

Internet-Based Geographical Information Systems for the Real Estate Marketing

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Abstract : In this paper , a user-friendly Geographic Information Systems (GIS) program was developed to manipulate the property listing for sale geographically, to display the property listing in relation to other social and environmental features including topography, ways, types of unit ,ways, gardens and/or shopping centers, and to provide tools for the houses buyers to search and inspect properties and make choices without the need of getting into the houses or without their need to travel to place of houses. This study combines four luminous areas Geographic Information Systems (GIS), Electronic business System, Management Information System (MIS) and Internet and applies the combined technology in the business of real state to make system this system called (GEMI).The first section explains the methodology and prototypes development for Sherouk Beach Resort Planning and Management (SBRPM) with GIS and how the GIS software program was developed. Secondly various application scenarios were provided to test the program developed. It proves that the GIS program developed in this paper provides a good and convenient option in the search of properties based on different selection criteria as concluded in the final sections.

Keywords - Geographic Information Systems (GIS), Electronic business, MIS, Real state, GEMI, SBRPM.

I. Introduction

The following section will address issues that are raised in each of these three stages in the program development. The GIS program was developed in three stages. The first stage is in system planning that is, to identify what functions will be required by the program and how they are to be incorporated into the software program. To do this, first is to become more familiar with the existing functions and tools in MapInfo 7[1] and then to identify what other functions are needed in this System.

The second, stage is to design the interface of the software program and to write codes using PHP to integrate the functions required into the MapInfo software program [2]. The software program can be applicable to other regions if similar datasets can be used for those regions.

In the third stage, the software program developed in this paper is applied to assist in the search of buying units in Sherouk Beach Resort Region (SBRR). By using different search criteria for the search, the software program is tested which demonstrates that the program is capable of assisting in buying in the real estate industry. Through this testing process, limitations of the software program and possible improvement solutions are also explored.

II. Methodologies For SBRPM With GIS

In this section we will make a comparative study between MapInfo 7 as its application software or as a platform for software development and MapInfo 8.5[3] software program was also explored. It appears that MapInfo 8.5 is more expensive and difficult for the real estate agents or practitioners to purchase and operate To this end, MapInfo 7 is much cheaper and it also provides all functions, tools and complexity that will be needed in this section. Therefore, MapInfo 7 was chosen as the base program in this paper [4].

III. GIS Software Design For System Strategy

This section discusses issues raised in the first two stages, that is, system planning as well as software design the following sub-sections will address these issues in detail.

Any successful GIS system starts out with a good strategic plan. Setting up a GIS without a strategic plan is like establishing a corporation without a business plan. GIS is an expensive proposition, far more so than at first sight. The bulk of costs are not in the software and hardware systems which typically get the lion's share of attention and decision making angst but the data. Similarly, benefits are produced not by the system alone, but by the intelligent design of analytical processes that generate useful and accurate information. If the system produces erroneous outputs, the investment in it is a waste, and the pretty maps on the wall are a farce.

Planning requires that you understand your needs, and take appropriate steps to have the system address them. For these purposes, a strategic plan is not a formal statement of mission, goals and objectives. The

goals and other factors (e.g. data availability) are taken into consideration, to determine priorities in data development and system deployment. According to Pal (2005)[5].

There are three issues that need to be considered before a new GIS is developed. They are, how do you do business now, what do you need to do business in the future and how can you do business better in the future.

The development of a GIS based information management system that will meet the requirements of an entire organization, and be flexible enough to meet future growth, requires a structured approach to answer these questions.

- 1) Conduct a Requirements Analysis
- 2) Develop a Pilot Project as proof of concept
- 3) Design logical and physical databases for the land base
- 4) Develop the mapping specification
- 5) Acquire a quality base map
- 6) Set up GIS organization
- 7) Acquire Hardware and Software, and train personnel
- 8) Develop the data base design to support the identified applications
- 9) Develop applications from the prioritized list identified in the requirements analysis document
- 10) Develop procedures and standards for data conversion
- 11) Convert data to support applications being developed
- 12) Develop data maintenance policies and procedures
- 13) Develop applications for other users and increase the user base over time
- 14) Implement a fully integrated system comprising all departments within the organization, incorporating the programs developed in the previous phases

To successfully implement a GIS in an organization, there are fourteen steps of events that need to be implemented in the following sequence [6]

IV. Simulation Results

In a SBRPM GIS application system, about thirteen thematic layers are used to represent features of a resort site. Figure. 1 shows the thematic layers of a resort site. As traditional database design procedures, object-oriented design tools are useful with the migration of GIS data management into a DBMS when used appropriately. And fundamental GIS design principles and methods still apply. Fig. 1 shows conceptive data models for thematic layers of SBRPM.

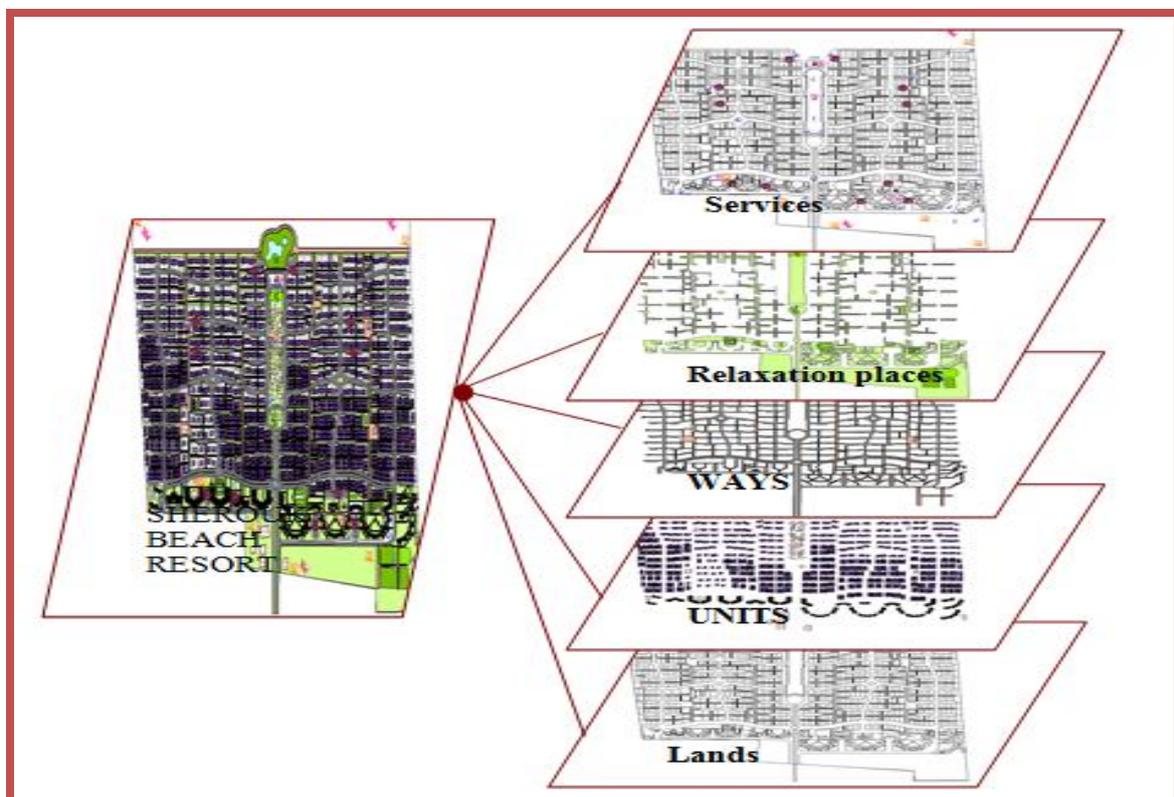


Fig.1 the key thematic layers in GIS model for SBRPM

The traditional database design procedures, object-oriented design tools are useful with the migration of GIS data management into a DBMS when used appropriately. And fundamental GIS design principles and methods still apply. Fig.2 shows conceptive data models for thematic layers of SBRPM .

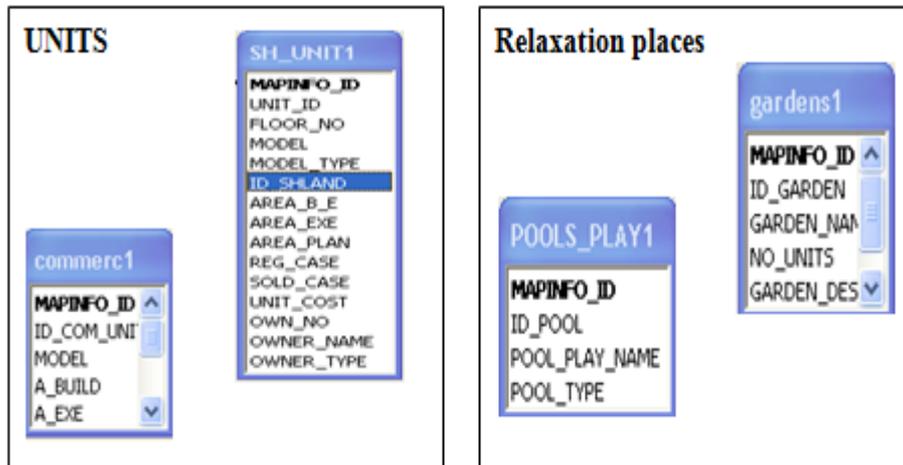


Fig.2 Example in the Data Models for thematic layers of SBRPM.

Figure 3 show the snapshot of the model type hotlink which access virtually any data or application directly from a view. A hot link is followed when you click on a feature in a data layer using the Hot Link tool provided by the software program



Fig.3 The snapshot of the model type hotlink

Hot links have to be defined before they can be used. To do this, you need to first add a field to the data's attribute table. This field will store the appropriate value for each feature in the data layer. For example, if your hot link action will be to display a relevant photo when a property is clicked on, you will need to add a field to the property data layer's attribute table to hold the name of the photo that should be accessed for each property, which will be discussed in detail later.

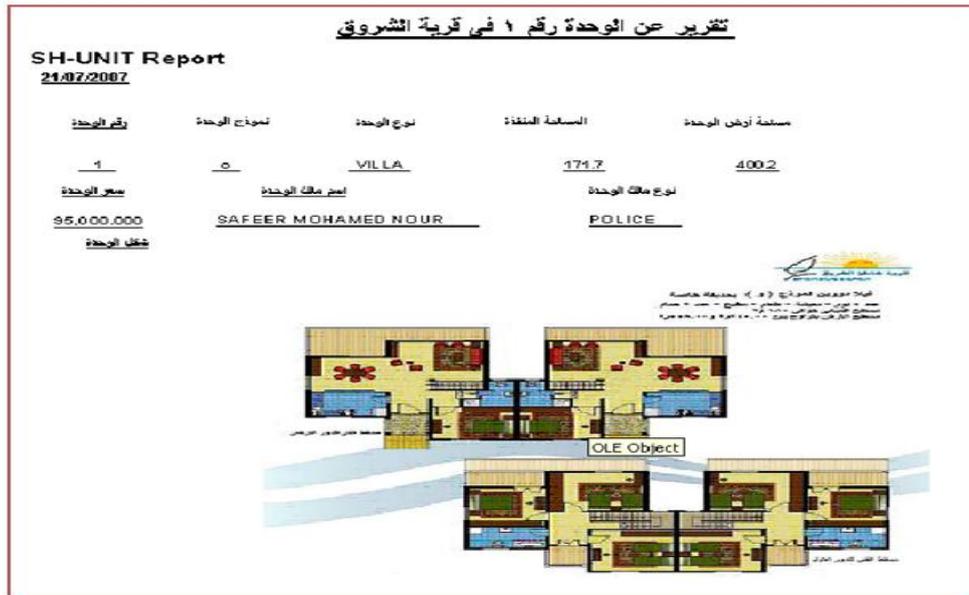


Fig.4 the Report about output of the Unit in SBR.

Once the client has searched the database and surfed around the database the client might want you to provide an output of the final results to the client [7]. Therefore, the GIS program needs to provide a function to generate output to the client. The output can be in the form of maps, or report. You may want to display any information that is of interest to the client on the output map or report. The client may use this output as their short listed properties for further inspection and then making decisions accordingly. In this system we are provided to customer by this output in the form of report as shown in Fig 4

In addition to the above functions, there are other functions that will also be very useful to assist the smooth operation of the information system, including zooming in, zooming out, pan, and zooming to selected features, identity, measure, etc. However, these functions or tools are standard GIS tools and are available on all GIS software package.

One of the most important issues to develop a GIS program for the real estate practitioners to use is to have an easy to use interface. This is called Graphic User Interface (GUI) design in GIS.

There are some things involved in customizing the interface of a GIS, which needs a certain amount of planning. The first step is to understand the needs of the users of the system on the interface. Who will be the users that will be interacting with the interface? What kinds of things do they often want to do? What are their desired end products? What kind of look and feel do they want for the interface? And so on. For the information system developed in this project, these questions were addressed in the above two sections and these needs and requirements will be incorporated in the interface of the program. For this system, the GUI looks like Fig.5

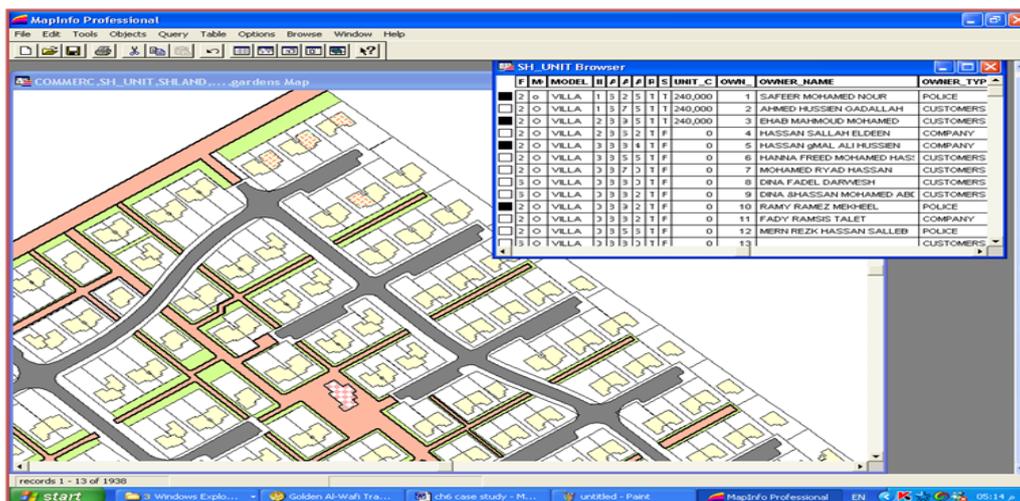


Fig.5 the GUI in SBR by MapInfo Program.

To test the software program developed in this paper, a number of sample testing were conducted. These tests prove that the software program developed in this System meets the requirements for property searching in the real estate industry [8]. The following sections present four sample scenarios where the SBR Read Estate Information System has been tested.

Figure 6 show the snapshot of the web page to reserve the unit on SBR



Fig.6 the Reserve Unit in SBR on Internet

V. Conclusions And Future Works

This Paper present the system and using in developing real estate management system.

Developing a method and system for using maps of GIS system in Electronic Business System (EBS) have reduced time of selling and buying.

Using a mixed model like object relation model have facilitated representing multimedia in the developed and make system to integrate the A Geographic Information Systems (GIS), Management Information System (MIS) , Electronic business System and Internet this system called (GMEI) to choosing, selling and buying the Unit in SHEROUK BEACH RESORT (SBR).

Using the distributed systems concepts and technology we have the advantage to redistribute workload and resources system, taking in consideration the customer's satisfaction our system has achieved a good quality.

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