

## DESIGN INFORMATION SYSTEM FOR UNIVERSITY OF DUHOK HOSTEL

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#### ABSTRACT

##### *Abstract*

This paper suggests a hostel management information system that can be used to administer University of Duhok Hostel. It shows the proposed database tables, user interfaces and functions required for this purpose. This information system will be used to manage the hostel rooms, floors, and various events. For the past few years, the number of students and the rooms accommodating them has increased incrementally. Hence, there is a lot of pressure on the person running the hostel as no special software or database are usually used in this context. This paper explores the drawbacks of the existing system and the requirements for designing a new computerized and more user friendly and graphical user interface (GUI) oriented system. Finally, the proposed system is implemented using a combination of Microsoft Access 2010 and visual basic, and the implementation results with their discussions are given in this article.

## I. INTRODUCTION

The growing number of students in UOD led to find new methods and systems to manage, analyse and organize their information for different units of the university that includes colleges, library and attendance which processes the information faster and gives outputs that are more accurate. At the same time, it reduces time and cost that are needed for this process. This means that the system can help the organization to serve more customers at the same working period [1]. Information Technology (IT) is very powerful in today's world, it expels the many different technologies inherent in the field of information technology and their impact on information systems to the collection of tools that make it easier to use, create, manage and exchange information. Information Technology covers a broad spectrum of hardware and software solutions that enable organizations to gather, organize, and analyse data

that helps them to achieve their goals. It also details technology-based workflow processes that expand the capacity of an organization to deliver services that generate revenue. The four focuses of IT personnel are business computer network and database management, information security, business software development, and computer tech support. IT is not used to design information systems for educational organization only, but also it has been used in other industrial like cinema, hotels and sports. The hostel represents one unit of university and it needs continuous update. This led to find a new system that can facilitate processing of the main function, which are required to be managed. This paper analyses functions that are needed for hostel management system and it suggests the database required for this propose.

## **I. LITERATURES REVIEW**

In this section, we are talking about using the information technology for designing different systems for different university units. The researchers suggested different systems to manage different units of university like student information system, registration office and attendance system. In [2] web base system has been designed to be used by the students to cover the main functions that need for. The system informs the students about their activities by sending notifications. The system collects, processes, and reports the data. The admin has the priority to access and update the information of each section like placement section and exam section. The system includes six models, which are Admin, Students, Exam Section, Placement Section, and Faculty Model. PHP, XML, CSS, MySQL and HTML technologies have been used for the implementation. Work in [3] designed a cloud based management system that can be used by different education organizations. Different units of the organization can access it. This system is developed for Christin Euint College, India. The system made the access of information easier. There are four main models of the system: campus information model, administrative model, department model and staff information model. Java, HTML, CSS, and Java script are the technologies that were used for the implementation of this system. The user of the system has to be registered so that he or she can use the system. After the registration of the user, the user has to login to the system. The researcher in [4] used Computer Telephony Integration (CTI) to solve the problems that result from huge number of the students. They try to access the system at the same time. The researcher suggested that the students could use their telephone to do the registration process. The CTI provide, (TAPI) control that are used, Software engineering process have been used to build the system. The other researchers suggested systems that are used for attendance to save the time that is spend when the process of taking attendance is performed by using the classical methods. In [5], a system has been designed for students' attendance. This system use Bluetooth 4.0 communication that is available in students' smart phones. The system utilizes Beacon signal to check the location of the student whenever he should be in the classroom. The system can be used to register the attendance of both students and professors. The system checks the attendance of the students according to the Beacon and it does not need to use other activates. This led to save the time that need for different activates. [6] is using classical methods of taking attendance that need effort and time. This led to search for new systems that save the time and effort. The researchers suggested different methods to register the attendance. These systems check some of the properties like fingerprint and face recognition. These methods used different tools like Barcode reader, radio frequency identification and Bluetooth.

## **II. LITERATURES REVIEW**

### **1- Process Analysis**

The proposed system needs the following functional requirement

- ✓ Book new room: this process is adding the new student occupying the empty room.

- ✓ Update the information of room: This process is adding new student to the already occupied room.
- ✓ Delete information: This process is deleting the data of the student leaving the room.
- ✓ Report about room: This process is reporting full information about the room in during a specific period.

## **2- User analysis**

For this system, there are two types of users

- ✓ Admin: who can add a new user or new admin
- ✓ User: who can implement (add, delete, update and issue report) the system

## **3- Database Design**

The general theme behind a database is to grip information as an integrated complete. A database is a collection of interrelated data stored with minimum redundancy to serve many users quickly and efficiently. After designing input and output, the analyst must focus on database design or how data should be organized around user requests. The universal objective is to make information access, easy quick, inexpensive and flexible for other users. To design database, it considers and concerns in many aspects. The specification will be determined by what is the data need to be stored in database. In database design, each step of the process needs to be done very carefully for avoiding any unexpected errors. The errors might occur in database, it can give complex problem for the system. These databases are designed by using Microsoft Access 2013. For university faculties members management system database, there are four tables involved such as guest, room, archive and user.

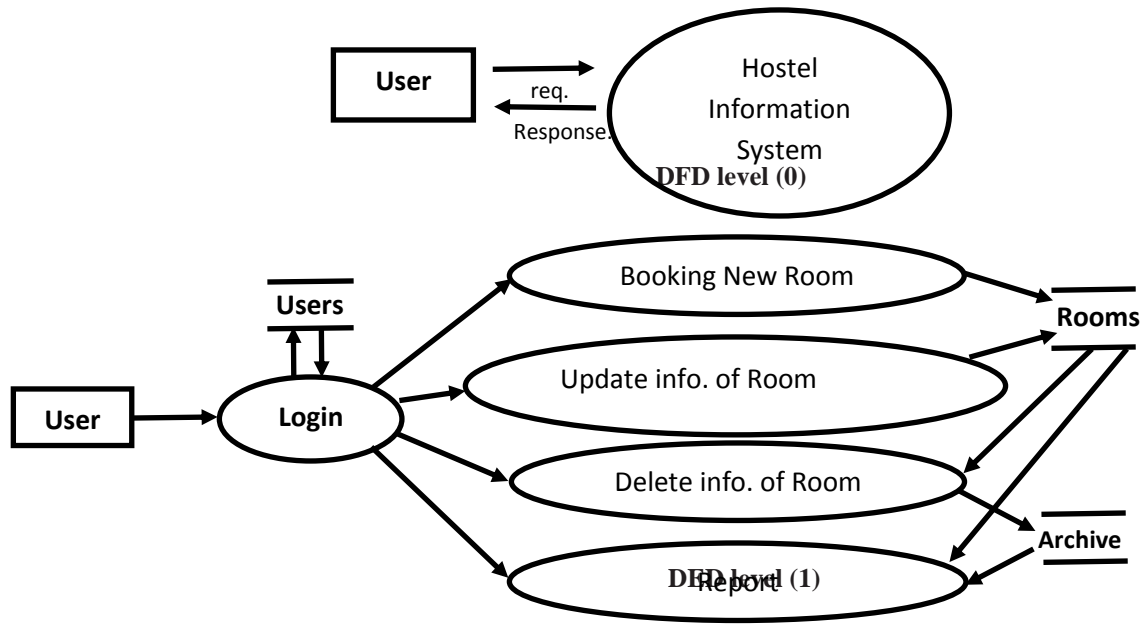
## **4- Visual basic for Applications (VBA)**

Visual Basic for Applications (VBA) is a computer programming language developed by Microsoft. It allows the creation of user-defined functions and the automation of specific computer processes and calculations. VBA allows users additional customization beyond what is normally available in Microsoft Office products, such as Excel, Access, Word and PowerPoint. Visual Basic provides a convenient method for building user interfaces.

## **5- Coding Design**

This coding designing showed how programming language would be implemented. It also will explain the purpose for each coding development. Visual basic (VB) statement is used in order to make sure that interfaces can be connected with database.

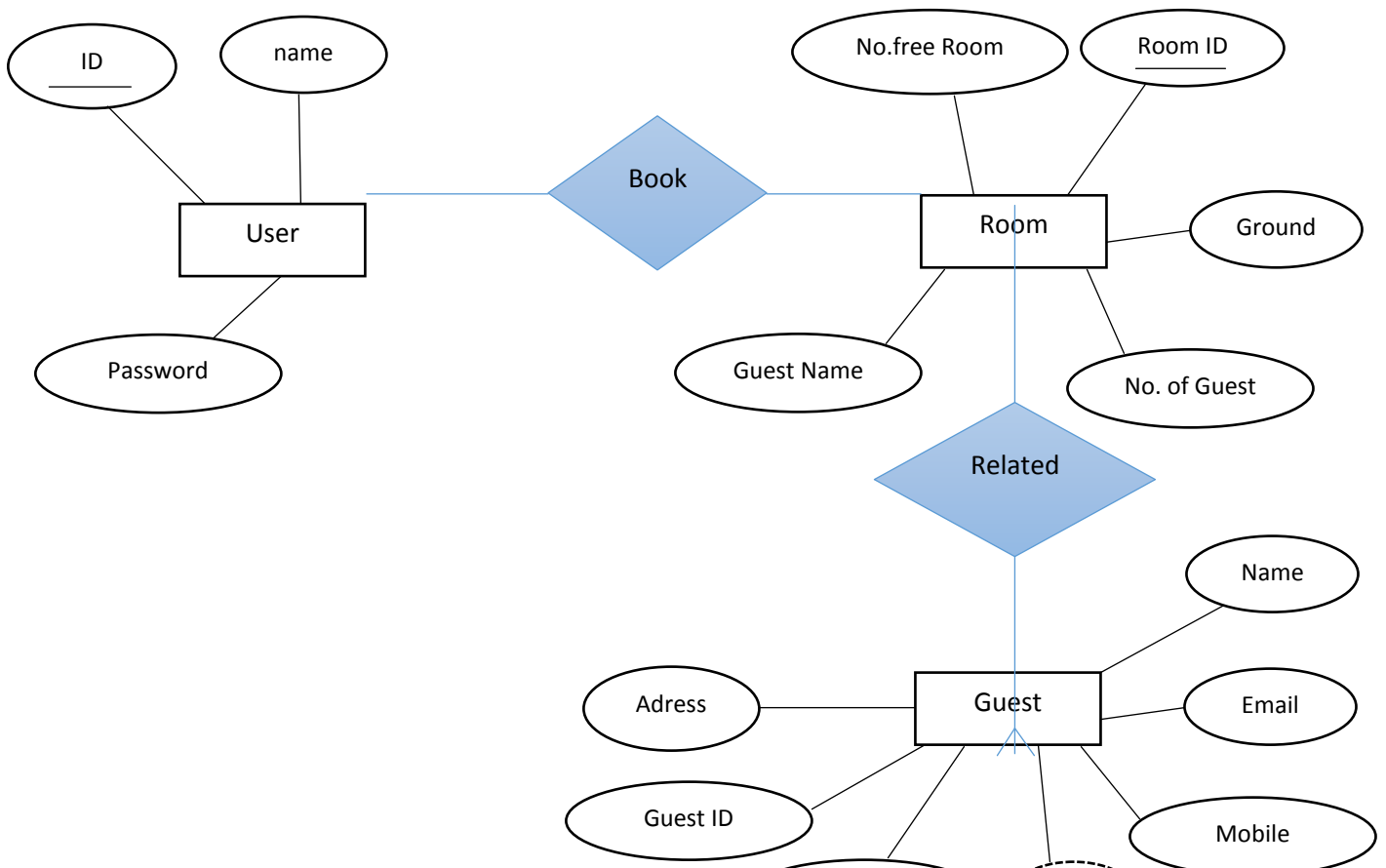
The following DFD diagram shows the process and users of the system



Database systems are often modeled using an entity relationship diagram (ERD) as the “blueprint” from which the actual data is stored, this will be the output of the design phase.

ERD is a model that identifies the concepts or entities that exist in a system and the relationships between those entities. It is a graphical representation of the logical structure of a database.

ERD for Guest Information System



## RESULTS

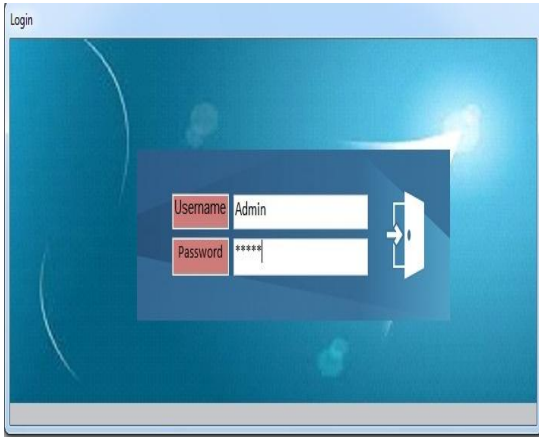


Figure 1

Login Form to Database



Figure 2

Select Form for Floor Rooms

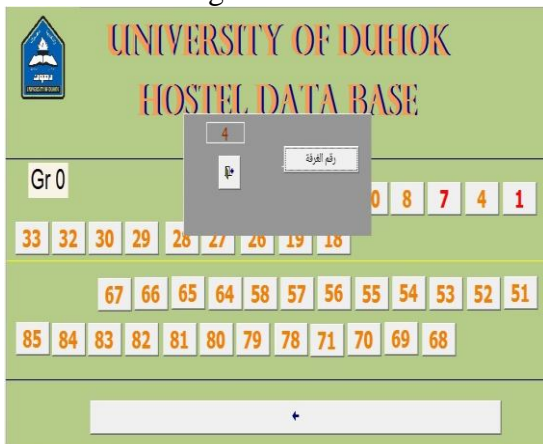


Figure 3

Select Room Number Form for Booking

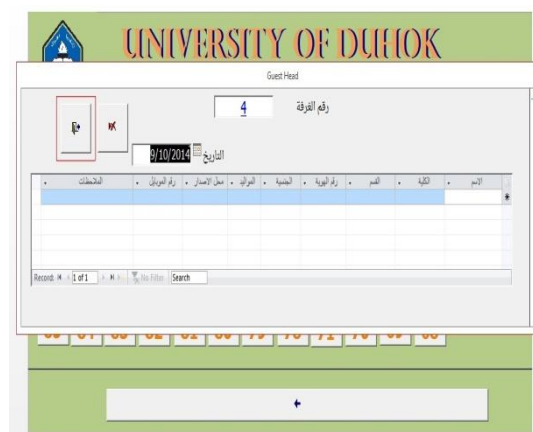


Figure 4

Sub-Form to Enter Data in selected Room



**Figure 5**  
Enter Data of Student



**Figure 6**  
Color of Room changes to Indicate Booking

**HOSTEL DATABASE**  
**UNIVERSITY OF DUHOK**

لايه رين ناكنجيونو قوتايان  
صفحة إقامة طلاب الاقسام الداخلية

الاسم	رقم الغرفة	الكلية	القسم	رقم الهوية	الجنسية	مكان الاصدار	رقم الهاتف	تاريخ الولادة	الملاحظات
احمد علي حسن	10	الهندسة	مدني	00428564	عراقي	دوكة	0750583544	1991	
الان صبر محمد	16	الزراعة	الطب القوي	00754585	عراقي	دوكة	07504536552	1994	
يحيى رمضان احمد	81	الزراعة	II	00472556	عراقي	دوكة	07504608388	1992	
نزاره صبر احمد	115	الادارة	الهندسة	0045847	عراقي	دوكة	07504237836	1990	

**Figure 7**  
General Report Page



**Figure 8**  
Form that shows Report by Period





**University Of Duhok**

رأبورت لسه و قوتابيتن به شن نافخويين بو ما و به كن ديار كرى

تقريوعن طلاب القسم الداخلي للفترة المعنية من 1/1/2016 الى 12/31/2016

تاريخ السكن	رقم الغرفة	الاسم الثلاثي	الجنسية	القبيل	رقم الهوية	الجنسية	محل الاصدار	تاريخ الولادة	رقم الهاتف	الملاحظات
9/10/2016	4	تاهان رمضان احمد	الترقية الانسان	مذ فقس	00488654	عراقى	بغداد	1992	07504846587	
9/10/2016	4	الاقلام عدنان	الاقلام	الاقلام	00588956	عراقى	بغداد	1994	07507912358	

Figure 9  
Report by Period Page

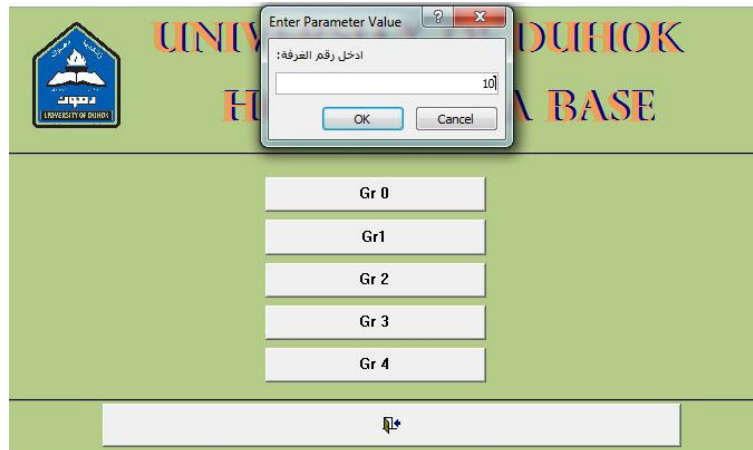


Figure 10  
Form that shows Report by Room Number

UNIVERSITY OF DUHOK		لايه رى ناكنجيبونا قوتابيا	
HOSTEL DATABASE		صفحة إقامة طلاب الاقسام الداخلية	
رقم الغرفة 10			
الاسم	رقم الغرفة	الجنسية	القسم
احمد علي حسين	10	الهندسة	مذني
محل الاصدار	رقم الهاتف	تاريخ الولادة	الملاحظات
بغداد	0750585544	1991	

Figure 11  
Report by Room Number Page



Figure 12  
Form that shows Report by Year



رقم النواك	رقم الهاتف	تاريخ الولادة	الملاحظات	رقم الغرفة	الغرفة	الاسم
1986	07504456585	دولته	عراقي	45448545	مكتبة	شلمان مصطفى
1992	07504846587	دولته	عراقي	00485654	قوية الاساس	كاهن ربهسان احمد
1994	07507512356	دولته	عراقي	00368956	الاداب	الفا تاري عبد الله
1991	07504844764	دولته	عراقي	0459654	قوية الاساس	احمد حسين محمد

Figure 13  
Report by Year Page

### III. CONCLUSIONS

This system can save time needed for registering students in the hostel while storing the archive for each room during the period a student stays from their registration to departure. The system can update the information for every room easily when a new student is added to the room or when the student leaves the room. The system showed good performance and it could cover all the activities needed for managing the hostel.

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