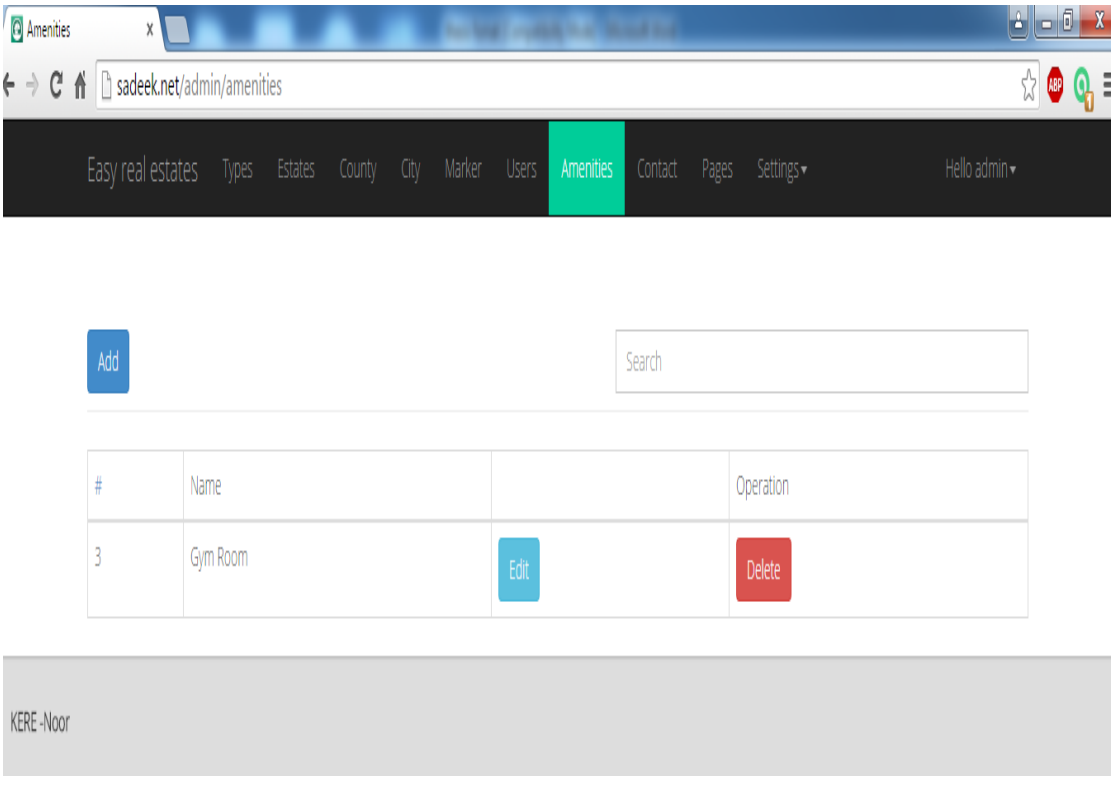
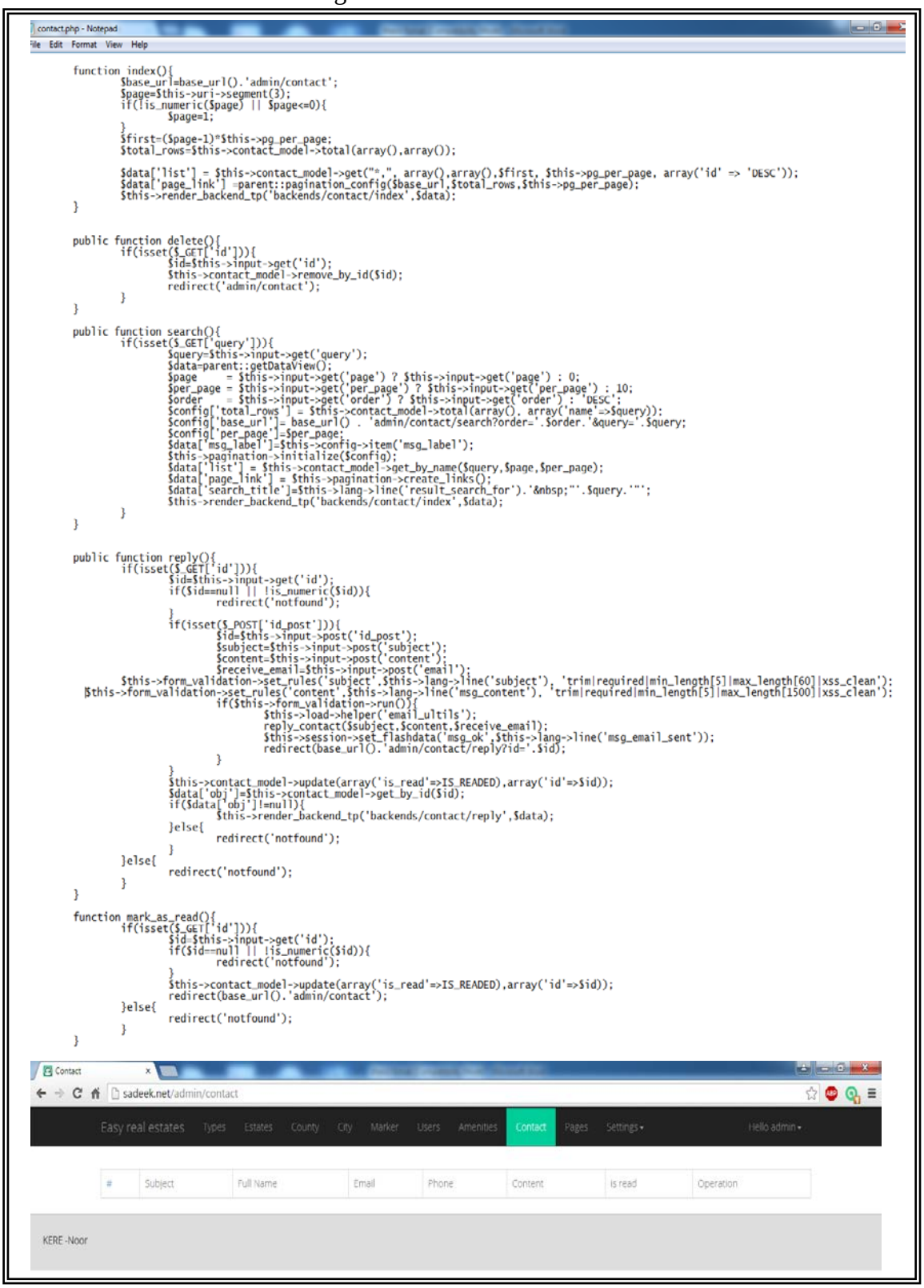



**Figure 14:** Sample Codes of Amenities

- **Contact** : At the first the users need to login to the application to contact with admin if he contact with as, so the contact button will be shows the details of the user as shown in figure 15.



```
contact.php - Notepad
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function index(){
        $base_url=base_url().'admin/contact';
        $page=$this->uri->segment(3);
        if(!is_numeric($page) || $page<=0){
                $page=1;
        }
        $first=($page-1)*$this->pg_per_page;
        $total_rows=$this->contact_model->total(array(),array());

        $data['list'] = $this->contact_model->get("*,", array(),array(),$first, $this->pg_per_page, array('id' => 'DESC'));
        $data['page_link'] =parent::pagination_config($base_url,$total_rows,$this->pg_per_page);
        $this->render_backend_tp('backends/contact/index',$data);
}


public function delete(){
        if(isset($_GET['id'])){
                $id=$this->input->get('id');
                $this->contact_model->remove_by_id($id);
                redirect('admin/contact');
        }
}

public function search(){
        if(isset($_GET['query'])){
                $query=$this->input->get('query');
                $data=parent::getDataView();
                $page     = $this->input->get('page') ? $this->input->get('page') : 0;
                $per_page = $this->input->get('per_page') ? $this->input->get('per_page') : 10;
                $order    = $this->input->get('order') ? $this->input->get('order') : 'DESC';
                $config['total_rows'] = $this->contact_model->total(array(), array('name'=>$query));
                $config['base_url']= base_url() . 'admin/contact/search?order='.$order.'&query='.$query;
                $config['per_page']=$per_page;
                $data['msg_label']=$this->config->item('msg_label');
                $this->pagination->initialize($config);
                $data['list'] = $this->contact_model->get_by_name($query,$page,$per_page);
                $data['page_link'] = $this->pagination->create_links();
                $data['search_title']=$this->lang->line('result_search_for').' "'.$query.'"';
                $this->render_backend_tp('backends/contact/index',$data);
        }
}


public function reply(){
        if(isset($_GET['id'])){
                $id=$this->input->get('id');
                if($id==null || !is_numeric($id)){
                        redirect('notfound');
                }
                if(isset($_POST['id_post'])){
                        $id=$this->input->post('id_post');
                        $subject=$this->input->post('subject');
                        $content=$this->input->post('content');
                        $receive_email=$this->input->post('email');
        $this->form_validation->set_rules('subject',$this->lang->line('subject'), 'trim|required|min_length[5]|max_length[60]|xss_clean');
  $this->form_validation->set_rules('content',$this->lang->line('msg_content'), 'trim|required|min_length[5]|max_length[1500]|xss_clean');
                        if($this->form_validation->run()){
                                $this->load->helper('email_ultils');
                                reply_contact($subject,$content,$receive_email);
                                $this->session->set_flashdata('msg_ok',$this->lang->line('msg_email_sent'));
                                redirect(base_url().'admin/contact/reply?id='.$id);
                        }
                }
                $this->contact_model->update(array('is_read'=>IS_READED),array('id'=>$id));
                $data['obj']=$this->contact_model->get_by_id($id);
                if($data['obj']!=null){
                        $this->render_backend_tp('backends/contact/reply',$data);
                }else{
                        redirect('notfound');
                }
        }else{
                redirect('notfound');
        }
}

function mark_as_read(){
        if(isset($_GET['id'])){
                $id=$this->input->get('id');
                if($id==null || !is_numeric($id)){
                        redirect('notfound');
                }
                $this->contact_model->update(array('is_read'=>IS_READED),array('id'=>$id));
                redirect(base_url().'admin/contact');
        }else{
                redirect('notfound');
        }
}
```



**Figure 15:** Sample Codes of Contact

- **Settings**: In this button we have the details about the admin as shown in figure 16.

settings.php - Notepad

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```
        function general(){
                if(isset($_POST['facebook_fanpage'])){
                        $facebook_id=$this->input->post('facebook_fanpage');
                        $copyright=$this->input->post('copyright');
                        $ga_code=$this->input->post('ga_code');
                        $twitter=$this->input->post('twitter');
                        $pinterest=$this->input->post('pinterest');
                        $google_plus=$this->input->post('google_plus');

                        $settings=getSettings(GENERAL_SETTING_FILE);
                        $settings['facebook_fanpage']        = $facebook_id;
                        $settings['ga_code']        = $ga_code;
                        $settings['copyright']=$copyright;
                        $settings['twitter']=$twitter;
                        $settings['pinterest']=$pinterest;
                        $settings['google_plus']=$google_plus;
                        setSettings($settings,GENERAL_SETTING_FILE);
                }
                $data['obj']=getSettings(GENERAL_SETTING_FILE);
                $this->render_backend_tp('backends/settings/general',$data);
        }

        function contact_info(){
                if(isset($_POST['email'])){
                        $email=$this->input->post('email');
                        $phone=$this->input->post('phone');
                        $skype=$this->input->post('skype');
                        $fax=$this->input->post('fax');
                        $address=$this->input->post('address');

                        $settings=getSettings(CONTACT_INFO_SETTING_FILE);
                        $settings['email']        = $email;
                        $settings['phone']        = $phone;
                        $settings['skype']        = $skype;
                        $settings['fax'] = $fax;
                        $settings['address']=$address;
                        setSettings($settings,CONTACT_INFO_SETTING_FILE);
                }
                $data['obj']=getSettings(CONTACT_INFO_SETTING_FILE);
                $this->render_backend_tp('backends/settings/contact_info',$data);
        }


        function default_location(){
                if(isset($_POST['lat'])){
                        $lat=$this->input->post('lat');
                        $lng=$this->input->post('lng');
                        $settings=getSettings(DEFAULT_LOCATION_FILE);
                        $settings['lat']        = $lat;
                        $settings['lng']        = $lng;
                        setSettings($settings,DEFAULT_LOCATION_FILE);
                }
                $data['obj']=getSettings(DEFAULT_LOCATION_FILE);
                $this->render_backend_tp('backends/settings/default_location',$data);
        }

        function reset_default_location(){
                resetDefaultLocation();
                redirect('admin/settings/default_location');
        }
}
?>
```

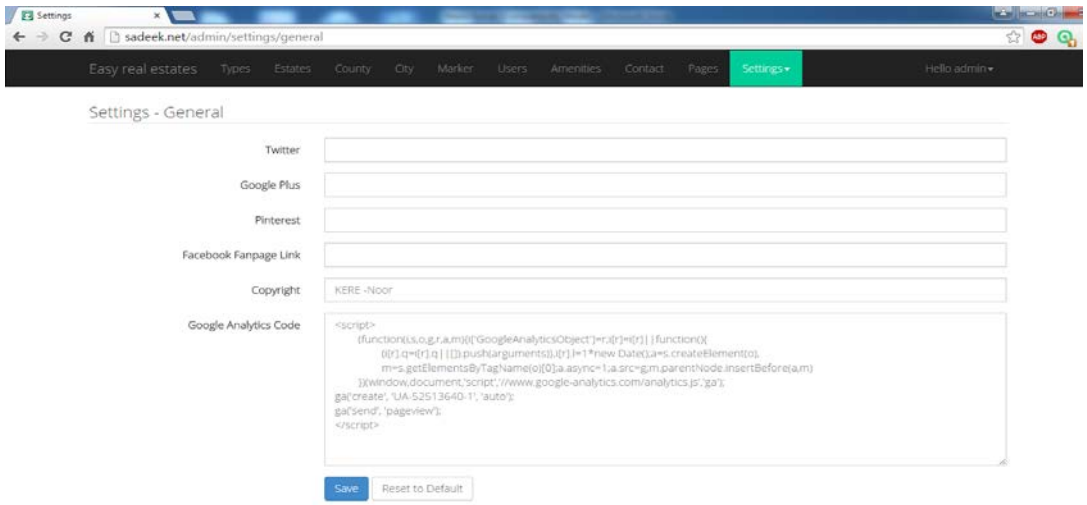


**Figure 16:** Sample Codes of Settings

- **GPS:** Coordinate system for my application as shown in figure 17.

```
public class GPSTrackerServices extends Service implements LocationListener {
	Context context;

	Location location;
	double lat;
	double lng;
	boolean isNetworkEnabled = false;
	boolean isGPSEnabled = false;
	boolean canGetLocation = false;

	private static final long MIN_DISTANCE_CHANGE_FOR_UPDATES = 10; // 10 meters

	// The minimum time between updates in milliseconds
	private static final long MIN_TIME_BW_UPDATES = 1000 * 60 * 1; // 1 minute

	LocationManager locationManager;

	public GPSTrackerServices(Context context) {
		// TODO Auto-generated constructor stub
		this.context = context;
		getLocation();
	}

	public Location getLocation() {
		try {
			locationManager = (LocationManager) context
					.getSystemService(LOCATION_SERVICE);
			isGPSEnabled = locationManager
					.isProviderEnabled(LocationManager.GPS_PROVIDER);
			isNetworkEnabled = locationManager
					.isProviderEnabled(LocationManager.NETWORK_PROVIDER);
			if (!isGPSEnabled && !isNetworkEnabled) {

			} else {
				this.canGetLocation = true;
				if (isNetworkEnabled) {
					locationManager.requestLocationUpdates(
							LocationManager.NETWORK_PROVIDER,
							MIN_TIME_BW_UPDATES,
							MIN_DISTANCE_CHANGE_FOR_UPDATES, this);
					if (locationManager != null) {
						location = locationManager
								.getLastKnownLocation(LocationManager.NETWORK_PROVIDER);
						if (location != null) {
```

**Figure 17 :** Sample Codes of GPS

- **The Application Connection with Website Code:** as shown in figure 18.

```
package com.bk.lrandom.realestate.business;

import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.io.UnsupportedEncodingException;

import org.apache.http.HttpEntity;
import org.apache.http.HttpResponse;
import org.apache.http.client.ClientProtocolException;
import org.apache.http.client.methods.HttpGet;
import org.apache.http.impl.client.DefaultHttpClient;
import org.json.JSONObject;

import com.bk.lrandom.realestate.confs.constants;

import android.os.AsyncTask;
import android.os.Bundle;
import android.os.Handler;
import android.os.Message;
import android.util.Log;

public class JSONFetchTask extends AsyncTask<Void, Void, String> {
        private String url;
        private Handler mHandler;
        static InputStream is = null;
        static JSONObject jObj = null;
        static String jsonString = "";
        public static final String KEY_RESPONSE = "KEY_RESPONSE";
        public String TAG = "JSONFetchTask";
        public String keyResponse;

        public JSONFetchTask(String url, Handler mHandler) {
                this.url = url;
                this.mHandler = mHandler;
                this.keyResponse = KEY_RESPONSE;
        }

        public JSONFetchTask(String url, Handler mHandler, String keyResponse) {
                this.url = url;
                this.mHandler = mHandler;
                this.keyResponse = keyResponse;
        }
```

```
package com.bk.lrandom.realestate.business;

import android.graphics.Bitmap;
import android.graphics.BitmapShader;
import android.graphics.Canvas;
import android.graphics.ColorFilter;
import android.graphics.Paint;
import android.graphics.PixelFormat;
import android.graphics.Rect;
import android.graphics.RectF;
import android.graphics.drawable.Drawable;
import android.graphics.Shader;

public class RoundedAvatarDrawable extends Drawable {
        private final Bitmap mBitmap;
        private final Paint mPaint;
        private final RectF mRectF;
        private final int mBitmapWidth;
        private final int mBitmapHeight;

        public RoundedAvatarDrawable(Bitmap bitmap) {
                mBitmap = bitmap;
                mRectF = new RectF();
                mPaint = new Paint();
                mPaint.setAntiAlias(true);
                mPaint.setDither(true);
                try {
                        final BitmapShader shader = new BitmapShader(bitmap,
                                        Shader.TileMode.CLAMP, Shader.TileMode.CLAMP);
                        mPaint.setShader(shader);
                } catch (Exception e) {
                        // TODO: handle exception

                }

                // NOTE: we assume bitmap is properly scaled to current density
                mBitmapWidth = mBitmap.getWidth();
                mBitmapHeight = mBitmap.getHeight();
        }

        @Override
        public void draw(Canvas canvas) {
                canvas.drawOval(mRectF, mPaint);
        }
```

**Figure 18 :** Sample Codes of Linking App with Website

- **Server Connect API (Application Programming Interface):** as shown in figure 19.

```
    <!-- SERVER CONNECT API -->
    <string name="domain_url">http://preview.androidgeeker.net/cms_realestate/</string>
    <string name="type_json_url">http://iqdr.iq/cms_realestate/api/type_api/</string>
    <string name="county_json_url">http://iqdr.iq/cms_realestate/api/county_api/</string>
    <string name="cities_json_url">http://iqdr.iq/cms_realestate/api/cities_api/</string>
    <string name="estate_json_url">http://iqdr.iq/cms_realestate/api/estate_api/</string>
    <string name="images_json_url">http://iqdr.iq/cms_realestate/api/images_api/</string>
    <string name="users_json_url">http://iqdr.iq/cms_realestate/api/users_api/</string>
    <string name="marker_json_url">http://iqdr.iq/cms_realestate/api/marker_api/</string>
    <string name="amenities_json_url">http://iqdr.iq/cms_realestate/api/amenities_api/</string>
    <string name="admob_publisher_id">ca-app-pub-1610982520322923/3609467496</string>
    <!-- END -->
 <string name="admob_test_device_ids">TEST_EMULATOR, 8B36E51A40D7E5D6E63DED5E5ED90909,8B36E51A40D7E5D6E63DED5E5ED90909,
D9BE878A175D3E055FD8B4CC018FDCE4,AD3D4716DC7ABE9C627413F44F200AA3,D405F82CAF60D1FE4E355782390B5717</string>
    <string name="copyright">2015</string>
    <string name="loading">Loading...</string>
    <string name="about_us_label">About
electronic Real Eastate in Kirkuk City
Cankaya university
Prepared by
Noor Abdul Salam Albayati
Supervised by
Prof.Dr.Taner AlTUNOK
Mathematics and Computer Science /
Information Technology Department
```

**Figure 19 :** Sample Codes of A.P.I

# CHAPTER 4
# RESULTS

## 4.1 The Real Estate In Kirkuk

Finding a real estate or the search for real estate in Kirkuk city in earlier also in the present time is as follows: It’s through real estate offices or through direct sales means that the person finds advertising for a property somewhere and contact with the property owner directly.

So we thought to built or created an easy and suitable electronic application Java Android language for the sale and purchase a property .The application can be downloaded on smart phones easily, so with a single click on the application at any time and any where you can search and find the property, this application gives you easy searching by typing the features you are looking for in real estate, the speed of response gives you bother going to the offices of the real estate and search for the required property, as well as the user can search at property by Google map by giving the coordinates, In addition as well as the user can communicate directly with the admen's of application or the brokers that registered in the application. In the next sections we will explain the application interface and how they works.

## 4.2 Management Of The Web Site Consist Of Administer And Agent

1. Administer: He is responsible for the management of the web page, the person in terms of data entry, modification, deletion and give powers to the brokers for the emergence of the ideal interface for the application and to facilitate the search for the desired property with a precision and speed.
2. Agents: there are person that authorized by the admin Where are given a user name and private password to each agent for the purpose of introducing their own data in terms of available real estate offers they have and promotion for their offerings and increase the competitiveness among the agents to get to the results that appear in the application so that the user follow the latest developments in the electronic real estate market in Kirkuk.

### 4.2.1 Data entry

1. First we enter the type of property as shown in Figure 20.


**Figure 20 :** Data Entry Procedure for type of property

2. Next step we add the county as shown in figure 21.


**Figure 21:** Data Entry Procedure for County

3. In the amenities button we add the feature for apartment as shown in figure 22.

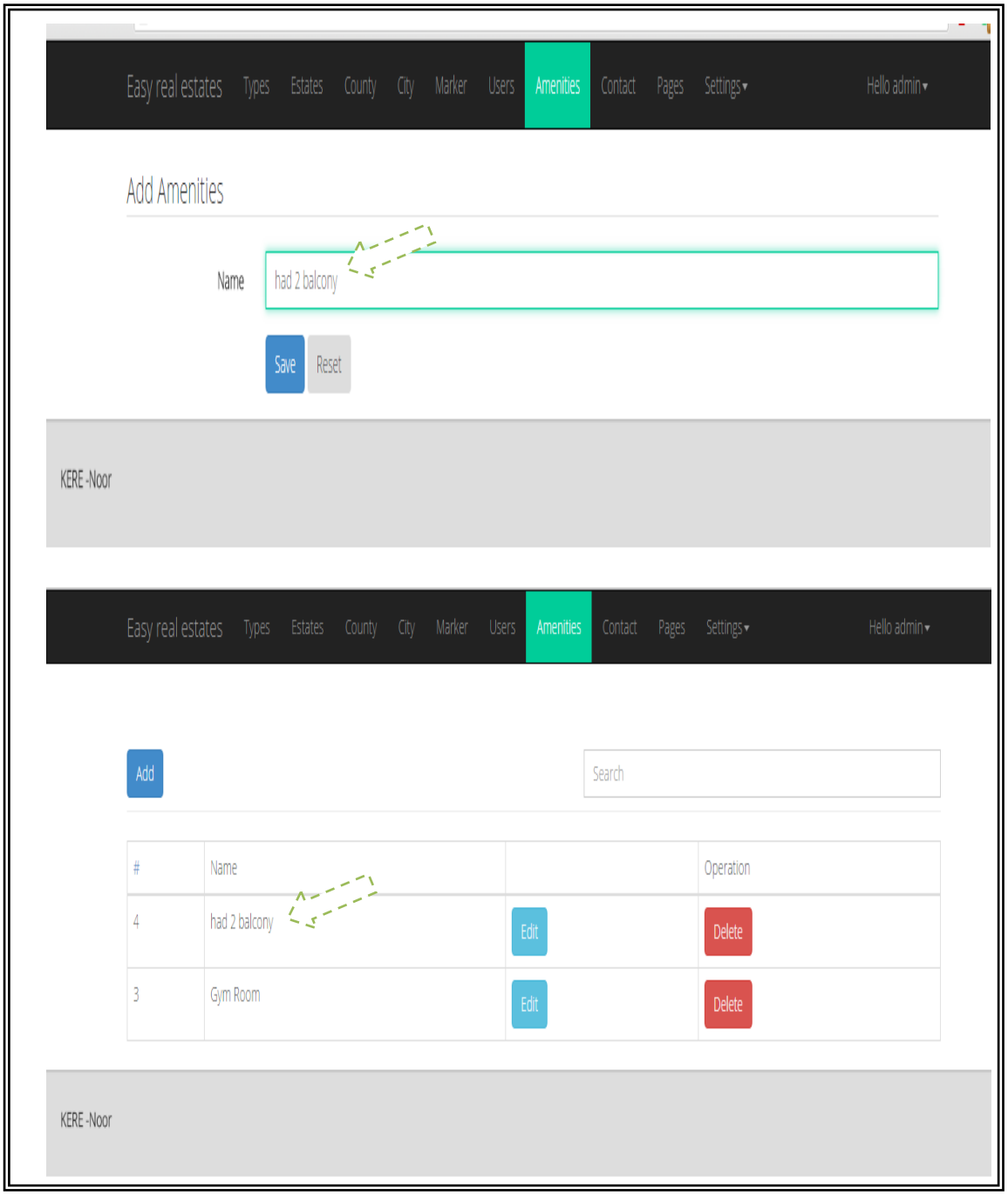


**Figure 22 :** Data Entry Procedure for Amenities

4. In Estate button we insert the details of property: first we need to chose the coordinate as shown in figure 23.

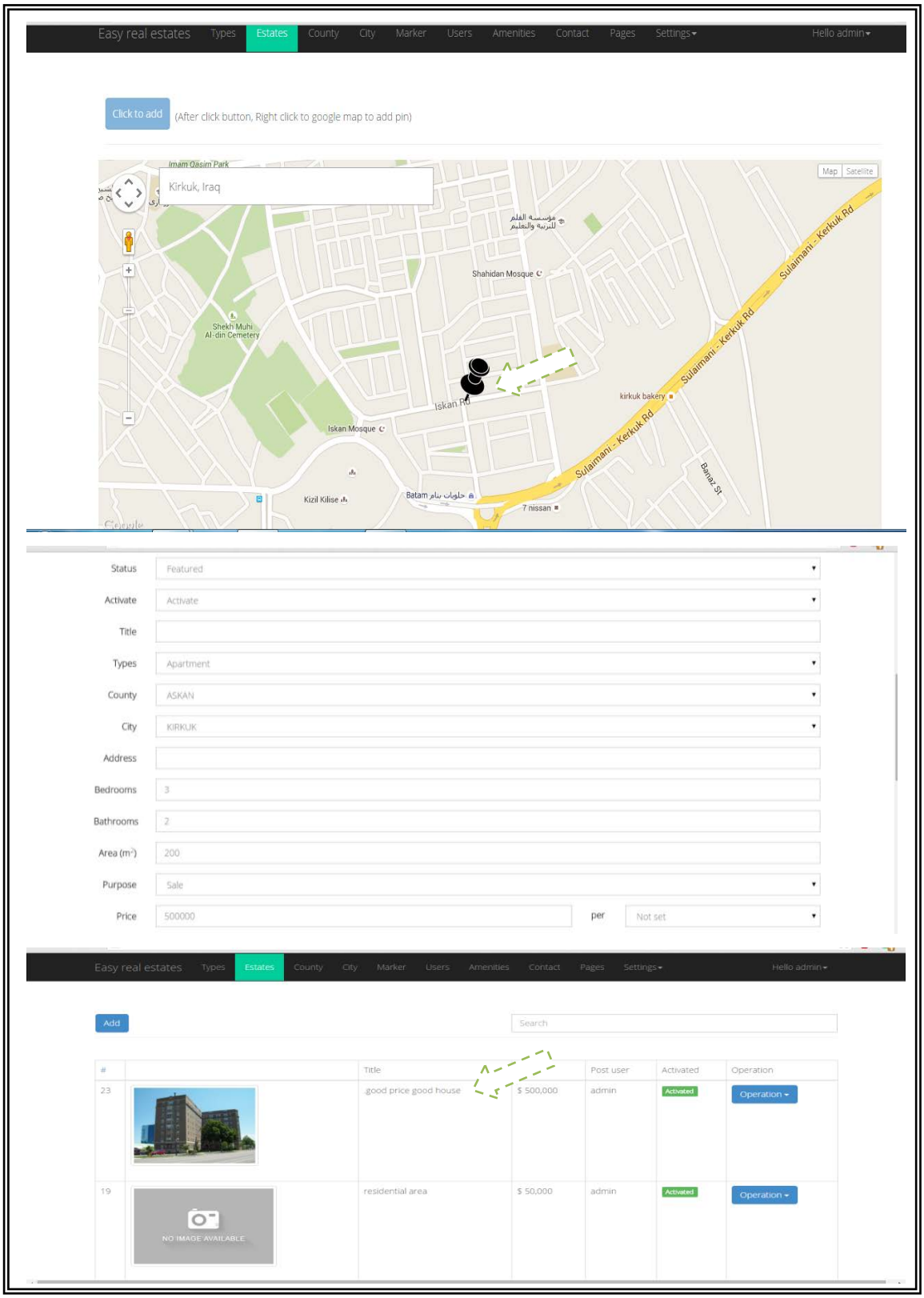


**Figure 23:** Determine the location of the Estates on the Map

### 4.3 Use Case Diagram Of My Application (core components)

**Actors:** A role that a user plays with respect to the system, including human users and other systems. e.g., inanimate physical objects (e.g. robot); an external system that needs some information from the current system.

**Use case:** A set of scenarios that describing an interaction between a user and a system, including alternatives. As shown in figure 24.

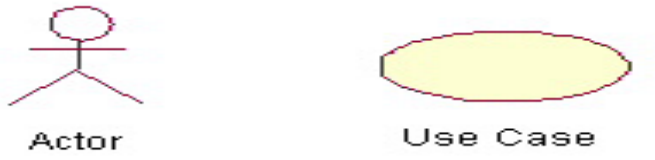


**Figure 24 :** Core Components of the Uses Case Diagram

**System boundary**: Rectangle diagram representing the boundary between the actors and the system.

#### 4.3.1 Use Case Diagram (core relationship)

**Association:** communication between an actor and a use case; Represented by a solid line. ———————

**Generalization:** Relationship between one general use case and a special use case (used for defining special alternatives)

Represented by a line with a triangular arrow head toward the parent use case.

——————►

**Include**: A dotted line labeled <<include>> beginning at base use case and ending with an arrows pointing to the include use case. They include relationship occurs when a chunk of behavior is similar across more than one use case. Use "include" instead of copying the description of that behavior. ·····►

**Extend**: A dotted line labeled <<extend>> with an arrow toward the base case. The extending use case may add behavior to the base use case. The base class declares "extension points". ——————►

Text label code as shown in figure 25, and uses case diagram for my application Kirkuk electronic real estates (K.E.R.E ) as shown in figure 26.

```
<string name="county_label">County</string>
<string name="type_label">Types</string>
<string name="city_label">City</string>
<string name="price_label">Price</string>
<string name="min_price">Min Price</string>
<string name="max_price">Max Price</string>
<string name="marker_label">Marker</string>
<string name="amenities_label">Amenities</string>
<string name="title_label">Title</string>
<string name="content_label">Content</string>
<string name="upload_label">Submit</string>
<string name="what_you_want">Select images</string>
<string name="vl_required">Please fill all required information!</string>
<string name="type_message">Please type your message</string>
<string name="alert">Alert</string>
<string name="purpose_label">Purpose</string>
<string name="confirm_take_photo">Are you want select this photo ?</string>
<string name="sales_label">Sales</string>
<string name="rent_label">Rent</string>
<string name="sales_and_rent_label">Sales and Rent</string>
<string name="all_label">All</string>
<string name="tap_to_change_avt">Tap to change your avatar</string>
<string name="follow_label">Follow</string>
<string name="bookmarked_product">Mark Prodcuts</string>
<string name="logout">Logout</string>
<string name="close_label">Close</string>
<string name="filter_label">Filter</string>
<string name="home_label">Home</string>
<string name="profile_label">Profile</string>
<string name="update_profile_label">Change your profile</string>
<string name="choose_your_user_name">Choose your username</string>
<string name="skip_label">Skip</string>
<string name="bedroom">Bedroom</string>
<string name="bathroom">Bathroom</string>
<string name="area">Area(m2)</string>
<string name="location">Location</string>
<string name="get_location_guide">Location(Please tap on map to get location)</string>
<string name="valid_location">Please get location</string>
<string name="ask_to_turn_gps">GPS do not available, do you want settings gps ?</string>
<string name="gps_setting">GPS settings</string>
<!-- END -->
```

**Figure 25 :** Sample Codes of the Labels for K.E.R.E App

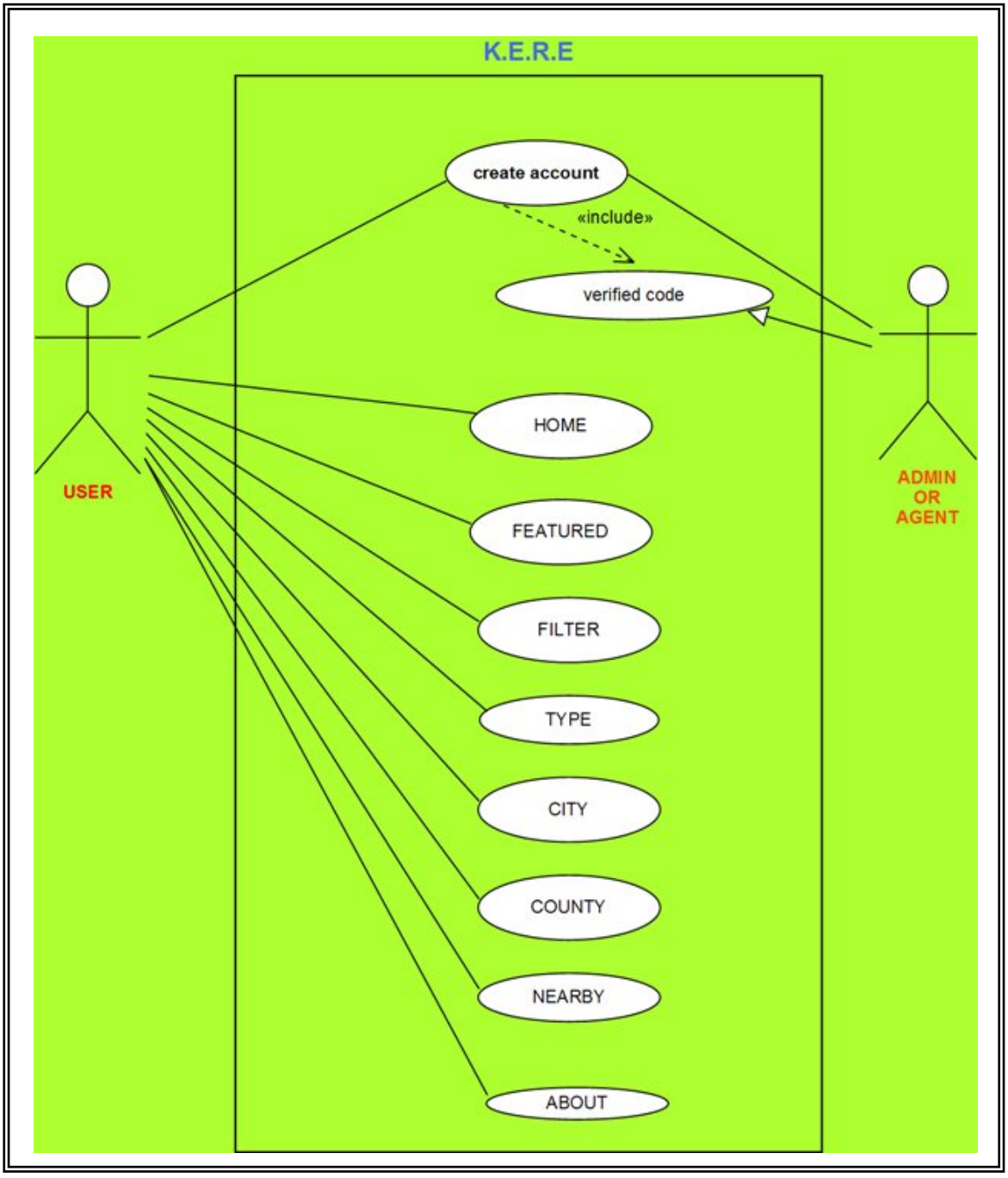


**Figure 26 :** Uses Case Diagram For K.E.R.E App

### 4.3.2 Uses case diagram of the home

Here the user can look at all the inputs in the application as shown in figure 27.

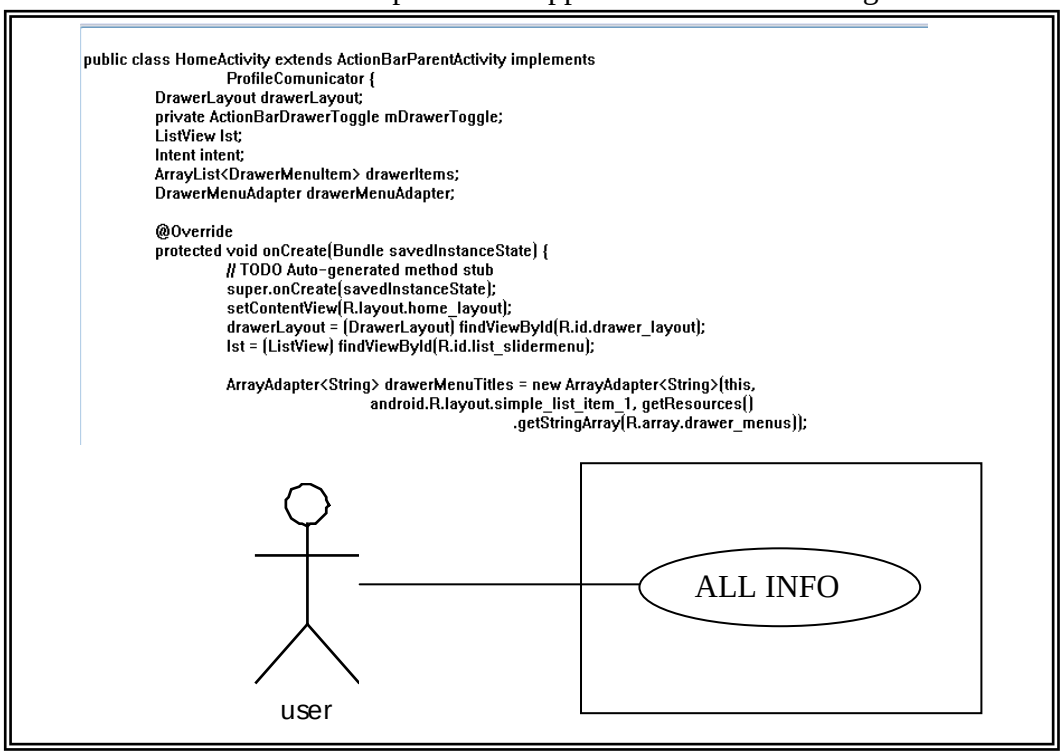


**Figure 27 :** Sample Codes & Uses Case Diagram of the Home

### 4.3.3 Uses case diagram of the featured

Show all distinctive advertising as shown in figure 28.

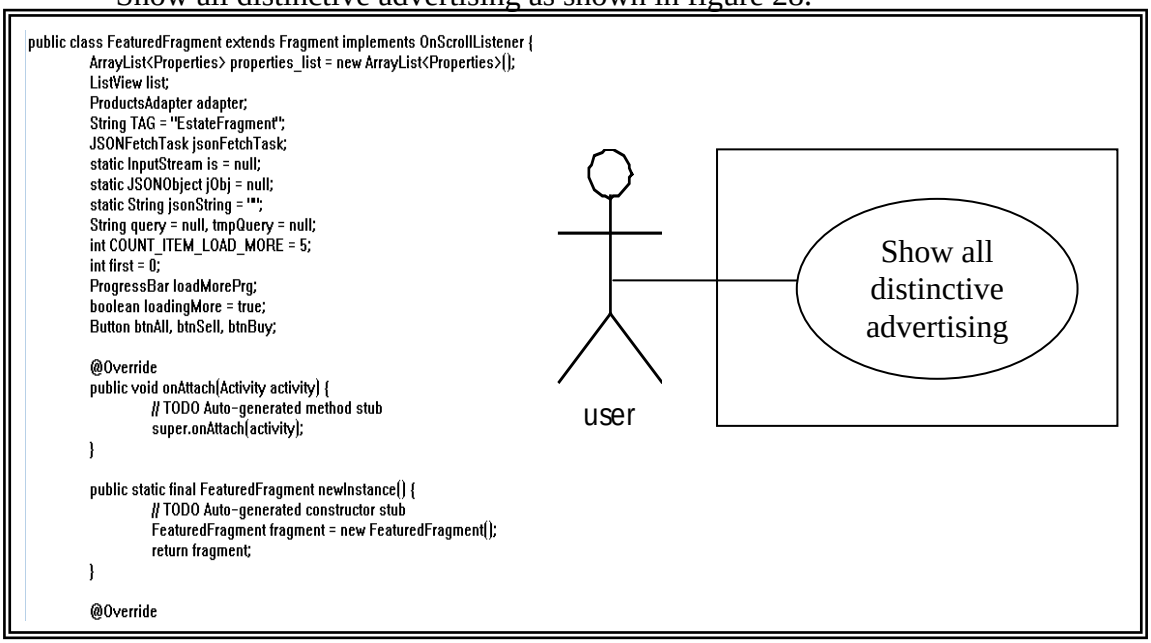


**Figure 28 :** Sample Codes & Uses Case Diagram of the Featured

### 4.3.4 Uses case diagram of the filter

Through this button you can search for real estate required by special as the price of inputs, number of bedroom and area or condition of the property was to be for sale or for rent and through the property and also the city and the county also the type land uses. As shown in figure 29, and figure 30.

```
import android.util.Log;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Spinner;

import com.bk.lrandom.realestate.PropertiesActivity;
import com.bk.lrandom.realestate.R;
import com.bk.lrandom.realestate.business.JSONFetchTask;
import com.bk.lrandom.realestate.confs.constants;
import com.bk.lrandom.realestate.models.County;
import com.bk.lrandom.realestate.models.Types;

@SuppressLint("NewApi")
public class FilterFragment extends Fragment {
        Spinner typeSpinner, countySpinner, citiesSpinner, purposeSpinner;
        EditText title, minPrice, maxPrice, area, bedroom;
        static final String KEY_type_RESPONSE = "KEY_type_RESPONSE";
        static final String KEY_COUNTY_RESPONSE = "KEY_COUNTY_RESPONSE";
        static final String KEY_CITIES_RESPONSE = "KEY_CITIES_RESPONSE";
        String[] type_name, purpose_name, city_name, county_name;
        int[] type_id, county_id, city_id;
        String[] purpose_id;
        String TAG = "FilterFragment";
        int type_selected = 0;
        int county_selected = 0;
        int aim_selected = 0;
        int city_selected = 0;
        int purpose_selected = 0;
        Handler handler_type = new Handler() {
                @SuppressLint("NewApi")
```

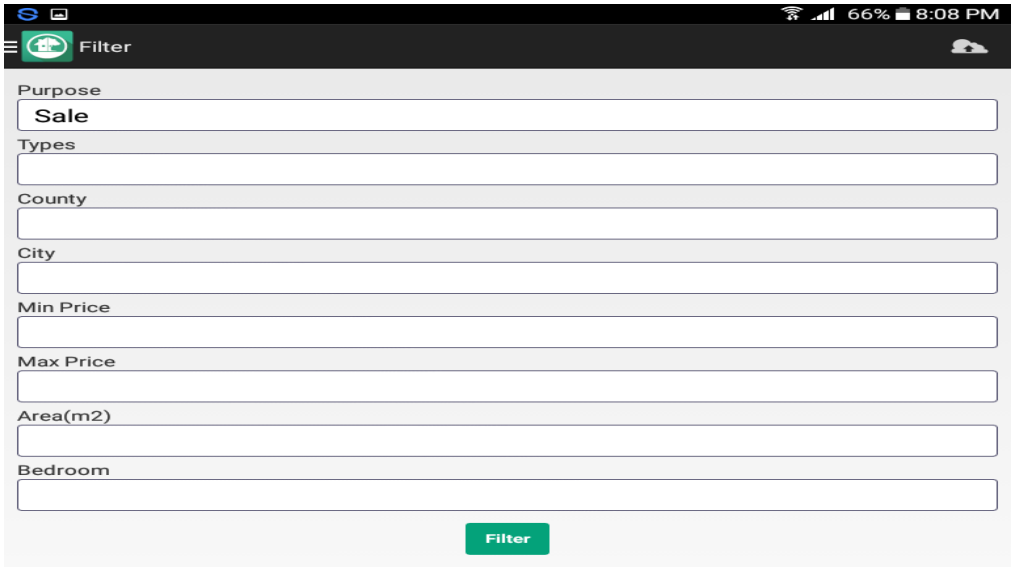


**Figure 29 :** Sample Codes of the Filter

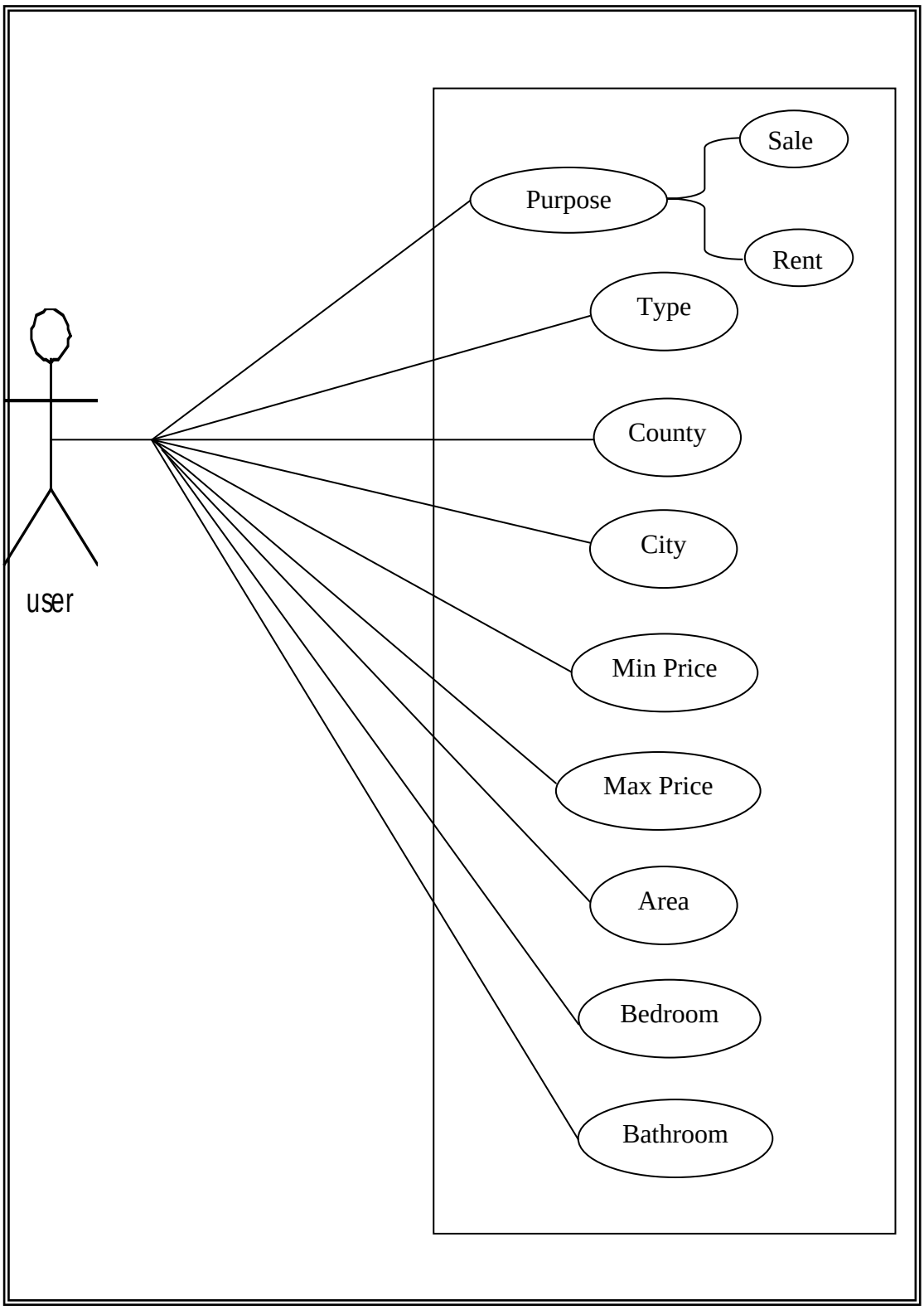


**Figure 30 :** Uses Case Diagram of the Filter

### 4.3.5 Uses case diagram of the type

From this option we can look by property type, whether a house or apartment or a piece of land or a shop etc. As shown in figure 31.

```
package com.bk.lrandom.realestate.models;

import android.os.Parcel;
import android.os.Parcelable;

public class Types implements Parcelable {
	public static final String TAG_ID = "id";
	public static final String TAG_NAME = "name";
	int id;
	String name;

	public Types() {
		// TODO Auto-generated constructor stub
	}

	public Types(Parcel in) {
		id = in.readInt();
		name = in.readString();
	}

	public int getId() {
		return id;
	}

	public void setId(int id) {
		this.id = id;
	}

	public String getName() {
		return name;
	}

	public void setName(String name) {
		this.name = name;
	}

	@Override
	public int describeContents() {
		// TODO Auto-generated method stub
		return 0;
	}
```

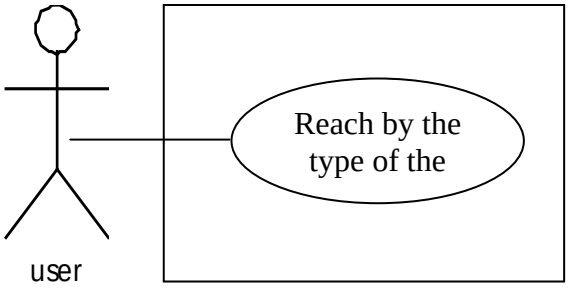


**Figure 31 :** Sample Codes & Uses Case Diagram of the Type

### 4.3.6 Uses case diagram of the county

You can found the real estate's through the county type, as shown in figure 32.

```
package com.bk.lrandom.realestate.models;

import android.os.Parcel;
import android.os.Parcelable;

public class County implements Parcelable {
        public static final String TAG_ID = "id";
        public static final String TAG_NAME = "name"
        int id;
        String name;

        public County() {
                // TODO Auto-generated constructo
        }

        public County(Parcel in) {
                id = in.readInt();
                name = in.readString();
        }

        public int getId() {
                return id;
        }

        public void setId(int id) {
                this.id = id;
        }

        public String getName() {
                return name;
        }

        public void setName(String name) {
                this.name = name;
        }

        @Override
        public int describeContents() {
                // TODO Auto-generated method stu
                return 0;
        }
```

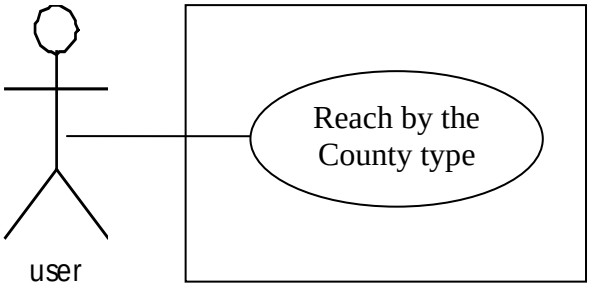


**Figure 32 :** Sample Codes & Uses Case Diagram of the County

### 4.3.7 Uses case diagram of the near by

Depended on the coordinate system and related with Google map that are saved in your host you can select this button to show the places near you and you control the distance dimension through buffering km2, as shown in figure 33.

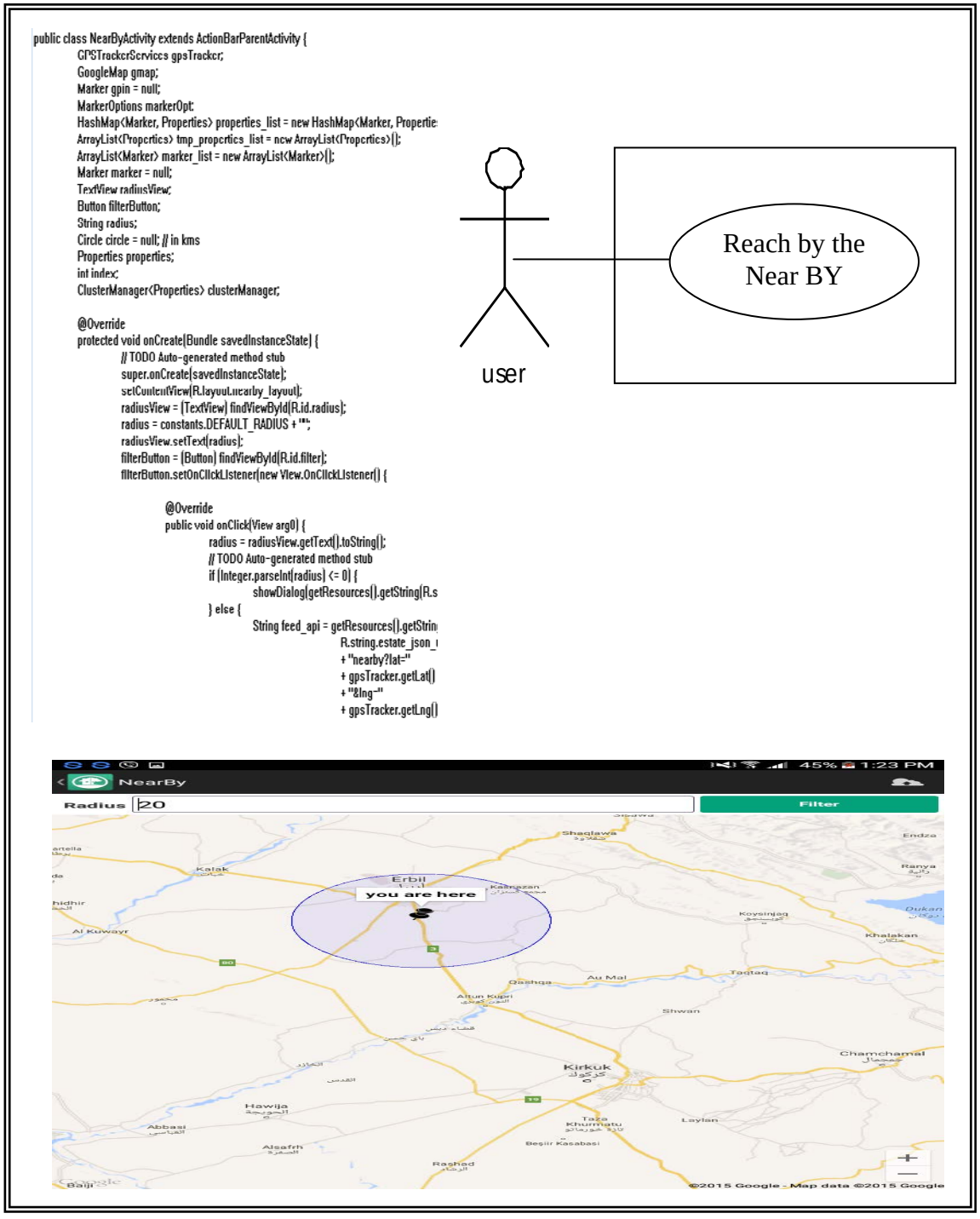


**Figure 33 :** Sample Codes & Uses Case Diagram of the NearBy

### 4.3.8 Uses case diagram of the about us

This window contains information about the program and the copy rights, as shown in figure 34.

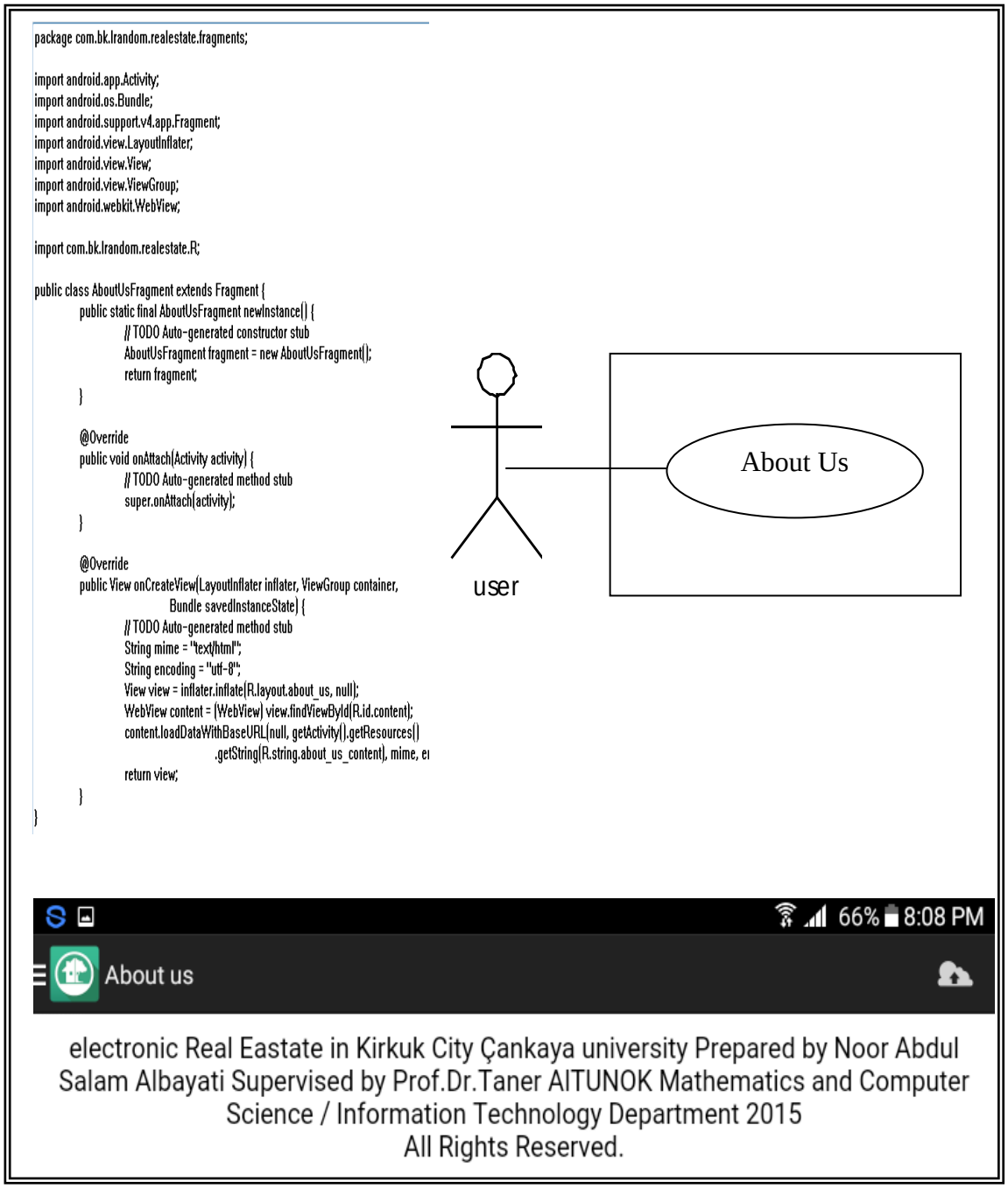


**Figure 34 :** Sample Codes & Uses Case Diagram of the About Us

# CHAPTER 5
# CONCLUSION

## 5.1 Conclusion

Real estate is an information business, and consequently, is deeply impacted by information technology. The escalating rate of change can be seen when studying firms in this area as well as the consumers it serves. The information revolution that is inescapably penetrating all facets of industry is propelling the real estate industry as well into territories unknown. The technology enabling the collecting and conveying of information expands in speed, efficiency and boundary-spanning daily. This, in turn, may throw entire industries into turmoil, some become redundant while completely new ones emerge. New approaches to work, knowledge, information, IT and organization structure are essential prerequisites to survive in this new environment. In order to purchase shares in the combined company we need to make assumptions about the broader economic market and individual companies. We are assuming a 4% industry growth rate for real estate over the next 6 years; in addition we are assuming online mortgage lending grows at 14%. A reduction in forecasted growth, that is not offset by above estimate market share will result in a lower valuation. The second assumption hinges on the disruptive entrance of K.E.R.E and into the real estate market. We assume they exploited an outdated industry gaining market share through an opportunity; however, as the market adjusts towards an mobile App. ecosystem, name recognition will again play a role in establishing barriers to entry preventing immediate erosion of their market. Despite the recent sell off of insider shares we assume the management team does not see a fundamental problem, but is realizing gains on their stock compensation and taking advantage of what we agree was an overpriced valuation. In addition, we need to have faith in the ability of the management teams to successfully see the acquisition through and merge the two companies. Based on their experience in the travel industry consolidation, we are confident in management's ability to repeat success in real estate. We anticipate strong revenue growth and a reduction in operating expense

levels through reduced competition. With a bullish outlook on real estate and significant upside in the real estate market for K.E.R.E, we are confident in the management team's market position and would recommend the following position. With K.E.R.E trading 10% below intrinsic level as of close on 10/30 and considering they are poised to capture increased revenue per share from the K.E.R.E acquisition, we would recommend a strong buy on K.E.R.E., losing management and board control we see minimal upside, especially considering how limiting the acquisition is to operations during the waiting period.

Divided city of Kirkuk to the 46 urban district. The current real estate system in Kirkuk, traditionally a system where the citizen in this city needs a long time and effort to finding the perfect property. Build a large and optimize database especially system of electronic real estate by using MySQL languages. Dependence on the vivid examples to building the database, such as data obtained by some brokers and by some people who works at the director of real estate registration in the city.
Build a website for the implementation of this data via PhP version 6.0 languages.
Reduce the time and effort to the citizen in the process of searching for real estate by building a Mobile application called ( K.E.R.E) by using the Java Android language and linking with PhP language to show the results of the input by the website admin and agent. Easy access to the desired property through a perfect process we set in the Quick Search and allocated through option and other options in terms of the type of property, whether residential or a piece of land or a building or factory or shop ... etc.

## 5.2 Recommendations

Globalization of the real estate industry is now a fact of economic life. Cross-border investments are increasingly common, both in physical assets and in portfolio investments; off shoring part of the supply chain is being increasingly resorted to; and variables from the field of international economics, such as openness, international capital flows, exchange rates and so-forth have an increasing impact on real estate markets.

Activating the e-government in Iraq in all state institutions in the field of electronic, in particular real estate and labor obsolete e-payment. Support the Iraqi government in general and the local government of Kirkuk to our thesis because it is in the interest of the citizen and facilitate the process of research and gain time and keep up with the era of development in the ICT field. Generalization the system (K.E.R.E) on all of Iraq's provinces as it works to increase technological development and reduce the time and speed of processing. Organizing workshops and training courses for high-level support and development of young people in modern programming languages, especially languages used in our thesis. Unify efforts and guidance of the Ministry of Justice on the directorates of real estate registration in all provinces to build the perfect, big and uniform to work the electronic real estate database system. Nevertheless, the literature shows that such problems are not impermeable barriers; however, long terms plans are needed to be scheduled starting by building huge database and Uniform. As we see in the findings (chapter 4) there are a perfect results in terms of the application of this application mobile on the city of Kirkuk in the data entered and that are available to the brokers real estate for this reason we propose projects promising to Kirkuk focus on gathering more information from both the field agencies and government and dodge any attempt can cause a variety of data. The government should take serious steps in building a unified data base of Iraq in cooperation between ministries such as the Ministry of Education, the Ministry of Planning and the Ministry of Transport and Communications. To activate the ( K.E.R.E ) of all of Iraq's provinces.

## 5.3 Future Works

The technology enabling the understanding and conveying of information expands in speed, efficiency and boundary spanning
daily. This, in turn, may throw entire industries into turmoil, some become redundant while completely new ones emerge. Markets tend to reward those individuals and firms familiar with the new information technology; they penalize others.
New approaches to work, knowledge, information, IT and organization structure are essential prerequisites to survive in this new environment .

Generalization the system (K.E.R.E) on all of Iraq's provinces as it works to increase technological development and reduce the time and speed of processing.
Install (K.E.R.E) application by directly from (Play store) through the purchase of prepaid card to enable the user to download for free on his cell phone. Development (K.E.R.E) application and also runs on the (IOS) system like Ipad and Iphone.
Dealing electronic payment in terms of application development and the provision of electronic payment process and canceling a system of traditional methods Cash.

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## APPENDICES A

## CURRICULUM VITAE

### PERSONAL INFORMATION

**Surname, Name:** Noor Abdulsalam ALBAYATI

**Date and Place of Birth:** 01 January 1991, Salahaldin , Iraq

**Marital Status:** Married

**Constant Address :** keçiören / Subayevleri / Fethyibey .Sok 26/7. Turkey / Ankara

**Phone:** +90 538 576 98 64

**Email:** noor.albayati91@yahoo.com

### EDUCATION

| Degree | Institution | Year of Graduation |
|---|---|---|
| M.Sc. | Çankaya Univ., I.T | 2015 |
| B.Sc. | IQ. Kirkuk Univ., M.C.S | 2012 |
| High School | IQ. Kirkuk High School | 2008 |

### WORK EXPERIENCE

| Year | Place | Enrollment |
|---|---|---|
| 2012- 2013 | Kirkuk Technical Institute | Trainer |

### FOREIN LANGUAGES

Advanced English, Beginner Turkish
Arabic Native.

### HOBBIES

Reading, Travel & Adventure.