Design Real Estate Management System by using Java Language

تصميم ريال نظام إدارة العقارات باستخدام لغة جافا

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Abstract

The research aim to design a computerize system to manage the real estate by using Java language to specialized companies in sale , rent the properties including creating effective website serve the work of these companies , where as we can listed all the properties and its details such as the image of property , the name of the owner and his telephone and E-mail , sale and rent price and the property qualification …etc , empower the person to know all information about the properties simply before the sale , rent decision . Finally the research presented many conclusions and recommendations due to it.

Introduction:

"Real Estate Management System" is our latest product offering that is a turnkey solution for Real Estate companies. It includes everything needed to create an interactive, effective, and revenue generating web site for the Real Estate industry.

We can list an unlisted number of properties that you have available instantly though a copy and paste web-based administration panel. Each property listed has its own detail page filled with key information, including images of the property. We can offer out site's visitors interactive tours of your listed properties. Images are easily uploaded to the web site using a simple form! Add as many or as few pictures as you like for any given property. Let our visitor's save their property or rental search criteria and notify them automatically when a site matching that criterion is entered into the system. The process is completed automated and users have the ability to cancel their

Listings subscription instantly at any time. Keep interested visitors informed by sending an email with notifications right to their email inbox. Names are collected through the web site using an opt-in form. You can send updates on open houses, or build customer trust by sending out a buying tips newsletter, as well as featuring special new properties. Easily maintain your agent's information using a web based administration system. This gives your agents the recognition they deserve while providing a directory for your site's visitors of important phone numbers and email addresses.

SECTION ONE

Research Methodology

First: Research Problem

To the nearest time, the process of sale buying, rent the properties was achieved by direct communication with owners of the properties or with properties agents, to know about the properties and its details , such as; qualifications, owners, prices…etc, before sale , rent process, but today and after time development of information and communication technology which simplified the processes to the persons by create web sites to achieve all processes such as real estate management contains all details about the properties

Second: Research Objectives

"**REAL ESTATE MANAGEMENT SYSTEM**" is the process of managing and controlling the activities of property dealing. It includes maintaining and managing the records of properties available for Sell, Rent & Lease and their owners. It also maintains the list of Buyers. It has been designed to make available information as and when required. Also, it is highly beneficial to both customer as well as persons involved in the business of property dealing. Customers can get information about properties on the basis of:

1. **Property Type** (e.g., Residential, Commercial, Industrial shed, Agricultural Farm House and Land)
2. **Category** (e.g. for sale or rent)
3. **Property Address**.

4. **Property Description.**
5. **Country**.
6. **State**.
7. **Price Range**.
8. **Name**.
9. **Easily & quickly fetch the records of the properties available for Sell, Rent & Lease.**

Third: Tools Used

1. SOFTWARE ENVIRONMENT

The following paragraph defines the SOFTWARE and HARDWARE of the proposed system development.

Operating System	:	**Windows**
2000 (Professional)		
Front-End Tool	:	**Java, Jsp, Html**
Server	:	**Weblogic 8.1**
Browser	:	**Internet Explorer**
Scripting language	:	**JavaScript**
Data Access Technology	:	**JDBC, ODBC**
Reports	:	**Data Reports**
Back-End	:	**SQL SERVER 2000**

2. HARDWARE ENVIRONMENT

Processor	:	**Pentium-IV 3.0 GHz**
RAM	:	**512 MB**
HDD	:	**40 GB**
FDD	:	**1.44 MB**
CD-ROM	:	**52X**
Printer	:	**DeskJet 670 C**

14 inches Color Monitor

104 Keys Keyboards

SECTION TWO

Theoretical Part

First: Real Estate

Real estate development, or property development, is a multifaceted business, encompassing activities that range from the renovation and re-lease of existing buildings to the purchase of raw land and the sale of improved land or parcels to others. Developers are the coordinators of the activities, converting ideas on paper into real property. Real estate development is different from construction, although many developers also construct. Developer Louis Lesser drew the distinction in a 1963 New York Times article, "Developing is the key word. We don't build ourselves', Mr. Lesser stresses. We buy the land, finance the deal, and then we have the best builders build under bond at a fixed cost.

Developers buy land, finance real estate deals, build or have builders build projects, create, imagine, control and orchestrate the process of development from the beginning to end. Developers usually take the greatest risk in the creation or renovation of real estate—and receive the greatest rewards. Typically, developers purchase a tract of land, determine the marketing of the property, develop the building program and design, obtain the necessary public approval and financing, build the structure, and lease, manage, and ultimately sell it. Developers work with many different counterparts along each step of this process, including architects, city planners, engineers, surveyors, inspectors, contractors, leasing agents and more. [5]

Second: JAVA Language

Java technology is a portfolio of products that are based on the power of networks and the idea that the same software should run on many different kinds of systems and devices. Java technology readily harnesses the power of the network because it is both a programming language and a selection of specialized platforms. As such, it standardizes the development and deployment of the kind of secure,

portable, reliable, and scalable applications required by the networked economy. Because the Internet and World Wide Web play a major role in new business development, consistent and widely supported standards are critical to growth and success. [1]

The Java programming language lets US write powerful, enterprise-worthy programs that run in the browser, from the desktop, on a server, or on a consumer device. Java programs are run on -- interpreted by -- another program called the **Java Virtual Machine (JVM)**. Rather than running directly on the native operating system, the program is interpreted by the Java VM for the native operating system. This means that any computer system with the Java VM installed can run a Java program regardless of the computer system on which the application was originally developed. [2]

JAVA SERVER PAGES (JSP)

Java Server Pages is a technology for developing web pages that include dynamic content. Unlike a plain HTML page, which contains static content that always remains the same, a jsp page can change its content based on any number of variables items, including the identity of the user, the user's browser type, information provide by the user, and selection made by the user.

A jsp page contains standard markup language elements, such as html tags, just like a regular web page. However, a jsp page also contains special jsp elements that allow the server to insert dynamic content in the page. Jsp elements can widely used for variety of purposes, such as retrieving information from a database or registering user preferences. When a user ask for a jsp page, the server executes the jsp elements merges the results with the static parts of the page, and sends the dynamically composed page back to the browser. [4]

Jsp defines a number of standard elements useful for any web application, such as accessing Java Beans components, passing control between pages, and sharing information between requests, pages, and users. Programmers can also extend the jsp syntax by implementing application-specific elements that perform tasks such as accessing databases and Enterprise Java Beans, sending email, and generating HTML to present application specific data

✓ **Some highlights**

- Portability across platform and servers
- Robust exception management and memory management.
- Access to the wide range of Java APIs (JDBC, JavaMail, etc.)
- Portable, reusable logic components
- High performance for multiple concurrent requests
- Easy deployment and maintenance

Features of Java Server Pages

- **Rapid Web Development, Deployment, and Maintenance**

Java Server Pages and Java Servlet technologies simplify and speed the development process for developers and page authors alike. Once developed, JSP pages are easy to maintain because the application logic is separated from the page design and content. [3]

SECTION THREE

Research Analysis and Design

1. System Analysis

A. Analysis Concepts

Analysis is a detailed study of the various operations performed by a system and their relation within and outside the system. A key question is what must be done to solve the problem. One aspect of the analysis defining the boundaries of the system and determining whether a candidate system or not should consider other related system. During analysis data are collected on the available files decision points and transaction handled by the parent system. Some logical system models and tools are used in the analysis. Data flow diagrams, interviews, onsite observation and questionnaires are examples, the interview is commonly used in analysis. It requires special skill and sensitivity to the subject being interview bias in data collection and interpretation can be problem. Training experience and

common sense are required for Collections of the information are needed to do analysis. Once analysis is completed, the analyst has firm understanding of what is to be done. The next step is to decide how the problem might be solved.

Thus in system design, we move from the logical to the physical aspects of the life cycle.

B. Feasibility Analysis

At the end of the information gathering phase, we have a reasonable idea about the data available currently and the deficiencies of the current system. We also reach a consensus on requirements and priorities among these requirements. Using these data, it is possible to define broad goals for the project and detailed sub goals. It is necessary at this stage to quantify the goals and sub goals. Once these goals are quantified, the next step is to find out whether these goals can be met, and if yes, how they will be met and at what cost. Feasibility analysis is mainly concerned with these questions.

2. System Design

A. DFD SYMBOLS

In the DFD, there are four symbols.

1. A square defines a source (originator) or destination of system data.
2. An arrow identifies data flow- data in motion. It is a pipeline through which information flows.
3. A circle or a “bubble” (some people use an oval bubble) represents a process that transforms incoming data flows(s) into outgoing data flow(s).
4. An open rectangle is a data store-data at rest, or a temporary repository of data.

Meaning	Comments
= Source or destination Transaction	May be one customer or a number of customer with (orders)
= Data flow	May be physically contained in a Purchase order, invoice, phone call, Letter, etc.
= Process that transforms Data flow	May be a clerk computing discounts or a cataloged procedure or a combination of manual and electronic activities
= Data store	Can be a card file, a filing cabinet, a Data base on disk, etc.

(DATA FLOW DIAGRAMS – BASIC SYMBOLS)

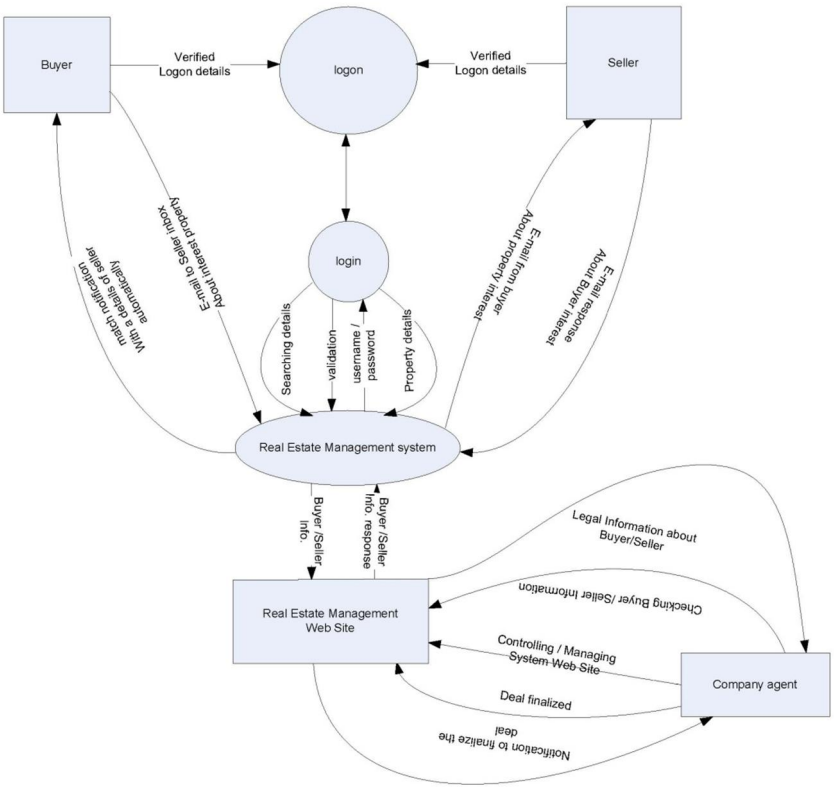


Figure (1)
Data Flow Diagram for the System

B. Modules and Description

Module 1: (Password Module)

In this module, Member enters a password and the software checks its validity. If the password is valid then he is allowed to enter, otherwise "Invalid User/Password" message is displayed. Different data access rights are assigned to different users. A new member can also be registered in this module.

Module 2: (New User Registration Module)

In this module, new members can register themselves with proper information to the company to get the facilities provided by the company.

Module 3: (**Posting of Properties**)

Creating new Entities (Country, State, Property Details)

In this module, a new property can be posted by anyone who is interested in selling or renting his/her property, with proper details.

Module 4: (Search): In this module, properly can be searched by id or reagon as per the convenient of the end user.

Module 5: (Validation of Data Entered by the User & Error Handling)

In this module, the validity of data entered by the user during the various business processes is checked through various validation checks. For example, there should not be any characters entered in the numeric fields, likewise if there is any error occurs than it should handle that particular error and give the required messages.

Module 6: (Reports)

Seller Report, Landlord Report, Deal Report on the basis of Property Type, Property Subtype, Region Wise, City Wise, State Wise, Country Wise, Price Range, Rooms range etc.

C. Entity Relationship Diagram

The Entity Relationship Diagrams (ERD) is the graphical notation of relationship between data object and attributes. The ERD was originally proposed by Peter Chen for the design of relational database systems and has been extended by others. Sets of primary components are identified for the ERD: data objects, attributes, relationship, and various type indicators. The primary purpose of the ERD is to represent data objects and their relationship. ER-Diagrams

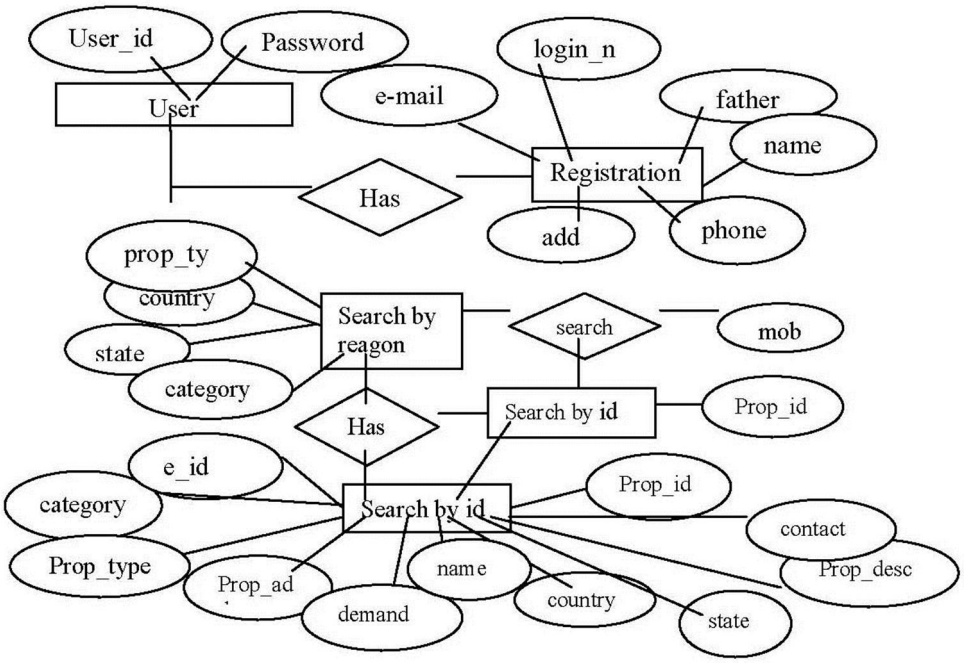


Figure (2)
Entity-Relation Diagram for the system

D. DATA DICTIONARY

Introduction to data dictionary: Data dictionaries are an integral component of structured analysis, since data flow diagrams by themselves do not fully describe the subject of the investigation .

The data flow diagrams provide the additional details about the project/system.

Data Dictionary (Definition): A data dictionary is a catalog- a repository- of the elements in a system. These elements center on the data and the way they are structured to meet user requirements and organization needs. A data dictionary consists of a list of all the elements composing the data flowing through a system. The major elements are data flows, data stores, and processes. The data dictionary stores details and descriptions of these elements.

(I) List Of Tables:

Table Name: user_detail					
Table Description: User name/Password					
Key Type	Field Name	Field Description	Data Type	Size	Constraint
Primary	login_name	Login name	Varchar	25	Not Null
	Password	Validation password	Varchar	25	Not Null
	confirm_pass	Confirm passowrd	Varchar	25	Not null
	Name	Name of the user	Varchar	25	Not null
	Father	Father's name of the user	varchar	25	Not null
	Add	Address of the user	varchar	50	Not null
	Ph	Phone no. of the user	number	10	Not null
	Mob	Mobile no of the user	number	10	
	E_mail	E-mail id of the user			

Table Name: prop_detail					
Table Description: Property category					
Key Type	Field Name	Field Description	Data Type	Size	Constraint
Primary	prop_id	Property Code	Var char	10	Not Null
	Category	Categroy Name	Varchar	25	Not Null
	Property_type	Type of property	Varchar	25	Not Null
	Prop_add	Address of the property	varchar	50	Not null
	Prop_desc	Description about the property	Varchar	50	Not null
	Name	Name of the owner	Varchar	25	Not null
	Country	Property located in the country	Varchar	25	Not null
	State	State of te country	Varchar	25	Not null
	E_id	e-mail id of the owner	Varachar	25	
	Contact	Contact no of the owner	Number	10	Not null
	Demand	Offered price of the property	Number		Not null

3. System Screens

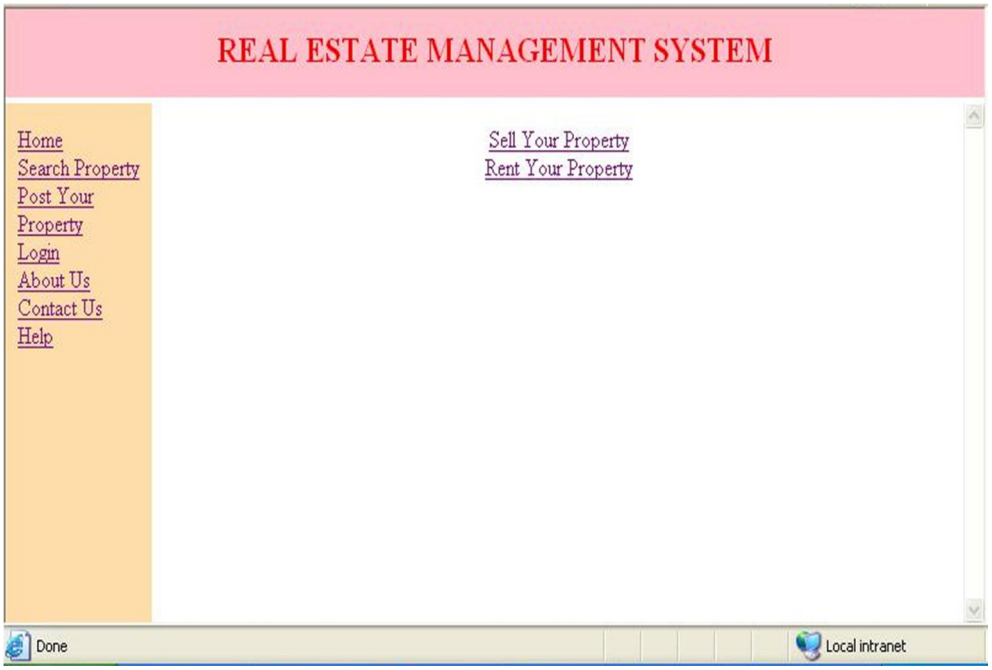
USER INTERFACE:

A. Home page

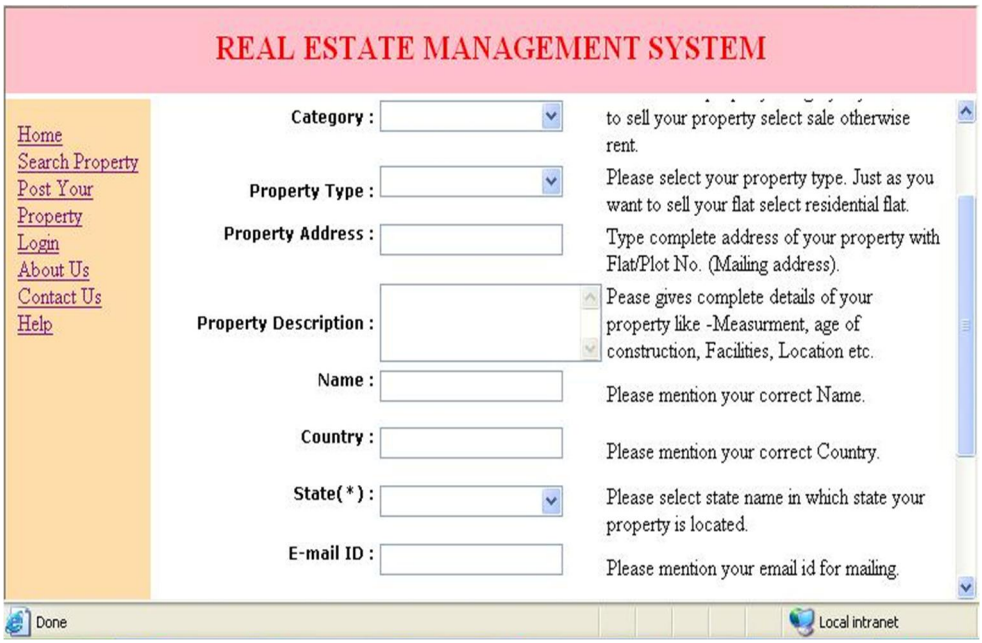
B. Login page

C. New User Registration page

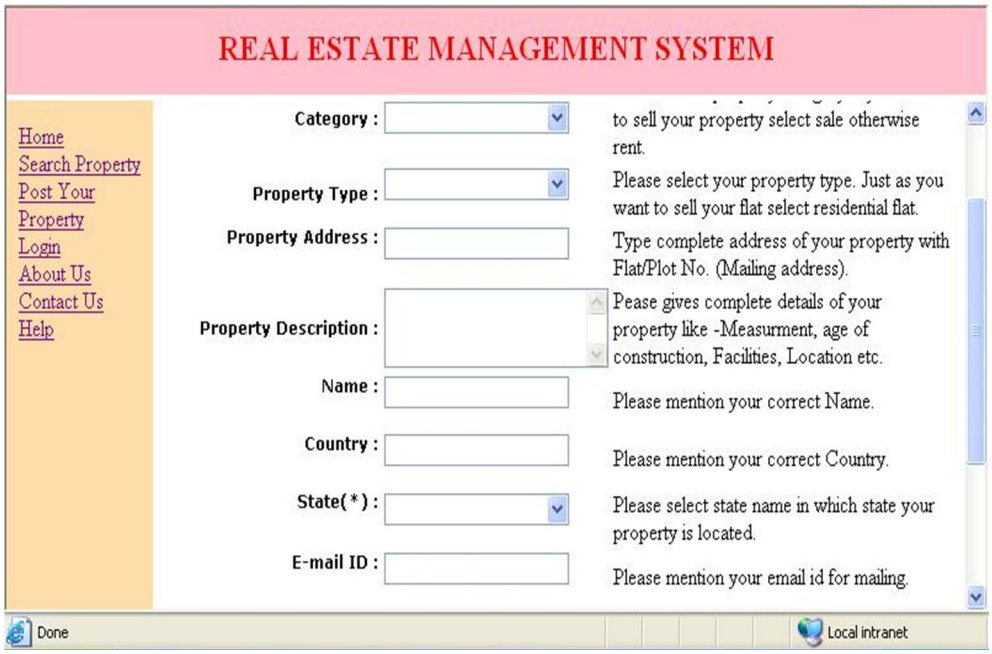
D. Post Property Menu Page



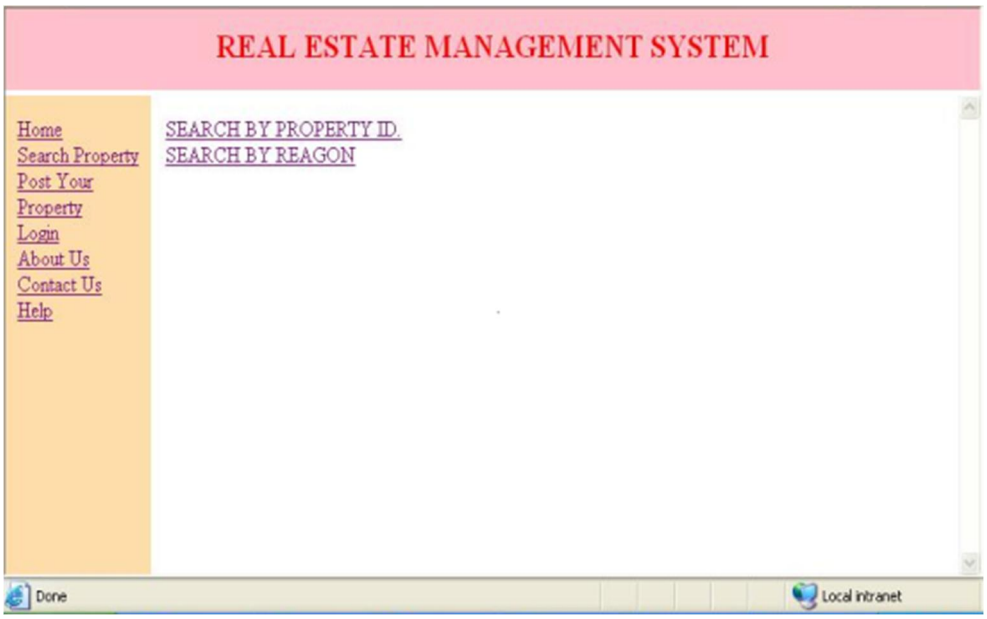
E. Post Property Page for Sale



F. Post Property Page for Rent

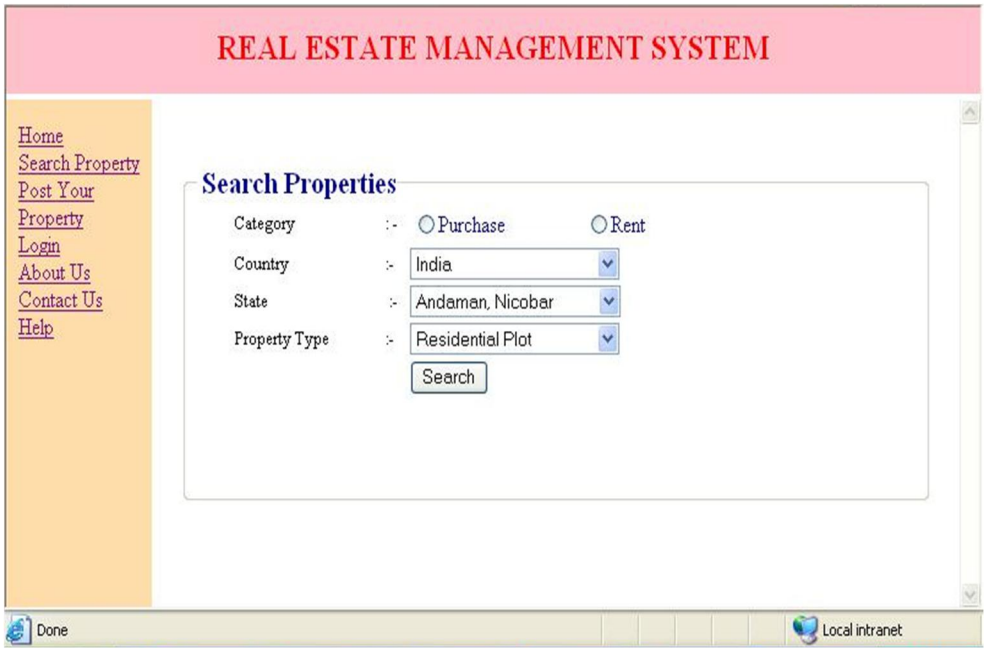


G. Search Property Menu Page



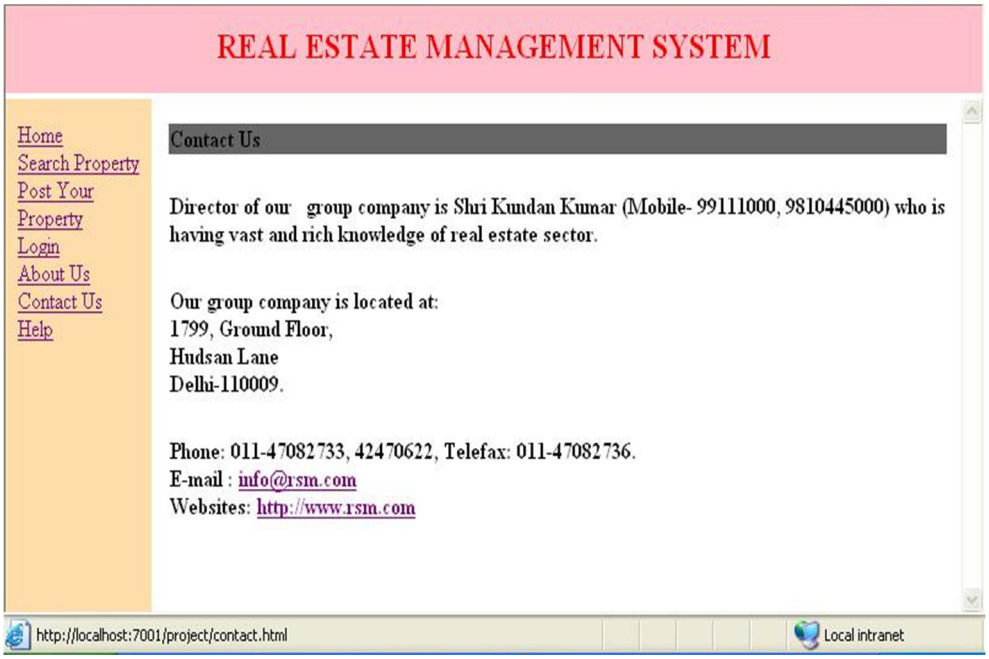
H. Search by ID Page

I. Search by Reagon Page



J. About Page

K. Contact Page



L. Help Page

SECTION FOUR

Conclusions and Recommendations

First: Conclusions

This project has presented a challenging assignment to me. In addition it has been a great learning experience. Not only I have improved my Java skills but I have also been able to explore alternatives in creating Client/Server pairs. Using Java object serialization and native support for threads, I have learned that I could build much more powerful and flexible system with fewer lines of code. Above all this project has laid a strong foundation for making a improved system that can be used in real world.

Second: Recommendations

The software "REAL ESTATE MANAGEMENT SYSTEM" is generic software and can easily be adopted by any of the Firm / company / Factory those are dealing with property selling, purchasing and renting. The changes in software can easily be accommodated. The addition and deletion of modules can easily be adjusted. The software can be easily be enhanced up to any reasonable extent depending upon user requirements. It will be able to serve even if the Firm wants several types of reports and facility to communicate with other branch via email. The project will be able provide its potential power in case of on line data processing.

Complete application is designed keeping in mind the modular approach. Each module is a complete section in itself and can be changed or upgraded any time without disturbing the other parts of the application. Any further enhancement will be an addition to exiting modules with zero modification required. Here although I have to make the software a general one, it can be customized according to the requirement of a particular broker company or client hospitals.

المستخلص:

يهدف البحث إلى تصميم نظام حاسوبي لإدارة العقارات غير المنقولة باستخدام لغة جافا (java) للشركات المتخصصة في بيع و تأجير العقارات يتضمن إنشاء مواقع ذات كفاءة على الويب ، يخدم عمل هذه الشركات بحيث يمكن إدراج كافة الأملاك و التفاصيل المتعلقة بها مثل صورة العقار، اسم المالك و تلفونه أو ايميله، وأسعار البيع والإيجار والمواصفات وغيرها ، بحيث يمكن للزبون من التعرف على العقارات بكل سهولة قبل القرار بالشراء أو الاستئجار.

وفي النهاية قدم للبحث مجموعة من الاستنتاجات والتوصيات اللازمة بشأنها.

Resources:

First: Books

[1] Aaron E. Walsh, Justin Couch, Daniel H., "***Java 2 programming Bilble***" Steinberg **2001.**

[2] Herbert S. "***The complete reference of Java*** ", Fifth Edition, McGraw Hill/Osborne, **2002**.

Second: Websites

[3] Java in 21 days.

[4] www.sun.java.com

[5] www.Wikipedia.org