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DEVELOPMENT OF WEBSITE FOR EDUCATIONAL PROCESS SUPPORT OF STUDENTS IN IRAQI UNIVERSITY

GRADUATE QUALIFICATION WORK
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ABSTRACT

This project includes the development of a website for students of iraq university college, website applications are one of the most popular and modern applications in all fields. Job demands are challenges for web site development. The methods of developing existing websites vary from custom practices to complex, standard format methods where most developers use custom methods. This is true when web projects grow in size and complexity as developers continue to use traditional technologies to address the growing demands of this web application and how it is implemented.

The aim of the web application is to provide students with scientific benefit, how to make students register on the site, to add personal information to students, and to know the results of the students for all subjects. The objectives are achieved through the implementation of some programming languages including HTML, CSS and PHP. Web models focus on rapid application development and provide a rich new look for user interfaces and improved user experience. Partitioning approach is to comply with the standards of software engineering and the web to improve quality, accessibility and ease of use. Web development approach, full system document, web application for the university, and facilitate site work for students and their performance.

INTRODUCTION

Topicality

The website of the university is intended for use with the purpose of getting users of new information about the university, such as timetable, information about departments and professions, teachers, administrative information, nearest events, as well as for storing and accessing files, some users, the use of internal mail domain.

The website is applicable for remote use by any users. Requirements for the administrator knowledge of HTML markup language and cascading style sheets CSS, basic knowledge of PHP and JavaScript, knowledge of software development tools, the principles of the MySQL database, site optimization.

The client part of the site runs in any graphical web browser, the requirements for the client computer are determined by the requirements of the browser. Correct work of the program is guaranteed only in the latest versions of web browsers.

Requirements imposed by the user on the system simple and convenient visualization of the site in the style of web 2.0, ease of navigation, availability of information sought, high speed of loading web pages. The program consists of a set of blocks (pages, scripts, and style sheets), text, and graphics, video and flash files. To store and process this data, you need a web server and an ftp server. To date, almost every organization has its own website. In conditions of using modern information technologies, this is a necessary factor for the existence of the university.

The purpose of this work is the development of a new website of university using a database. The tasks of this work are dynamism, ease of use and navigation, scalability, convenient administrative interface for editing structure and adding new information. Automation is the utilization of technology to replace human with a machine that can perform more quickly and more continuously. By automating documents that took up many large storage rooms can be stored on few disks.

Goal and objectives of the research

The objective of the research topic is to design a website for the university of Iraq to help the student to study.

For the reach this goal we must achieve following objectives.

1. The analysis of subject area.

2. The problem statement.

3. Comparative analysis of the content management frameworks for website development.

4. Development of website application.

4. Design the system function requirement by using use case diagram.

5. Design database scheme.

6.Several fragments of PHP code for implementing the basic functionality.

7. Functional testing.

The practical significance

The practical benefit of this scientific research to develop the website of the college of iraq university to help develop the scientific curriculum based on how to make the website works correctly and easy for each student and teacher to use it and how to make the student see each materials and specializations of the university and its scientific sections and how to see grades and subjects available at the university.

And this site is necessary in the university in improving the quality of the university and the extent of development and keep pace with the stages of scientific development to raise the level of scientific and academic education in the university and this is a great gain to the university and the extent of interest of students to the site and the university's keen to develop the site and important to student.

This project is useful because it contains good properties.

1. Allow every student to entry website.

2. All student can see all from degree, self information.

3. The teacher can add mark to website.

Structure of the thesis

The thesis comprises of four chapters, introduction, conclusion and reference list.

In chapter one, the analysis of the subject area is represented that's the problem statement, comparative analysis of the content management frameworks for web-development, programing languages such HTM, CSS, PHP, MYSQL, PHP my admin to development technologies, which we used to develop the project.

In chapter two, there is a software design, description of the subject, requirement of database such the features that are available for the student, the features that are available for the admin, the features that are available for the teacher and the features that are available for the dean. Also use case diagram, actor description database scheme and the design the application interfaces.

In chapter three, we show the implementation of the web application implementing basic functionality of the system the structure of table and the SQL queries.

Chapter four is devoted to testing of website application, the used methods of testing, screenshots of the website interfaces.

1. THE ANALYSIS OF THE SUBJECT AREA

This chapter works, analyses and discuss why needing this website, what is the problem website, what are best current website development technologies available, which technologies used to development the project.

1.1. The problem statement

Making easy the activities of students and teachers the website will host information for students of all groups, contacts of the dean's office and heads of departments, timetable, as well as a forum where students and teachers will be able to download and download various files for study, lecture notes, examples of laboratory works, software. Information will be posted for applicants information on admission, passing the admission examinations, the privilege of studying at the university, which will influence the choice of schoolchildren and people who have received secondary specialized education, who decided to continue their studies at the university.

I want to create an website to student of iraq university college because need this system in my university in this system, can make any assignment or quiz that posted into the digital class which will result in a column being added in the gradebook and also our students grades are automatically entered in when grading on the relevant quiz or assignment section.

The university in my country are contain four stages to department communication engineer, computer engineer and computer technology in university. In this research created a website to university. The university needs this application because it will help the students, teachers and dean from all aspects. The students will see the subjects they study, all tasks that they must do, all marks that they get after finishing the tasks but they cannot change these information and cannot login into the teacher's page or dean page.

When the teacher's login into this site they can see information about all students in classes, groups and the tasks that they give to students and their marks, the teachers can add or change any mark or task. When the dean logins

into this website he can see the information about the university that needs to know about. Example, how many students in all classes and in any scientific engineering departments and dean can see information about the students who got high marks and how got low marks.

This website application is based on web framework so it is a reliable website because it is considered one of the best in building website, quicker and there is no user can change or hack.

1.2. Comparative analysis of the content management frameworks
for website development

There are many tools for making web pages, all web editors can be divided into visual and text.

Visual editors do not require you to know html, CSS and other technologies for page layout. In the visual editor, you have various elements of your site, as if on a piece of paper, and the editor writes the code for you on your own. it should be noted that no visual editor is perfect and all of them are somehow limited in their capabilities, therefore professional coders require the ability to write code with their hands, which is why professional coders need text editors. In these editors, you write the code yourself. In text editors, there are usually different functions that make it easier for the encoder to write code, such as code highlighting (so it's easier to see where the styles are embedded in the code, or scripts, and where the text is), various hotkeys and keys that insert ready-made (code pieces, special characters) in the code.

1.3. Programing Languages
1.3.1. HTML (Hyper Text Markup Language)

It the standard markup contains about the many language for creating web pages and web applications. With cascading style sheets (CSS) and JavaScript. Forms a triad of cornerstone technologies for the world wide web [8]. Web browsers receive HTML documents from a web server or from local storage and

render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of html pages. With html constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as image and input directly introduce content into the page. Other tags such as surround and provide information about document text and may include other tags as sub-elements. browsers do not display the html tags, but use them to interpret the content of the page.

HTML can embed programs written in a scripting language such as JavaScript which affects the behavior and content of web pages. Inclusion of CSS defines the look and layout of content. The world wide web cantains consortium (W3C), maintainer of both the html and the CSS standards, has encouraged the use of css over explicit presentational html since 1997 [11].

1.3.2. CSS (Cascading Style Sheets)

Is a style sheet language used for describing the presentation of a document written in a markup language like HTML [3]. CSS is a cornerstone technology of the world wide web, alongside html and JavaScript.

CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts contains [18]. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate. CSS file, and reduce complexity and repetition in the structural content.

Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as

on-screen, in print, by voice (via speech based browser or screen reader), and on braille-based tactile devices. CSS also has rules for alternate formatting if the content is accessed on a mobile device [17].

The name cascading comes from the specified priority scheme to determine which style rule applies if more than one rule matches a particular element. This cascading priority scheme is predictable.

The CSS specifications are maintained by the world wide web consortium m (W3C). Internet media type (MIME type) is registered for use with CSS by RFC 2318 (March 1998). The W3C operates a free CSS validation service for CSS documents [19].

In addition to HTML, other markup languages support the use of CSS, including XHTML, plain XML, SVG, and XUL.

1.3.3. PHP (Hypertext Preprocessor)

Is a server side scripting language designed for web development but also used as a general purpose programming language. It was originally created by raises in 1994 [7]. PHP reference implementation is now produced by The PHP Group [10]. PHP originally stood for Personal Home Page [12].but it now stands for the recursive acronym PHP hypertext preprocessor [14].

PHP code may be embedded into HTML code, or it can be used in combination with various web template systems, web content management systems, and web frameworks.

PHP code is usually processed by a PHP interpreter implemented as a module in the web server or as a common gateway Interface (CGI) executable. The web server combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page. PHP code may also be executed with a command line interface (CLI) and can be used to implement standalone graphical applications [13]. The standard PHP interpreter, powered by the end engine, is free software released under may also be executed with the PHP License.

PHP has been widely ported and can be deployed on most web servers on almost every operating system and platform, free of charge.

The PHP language evolved without a written formal specification or standard until 2014, leaving the canonical PHP interpreter as a de facto standard. Since 2014 work has gone on to create a formal PHP specification [13].

During the 2010s there have been many all increased efforts towards standardization and code sharing in PHP applications by projects such as PHP FIG in the form of PSR initiatives as well as composer dependency manager and the Pack gist repository. PHP hosts a diverse array of web frameworks requiring framework specific knowledge, with Larval recently emerging as a popular option by incorporating ideas made popular from other competing non PHP web frameworks, like ruby on rails.

1.3.4. MySQL

MySQL is the most popular open source relational SQL database management system. MySQL is contain one of the best RDBMS being used for developing various web-based software applications. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company. This tutorial will give you a quick start to MySQL and make you comfortable with MySQL programming [5]. A database is a structured collection of data. It may be anything from a simple shopping list to a picture gallery or the vast amounts of information in a corporate network. To add, access, and process data stored in a computer database, you need a database management system such as MySQL Server. Since computers are very good at handling large amounts of data, database management systems play a central role in computing, as standalone utilities, or as parts of other applications [9]. Whatever the size of the organization or the type of information and take, for example an elementary school, the database to which they relate will include all the information related to the teachers and put this information in a special table where teachers this table record for each teacher, and also includes this database of all information related to the students and also where this information is classified in tables each

student has its own record and other information vary from university as accomplished in the field of sports and scientific debates and cultural, etc. MySQL is currently the world's most popular and widely used open source database technology and data storage system. MySQL offers great reliability and ease of use. An unusual advantage that MySQL offers that you can incorporate different database storage engines with it, depending on your need offers great reliability and ease of use MySQL.

1.4. PhpMyAdmin

is a free and open source administration tool for MySQL and MariaDB. As a portable web applicationwritten primarily in PHP, it has become one of the most popular MySQL administration tools, especially for web hosting services. PhpMyAdmin Interface phpMyAdmin is a web based interface to a MySQL server. The interface is written in the PHP language, which is frequently used for web based interactive programs [6]. phpMyAdmin translates what you entry into the web browser, sends queries to the MySQL database, and translates the returned information back to web format. As we will see, there are other ways to access the MySQL database, including directly from mathematica [15].

By that time, php my admin had already become one of the most popular PHP applications and MySQL administration tools, with a large community of users and contributors. While php my admin is a perfect tool for browsing the database, managing user privileges and executing SQL queries, it can't be considered a full featured administration tool. In order to coordinate the growing number of patches, group of three developers registered php my admin project at sourceforge and took over the development in 2001. phpMyAdmin a free software tool written in PHP, intended to handle the administration of MySQL over the Web. phpMyAdmin supports a wide range of operations on MySQL and MariaDB. Frequently used operations (managing databases, tables, columns, relations, indexes, users, permissions, etc) can be performed via the

user interface, while you still have the ability to directly execute any SQL statement.

To access phpMyAdmin and your database.

1. Start your servers. This can be done from the MAMP/WAMP application that you installed. On some systems there may also be an application icon that can be used .

2. Open the start or home page with the same application. You can also find this page simply by opening a web browser and entering the address.

3. Start phpMyAdmin from the tools menu the localhost web page.

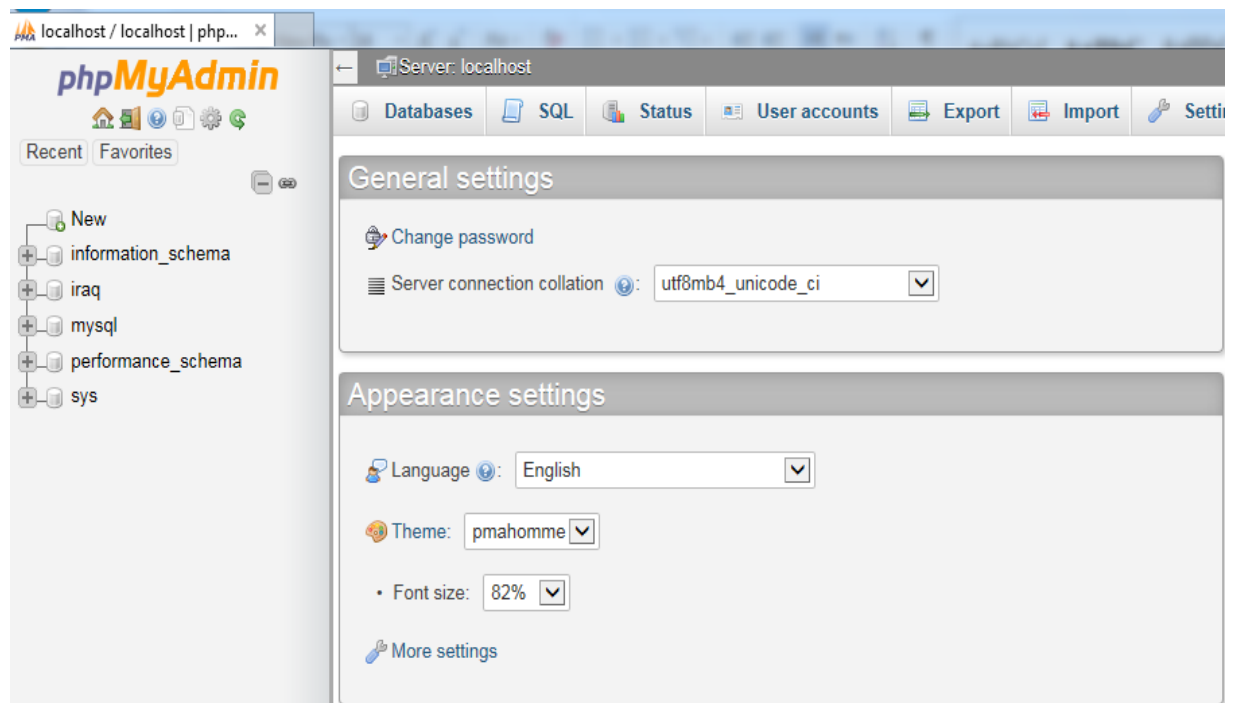Further you will see the necessary column after updating see fig. 1.

Fig. 1. Phpmyadmin diagram

2. DEVELOPMENT OF WEBSITE APPLICATION

2.1. Functional requirements

Functional requirements are something any project must have in order not to get fail during the work.

The features that are available for a system.

1. The student can be to view marks.

2. The student can be to view tasks.

3. The student can be view information about himself.

4. The student can be view specialties.

The features that are available for the admin.

1. The admin can be add new student.

2. The admin can be add new group.

The features that are available for the teacher.

1. The teacher can be view student in his class and group.

2. The teacher can be add tasks.

3. The teacher can be add marks.

4. The teacher can be add exams.

The features that are available for the dean.

1. The dean can be add new teacher.

2. The dean can be add new student.

3. The dean can add personal information.

2.2. Use case diagram

A use case describes a sequence of actions that provide something of measurable value to an actor and is drawn as a horizontal ellipse. An actor is a person, organization, or external system that plays a role in one or more interactions with your system. Actors are drawn as stick figures. Associations between actors and use cases are indicated in use case diagrams by solid lines .Fig. 2 shows the developed use case diagram. While a use case itself might drill into a lot of detail about every possibility, a usecase diagram can help provide a

higher level view of the system. It has been said before that use case diagrams are the blueprints for your system. They provide the simplified and graphical representation of what the system must actually do.

As discussed in the previous chapters, textual requirements are an easy specification method but fails at specifying interactions between a system and its users. Ause case describes an interaction scenario and its possible alternatives. A use case diagram graphically pictures several use cases, their actors, and their relationships. Use cases are about what the system should do, from the perspective of a user. Ause case describes a desired behaviour independently of implementation details [1]. The goal of use cases is to capture all system level functions that the users envision. Note that in relation to user requirements use cases will refine these requirements. Use cases are given a unique identifier to make them traceable. In systems engineering use cases are used at a higher level than have many function to use case mean within software engineering often representing missions or stakeholder goals .

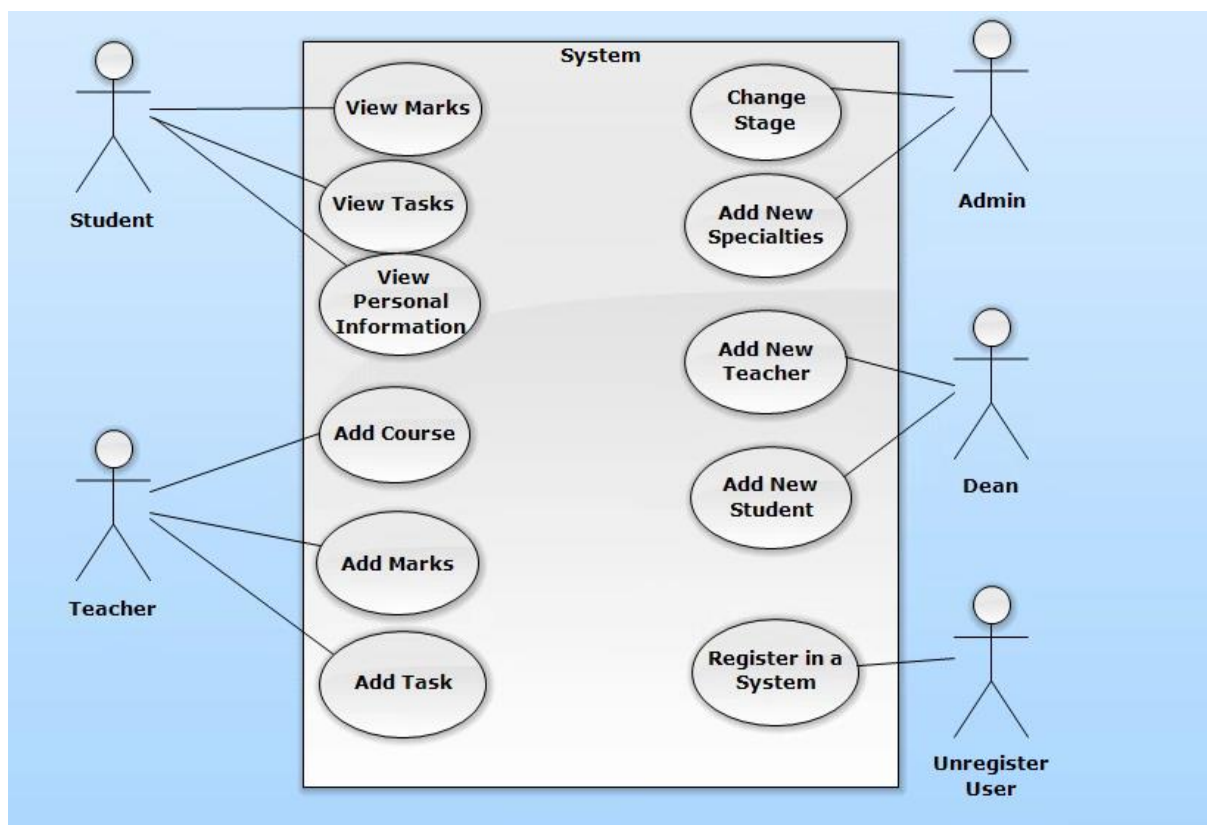Fig. 2 shows of ” Use case diagram ".

Fig. 2. Use case diagram

System is contains on five part, for each part has an authorities Specific, as the following.

1. Student actor.

Description to student checked information and the view all specify university, the student can view marks, view tasks, view department.

2. Teacher actor.

Description to teacher can add task, add marks, view student his class & group. The teacher has the ability to see and update data (Add, delete and edit) for all forms within the system.

3. Admin actor.

Description to Admin is a person with the possibility to update the site system and other characteristics, adding students and adding teachers.

4. Dean actor.

Description to dean is a person who has wide authority in this system, where he can see and edit and search all information system.

5. Unregister actor.

Description to any user is must be it to register to entry in website.

2.3. Database scheme

A database system is its structure described in a formal language supported by the database management system DBMS and refers to the organization of data as a blueprint of how a database is constructed (divided into database tables in the case of relational databases) [4]. The formal definition of database schema is a set of formulas sentences called integrity constraints imposed on a database. All constraints are expressible in the same language [2]. A database can be considered a structure in realization of the database language. The states of a created conceptual schema are transformed into an 17 explicit mapping, the data base schema. This describes how real world entities are modeled in the database [9]. A database schema specifies, based on the database administrator's knowledge of possible applications, the facts that can enter the

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database.The database in the project consists of ten tables. The database schema is presented in fig. 3. Contain some properties to help website university, when student find easy to connected with website to improve.

A database schema specifies, based on the database administrator's knowledge of possible applications, the facts that can enter the database, or those of interest to the possible end users. The notion of a database schema plays the same role as the notion of theory in predicate calculus. A model of this "theory" closely corresponds to a database, which can be seen at any instant of time as a mathematical object. Thus a schema can contain formulas representing integrity constraints specifically for an application and the constraints specifically for a type of database, all expressed in the same database language. The structure of the database that defines the objects in the database.
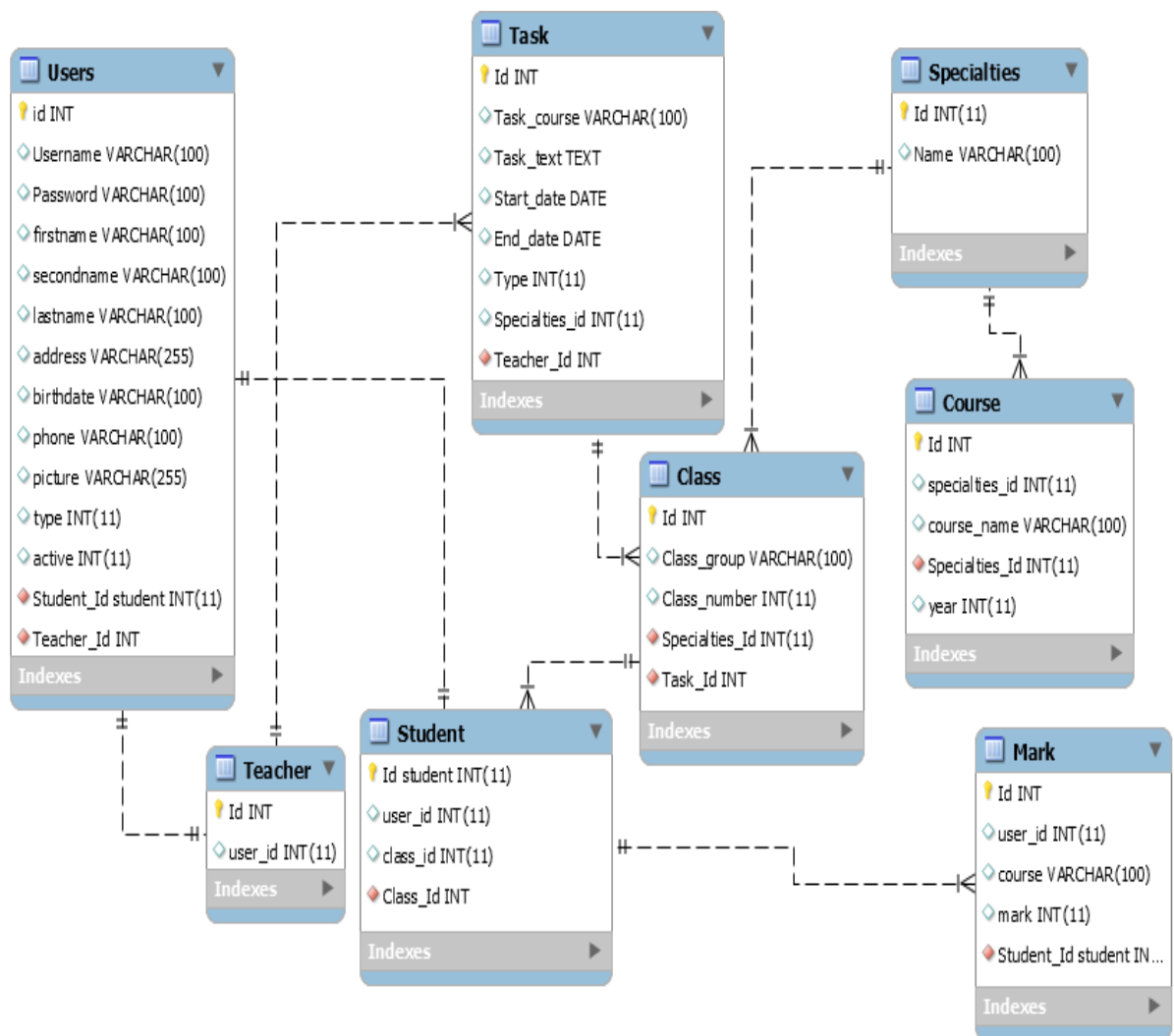

Fig. 3. Database schema

1. The structure of users table.

The structure of users table, this table contains information related to the users at the university. The system "Users", it consist of 12 fields see table. 1.

Table 1. Structure of table "Users"

Column Type	Data Type	Allow nulls
ID	INT	Unchecked
Username	VARCHAR 100	Unchecked
Password	VARCHAR 100	Unchecked
Firstname	VARCHAR 100	Unchecked
Secondname	VARCHAR 100	Checked
Last name	VARCHAR(100)	Checked
Address	VARCHAR(255)	Unchecked
Birthday	VARCHAR(100)	Unchecked
Phone	VARCHAR(100)	Checked
Picture	VARCHAR(255)	Checked
Type	INT(11)	Unchecked
Active	INT(11)	Unchecked

The users table consists of twelve columns.

1. Users _id: the primary key for users table from type (Auto number).

2. Username: the name of users who in this university from Type (text).

3. Password: password for users.

4. First name: name of users who works in this university from type (text).

5. Second name: name the father of users from type (text).

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6. Last name: last name of users from type (text).

7. Address: the address of users from type (text).

8. Birthday: birthday date of users from type (number).

9. Phone: phone to users.

10. Picture: picture to users.

11. Type: the type for users.

12. Active: the active for users.

2. The structure of teacher table.

This table contains information related to the teacher at the university. When teacher entry to website, the admin can see any user by php my admin program. This table explain application the teacher in website. The admin can entry in localhost to view some properties to users. This table is very important to view some function in teacher table. The teacher cannot entry to localhost because do not have permission to enter to localhost. When the teacher cannot entry to admin page. The admin can entry in to view some properties to users and working any properties to complete some thigs. Entry to localhost because do not have permission to enter to localhost. To view some function in teacher table can entry in to view some properties to users. The system "Teachers", its consist of 2 fields see table. 2. Teacher can not to enter to any user in the website application to entry to university.

Table 2. Structure of table "Teachers"

Column Type	Data Type	Allow nulls
ID	INT	Checked
User_id	INT (11)	Unchecked

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The teacher table consists of two columns in the following.

1. Id: the primary key of class's table from type (Auto number).

2. User_ ID: the foreign key of task table.

3. The structure of student table.

This table contains information related to the student at the university. When student entry to website, the admin can see any user by php my admin program. The system "Student", its consist of 3 fields see table. 3. The admin can entry in localhost to view some properties to users. This table is very important to view some function in student table.

Table 3. Structure of table "Student"

Column Type	Data Type	Allow nulls
ID	INT	Checked
User_id	INT (11)	Unchecked
Class_id	INT (11)	Checked

The teacher table consists of three columns in the following.

1. Id: the primary key of class's table from type (Auto number).

2. User_ ID: the foreign key of task table.

3. Class_ ID: the foreign key of task table.

4. The structure of task table.

This table contains information related to task at the university. The admin can entry in localhost to view some properties to users. Student this table is very important to view some function in student table. This table very important to worked every thing to doing some properties, teacher can add task to student in website application to university to good service to users to doing, the system "Task", its consist of 8 fields see table. 4. Each field has many

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services, some service very important to worked some properties to website application.

Table 4. Structure table "Task"

Column Type	Data Type	Allow nulls
ID	INT	Unchecked
Task _ title	VARCHAR(100)	Unchecked
Task_ Text	Text	Unchecked
Start _ date	Date	Checked
End _ date	Date	Checked
Type	INT(11)	Unchecked
Specialties _ id	INT(11)	Checked
Teacher_id	INT	Checked

The task table consists of eight columns the following.

1. Task _ Id: the primary key for task table from type (Auto number).

2. Task_ Title: task gives to student from type (text).

3. Task_ Text: task text to student.

4. Start _ Date: the start date for achieving the task from type (date/time).

5. End _ Date: the end of date for doing the task from type (date/time).

6. Type: the foreign key of task table.

7. Specialties _Id: the foreign key of specialties table.

8. Teacher_Id: the foreign key of specialties table.

5. The structure of class's table.

This table contains information related to the class at the university. The system" Class ", its consist of 5 fields see table. 5.

Table 5. Structure of table "Class"

Column Type	Data Type	Allow nulls
ID	INT	Unchecked
Class _ group	VARCHAR 100	Unchecked
Class_ number	INT(11)	Unchecked
Speciaties _id	INT(11)	Unchecked
Task_ id	INT	Unchecked

The class's table consists of five columns in the following.

1. Id: the primary key of class's table from type (Auto number).

2. Class _ group: group of users from type (text).

3. Class_ number: number of class from type (number).

4. Speciaties_id: the foreign key of specialties table.

5. Task_id: the foreign key of specialties table.

6. The structure of specialties table.

This table contains information related to the specialties at the university. The admin can add specialties to website university application, when the teacher and teacher can view specialties to university, admin can entry to localhost to add any specialties to website application. This structure in table 6 can explain some properties. Localhost programming used to control to the system when the teacher cannot entry to localhost. The admin can entry in localhost to view some properties to users. Teacher can add any specialties to

department. The system"Specialties", its consist of 2 fields see table. 6.

Table 6. Structure of the table "Specialties"

Column Type	Data Type	Allow nulls
ID	INT	Unchecked
Name	VARCHAR 100	Unchecked

The specialties table consists of two columns in the following.

1. Specialties _ID: the primary key of Specialties table (Auto number).

2. Name: name of subject from type (text).

7. The structure of information course table.

This table contains information related to the course table at the university. Table course including many properties to how add course. The system" course ", its consist of 4 fields see table. 7.

Table 7. Structure of the table "course"

Column Type	Data Type	Allow nulls
ID	INT	Unchecked
Course _name	VARCHAR (100)	Unchecked
Speciaties_id	INT(11)	Unchecked
Year_id	INT(11)	Unchecked

The course information table consists of 4 columns in the following.

1. Id _ int: the primary key for course table from type (Auto).

2. Course _name: the foreign key for course table from type (number).

3. Speciaties_id: the foreign key for course table from type (number).

4. Year_id: year to course table.

8. The structure of mark table.

This table contains information related to the mark table at the university.

The type of marks table consists of five columns. The system"Mark", its consist of 5 fields see table. 8. The course information table consists of 5 columns in the following.

1. Mark_ Id: the primary key for mark table from type (Auto number).

2. User _Id: the foreign key of mark table from type (number).

3. Course: course to mark table.

4. Mark: marks to student.

5. Specialties _id: specialties to mark table.

Table 8. Structure of the table ”Mark"

Column Type	Data Type	Allow nulls
ID	INT	Unchecked
User _ id	INT(11)	Unchecked
Course	VARCHAR (100)	Unchecked
Mark	INT(11)	Unchecked
Specialties _ id	INT(11)	Checked

2.4. The Entity Relations Diagram for the University

Database is absolutely an integral part of software system. To fully utilize ER diagram in database engineering guarantee you to produce high quality database design to use in database creation, management and maintenance.

An entity relationship diagram ERD, also known as an entity relationship model, is a graphical representation of an information system that depicts the relationships among people, objects, places, concepts or events within that system. An ERD is a data modeling technique that can help define business processes and be used as the foundation for a relational database.

Entity relationship diagrams provide a visual starting point for database design that can also be used to help determine information system requirements throughout an organization. After a relational database is rolled out, an ERD can still serve as a referral point, should any debugging or business process reengineering be needed later. However, while an ERD can be useful for organizing data that can be represented by a relational structure, it can't sufficiently represent semi structured or unstructured data. It's also unlikely to be helpful on its own in integrating data into a preexisting information system.

The entity relationship diagram for university consists of the following entities.

Teacher stands for Teachers who work in the university, they have attributes which are the following.

1. First name.

2. Second name is the father's name of teacher.

3. Last name is the surname of teacher.

4. Address.

5. Birthday.

The relationships among teacher, Specialties, class of student and task in which the teachers know the Specialties and they teach the student and give task, help determine information system requirements throughout an organization. After a relational database is rolled out.

Specialties is the subjects that student will study, it has some attributes.

1. Name which is the subject's name.

2. Type, which is the type of subjects that will be general, scientific.

Student is represents the students who study in this university, they have some attributes.

1. First name which is the first name of student.

2. Second name is the father's name of student.

3. Last name is the surname of student.

4. Address is the student's address.

5. Birthday is the student's date of birthday.

The relationship among student, class of student and mark the students are among class of student and they will do the task then get the marks.

Class of student is the class that student will study there, it has several attributes group is the student's groups where here there are three students, class of student and task in which the teachers know the Specialties and they teach the student and give task, help determine information system requirements throughout an organization. After a relational database is rolled out, it can't sufficiently represent semi structured or unstructured data.

 groups which are A, B or C. This class contain many student each stage there are some student.

Type of class there are three types: general, scientific and literary, it has one attribute.

1. Name is the name for type of class.

Mark is the marks that student gets, it has one attribute:

1. Finale score is the final mark of student.

Task is the tasks that the teacher gives to students, it has some attributes to the following:

1. Task name is the title of the task.

2. Start date is the date that the teacher will give the task.

3. End date is the deadline for completing the task by student.

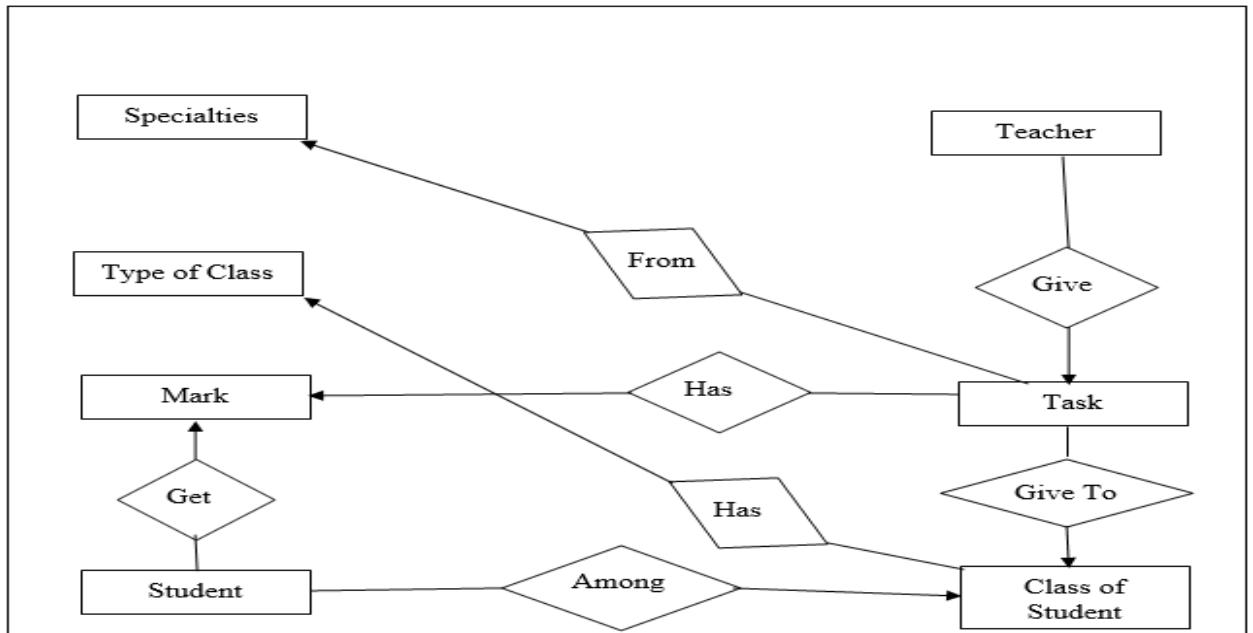The entity relationships diagram for university is shown in figure 4.

Fig. 4. Entity relationships Diagram to University

Such a diagram pictures the system at the center, with no details of its interior structure, surrounded by all its interacting systems, environments and activities. The objective of the system context diagram is to focus attention on external factors and events that should be considered in developing a complete set of systems requirements and constraints.

System context diagrams are used early in a project to get agreement on the scope under investigation. Context diagrams are typically included in a requirements document. For instance, in this entity relationship diagram there is a connection among teacher and discipline, class of student, task. While binary relationships, those between two entity sets, are by far the most common type of relationship, the E /R model allows relationships to involve any number of entity sets. Represented by rectangles, it is abstract object of some sort, and a collection of similar entities forms an entity set. An entity in some ways resembles an "object" in the sense of object oriented programming. Likewise, an entity set bears some resemblance to a class of objects. However, the E /R model is a static concept, involving the structure of data and not the operations on data.

2.5. Deplopment of interface

User interface design is the design of websites and software applications with the focus on the user's experience and interaction. The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals. The home page is the login page such as it is shown in fig. 5.

The main interface includes the following commands: (home, about us, services, links, contact us).

This page show information to the university of iraq website include many characteristics about university. There are some proprites when the user entry to website after register can see proprites in website application, student or teacher can see all information related to the university. This interface very important when the users such student or teacher entry to website application.

Fig. 5 shows the page for "Main page". The user must enter his username and password to entry to website application.

| Home | About Us | Services | Links | Contact Us |

Name of University

Logo

Main Menu

Home Page

About

Register

Information about university

Username

Password

Login

Fig. 5. Main Page

This admin page show properties works the admin such (add new group, add new class, edit class, personal information, add new specialties, add stage, logout).

Some of the advantages of the development of websites and how to ease the use of the website was designed to help the students to communicate with the college and in the admin page there are some special characteristics of the website, including how to add any division containing a group of students and each calss has its name and number to know each student in any calss.

Fig. 6 shows the page for "Admin page". The admin can to create many from properties to doing services to any users.

Home	About Us	Services	Links	Contact Us

Name of University	Logo		Main Menu
			Home page
			Add new class
			Edit class
			Personal information
			Add new specialties
			Logout
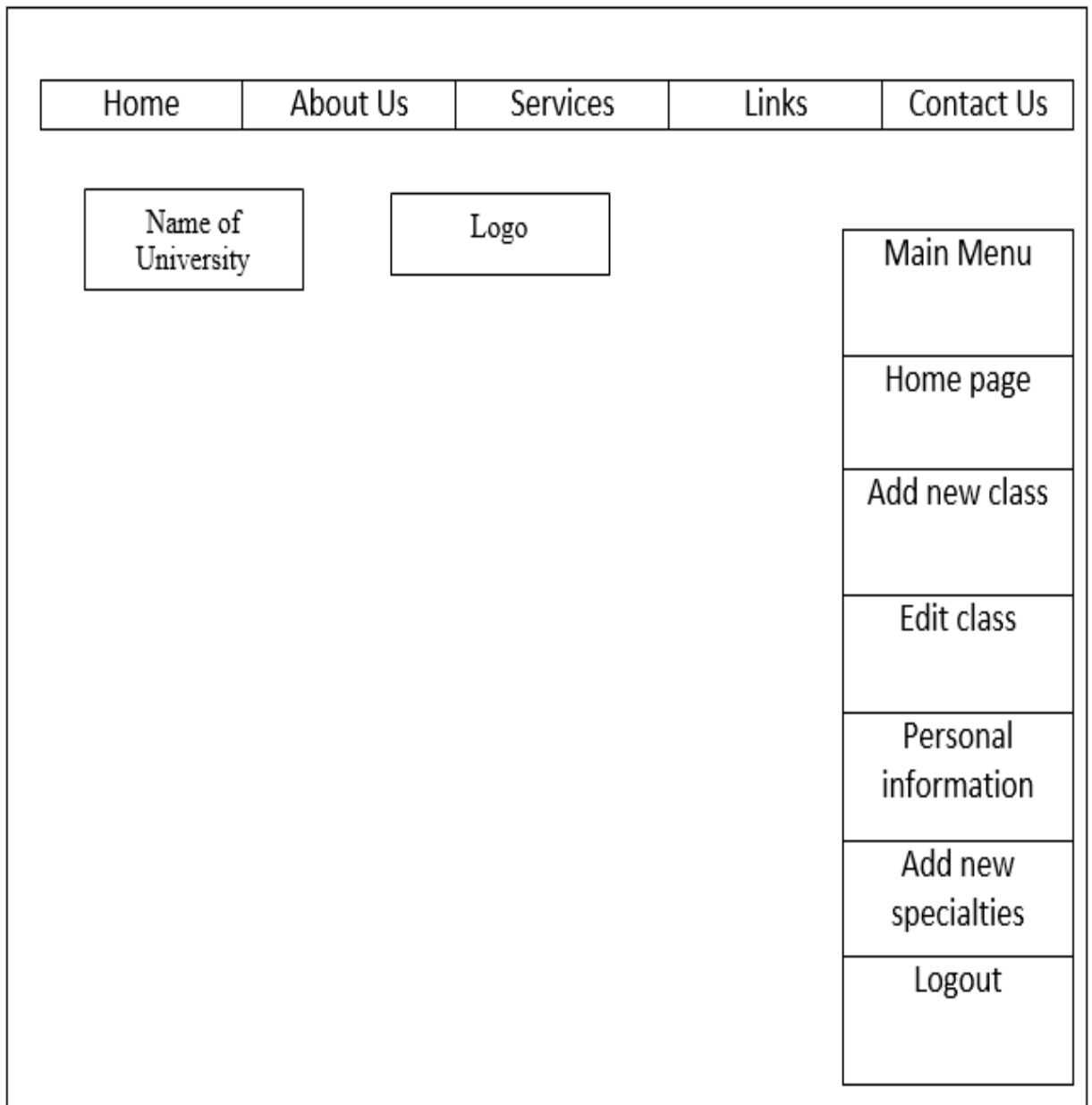
Fig. 6. Admin Page

The admin contains some of the important characteristics of the university site and contains how to add new rows to the site of the college of iraq university, which contains students with many specialties in the following form contains how to add new classes to the site of the university. Admin has some characteristics in the management of the website and how to add some necessary and important content for the development of the university. This interface very important to doing service to web application to help student when the it can doing every thing when entry to website to know any thing

Fig. 7 shows the page for "Add new class". The admin can to create many from class to student to easy process to web application.

Fig. 7. Add new class

Characteristics of teacher page

In the teacher page there are many characteristics available to the teacher to do within the university website to facilitate some of the teaching things in order to deliver interest to the student and better communications all around. The page of teacher show Properties works the teacher such (Add new task, Add marks personal information, add new course, add course information, logout). we will choose one how to enter the grades for students consisting of the student specialties and the scientific material and the special grade of the student, This feature is very important in giving grades to students and knowledge of their materials and grades on the website of the university.

Fig. 8 shows the page for "Teacher page". The teacher can to doing many easy process to web application such add mark to student, add task.

| Home | About Us | Services | Links | Contact Us |

Name of University		Logo		Home page
				Add new task
				Personal information
				Add marks
				Add new courses
				Add information course
				Logout
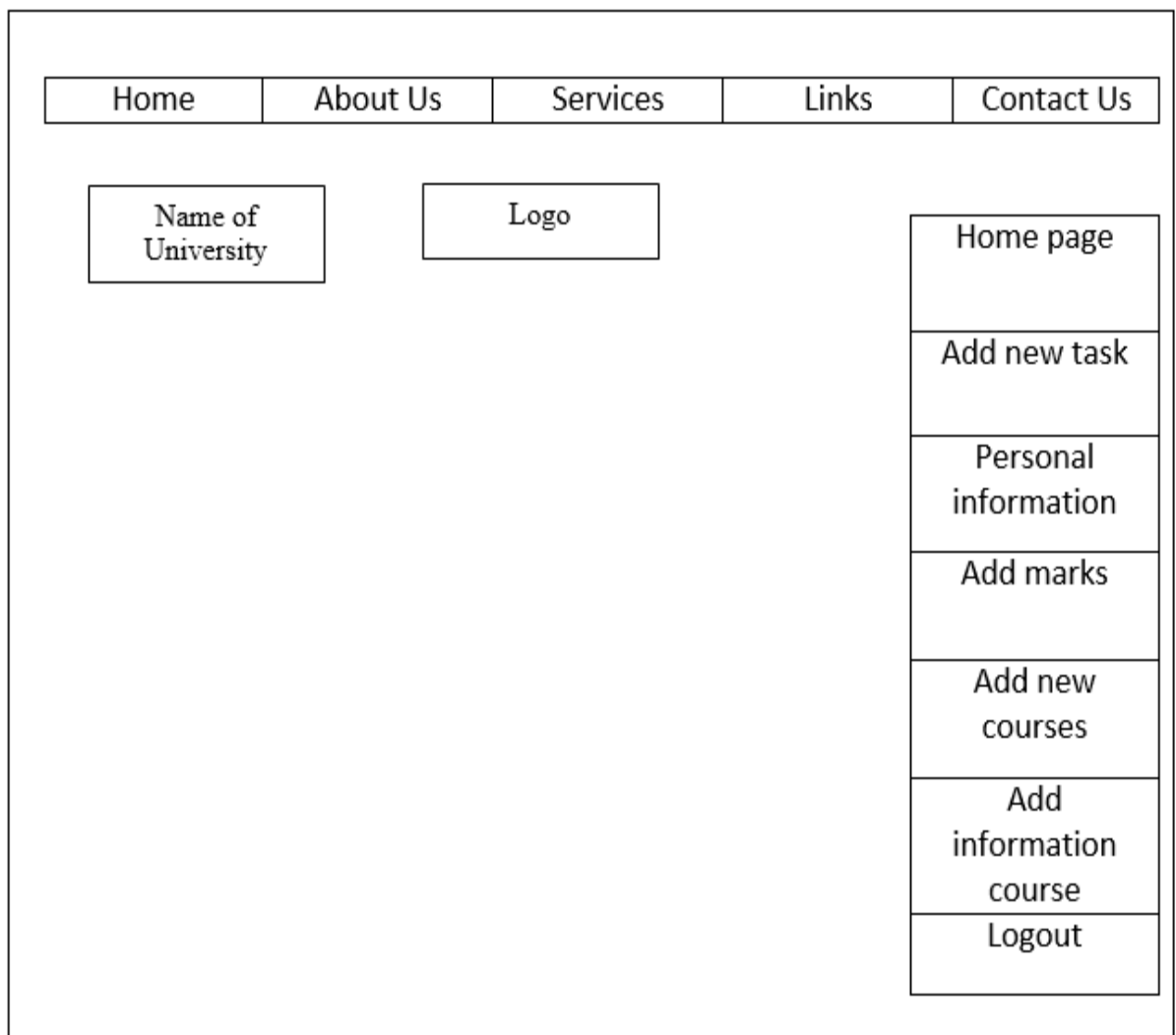
Fig. 8. Teacher Page

Fig. 9 shows the page for "Add mark". The teacher can to doing many easy process to web application such add mark to student.

Fig. 9. Add mark to student

Student page, the student page show properties works the student such (Show your marks, your group, Personal information, Logout).
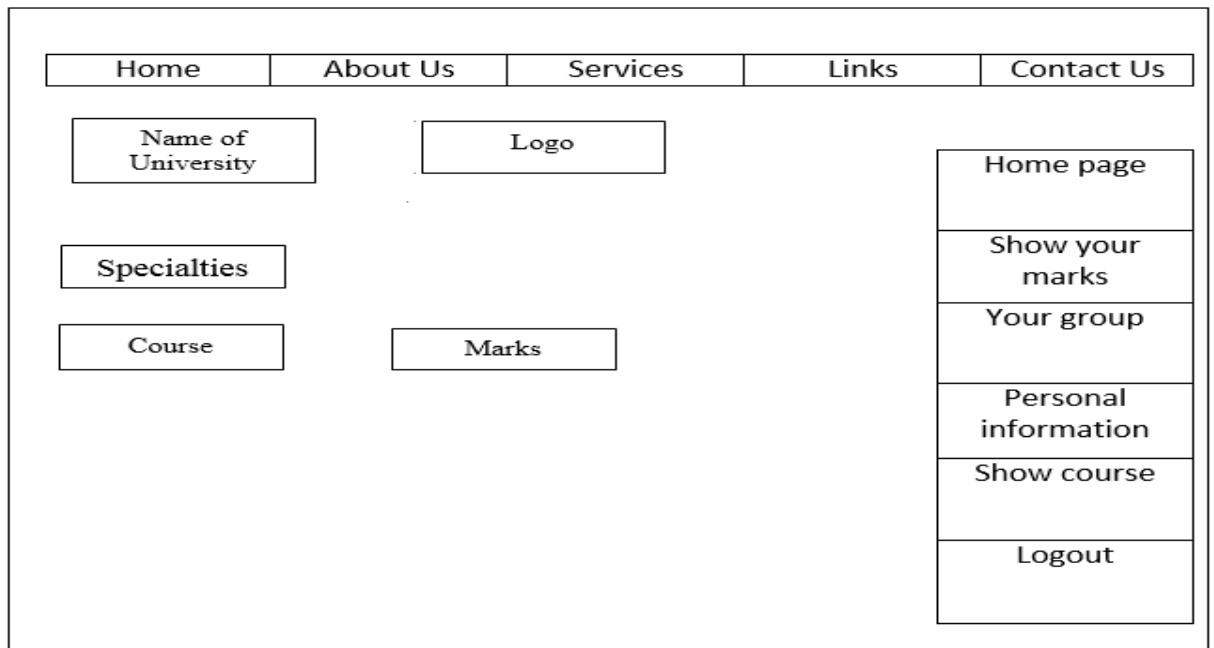
Fig. 10 shows the page for "Student page".

Fig. 10. Student page

The student page show properties works the student such show your marks, your group, personal information, logout.

Fig. 11 shows the page for "See mark".

| Home | About Us | Services | Links | Contact Us |

Name of University

Logo

Home page

Show your marks

Your group

Specialties

Course

Marks

Personal information

Show course

Logout

Fig. 11. Student see marks

Dean page properties, this dean page show Properties works the dean such information, add new teacher and student, personal information, logout.

Fig. 12 shows the page for "Dean page".

| Home | About | Services | Links | Contact Us |

Name of University

Logo

Home page

Add new teacher and

Personal information
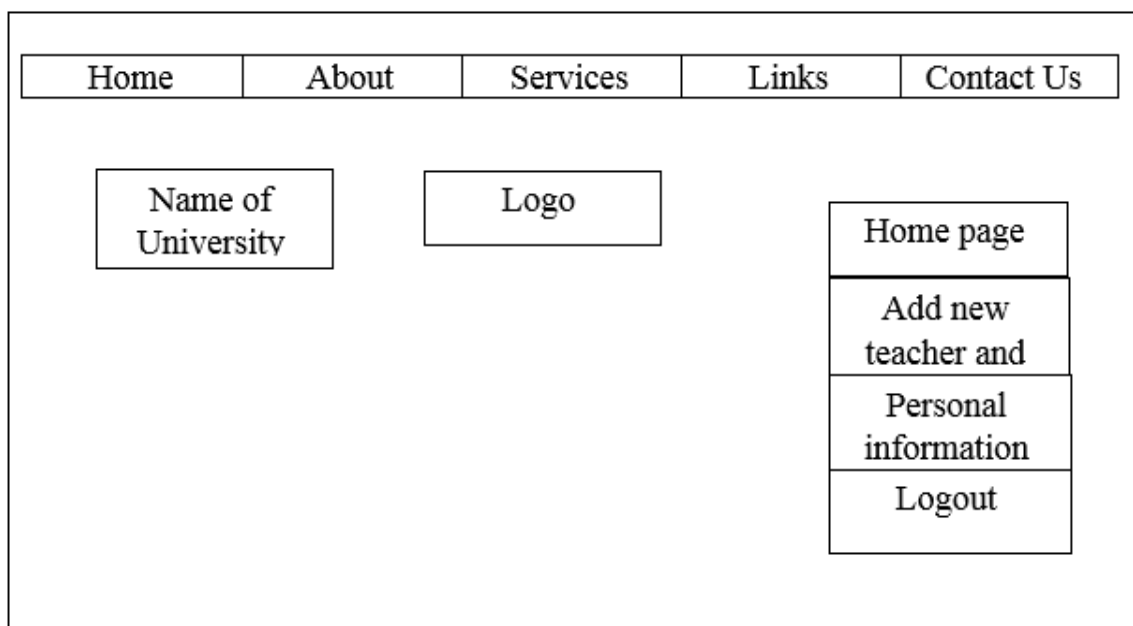
Logout

Fig. 12. Dean Page

Dean page properties. This dean page show properties works the dean such information, add new teacher and student, personal information, logout.

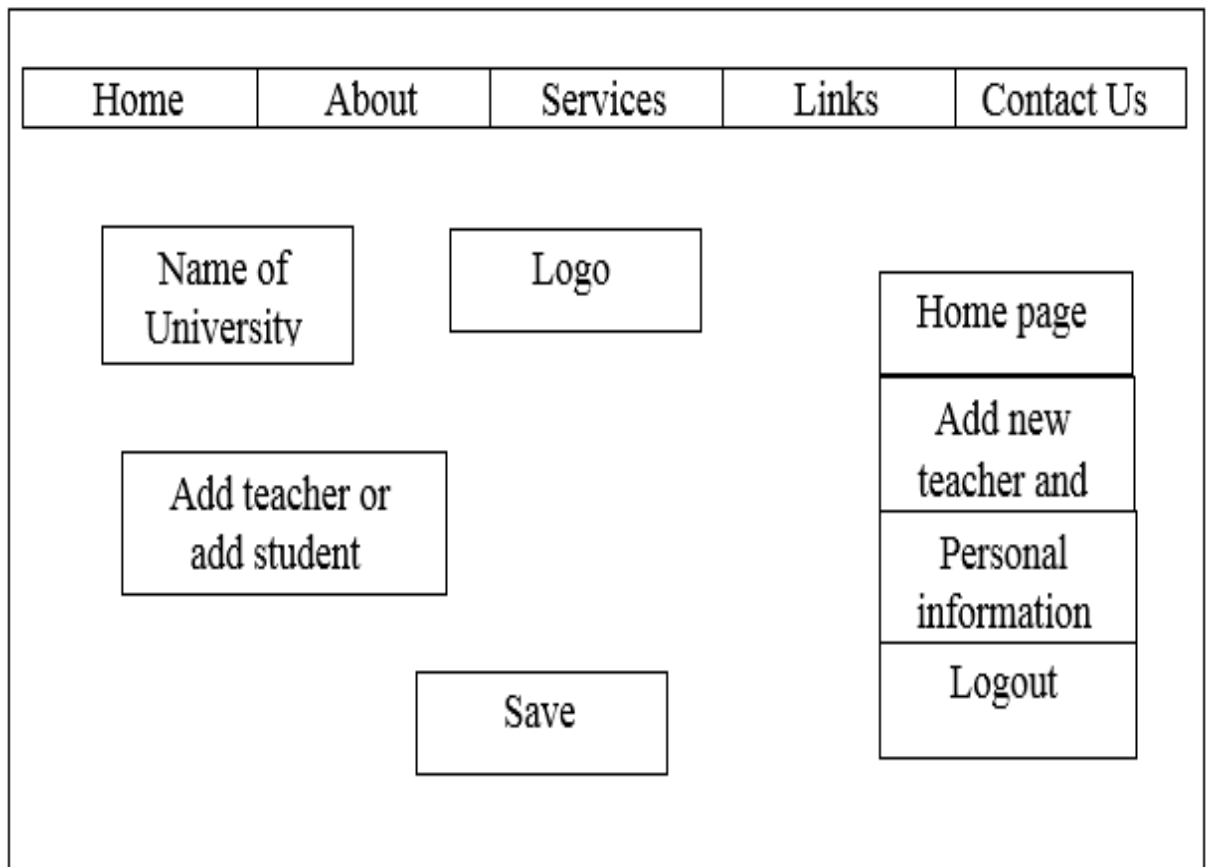Fig. 13 shows the page for "Dean can add student or teacher".

Fig. 13. Add Student or teacher

3. IMPLEMENTATION OF THE WEBSITE APPLICATION

Several fragments of PHP code

This code include information users of each user admin, teacher, student, dean to each of them to the university site and includes personal information for each user for the purpose of storing the initial information for users . The user's private information includes the first name, second name, last name, birth, and email with the addition of a personal image of the user.

Fig. 14 shows the page for "Users code".

```php
<?php
$postfirstname = $_POST['firstname'];
$postsecondname = $_POST['secondname'];
$postlastname = $_POST['lastname'];
$postaddress = $_POST['address'];
$postbirthdate = $_POST['birthdate'];
$postemail = $_POST['email'];
$postphone = $_POST['phone'];
$getiduser = $_SESSION['id'];

$target_dir = "photo/";
$target_file = $target_dir . basename($_FILES["picture"]["name"]);
$uploadOk = 1;
$imageFileType = strtolower(pathinfo($target_file,PATHINFO_EXTENSION));
// Check if image file is a actual image or fake image
$postphoto = $_FILES["picture"]["name"];
if($_POST['updateinfo']){

    $check = getimagesize($_FILES["picture"]["tmp_name"]);
   if (move_uploaded_file($_FILES["picture"]["tmp_name"], $target_file)) {
       echo "The file ". basename( $_FILES["picture"]["name"]). " has been uploaded.";
       $querynews = mysql_query("UPDATE info SET `firstname`='$postfirstname', `secondna
       if($querynews){
         echo "Update Information Ok !";
         header("Location: information.php?id=".$getiduser."");
       }else{
         echo mysql_error();
       }
   } else {
       echo "Sorry, there was an error uploading your file.";
```

Fig. 14. Users' code

This code include class to student with class numbers to students are classified according to their stages, This code is intended for students of the college of iraq university in the location of the property includes how to add the class by the teacher about adding the class to each student and also add the number of the class to divide each student in a division to distinguish some students and alphabetical page for students.

Fig. 15 shows the page for "Add class code".


```php
<?php
$postgroup = $_POST['class_group'];
$postnumber = $_POST['class_number'];
if(isset($_POST['submit'])){
    if(empty($_POST['class_group']) || empty($_POST['class_number'])){
        echo "You Must Fill All Filds";
    }else{
        $addnewclass = mysql_query("INSERT INTO `class` (`class_group`,`class_number`) VALUES ('$postgroup','$postnumber')");
        if($addnewclass){
            echo "You Have Add New Class";
            header("Refresh: 3; URL=class_add.php");
        }else{
            echo mysql_error();
        }
    }
}
```

Fig. 15. Add class code

Fig. 16 shows the page for "Add class code".


```php
<?php
$getid = $_GET['id'];
$getusers = mysql_query("SELECT * FROM users INNER JOIN info ON users.id = info.user_id WHERE info.type = 0");
?>
<table width="100%" style="border-collapse: collapse;">
  <tr style="background-color: #CDCDCD;">
    <td style="color: #011627; font-weight:bold; border: 1px solid #214E34; padding: 10px;">Username</td>
    <td style="color: #011627; font-weight:bold; border: 1px solid #214E34; padding: 10px;">Firstname</td>
    <td style="color: #011627; font-weight:bold; border: 1px solid #214E34; padding: 10px;">Lastname</td>
    <td style="color: #011627; font-weight:bold; border: 1px solid #214E34; padding: 10px;">Option</td>
  </tr>
  <?php
```

Fig. 16. Add mark to student

This code includes the teacher add the task to the students included in the page such title to material, text to write the equation, start date, end date, group name, specialties.

Fig. 17 shows the page for "Add task code".

```php
<?php
if(isset($_POST['save_task'])){
    $posttitle = $_POST['task_title'];
    $posttext = $_POST['task_text'];
    $poststartdate = $_POST['start_date'];
    $postenddate = $_POST['end_date'];
    $postgroup = $_POST['class_id'];
    $postspical = $_POST['specialties_id'];
    $posttype = $_POST['type'];


    $addtask = mysql_query("INSERT INTO task (task_title,task_text,start_date,end_date,class_id,type,specialties_id) VALUES
    ('$posttitle','$posttext','$poststartdate','$postenddate','$postgroup','$posttype','$postspical')");
        if($addtask){
            echo "You Have Add New Task";


        }else{
            echo mysql_error();

        }

}
    ?>
```

Fig. 17. Add task to student

Fig. 18 shows the page for "Add new student code".

```php
<?php
$postname = $_POST['username'];
$postpass = $_POST['password'];
$posttype = $_POST['type'];
$postactive = $_POST['active'];
if(isset($_POST['teacher'])){
    if(empty($_POST['class_group']) || empty($_POST['class_number'])){
        echo "You Must Fill All Filds";
    }else{
        $addnewclass = mysql_query("INSERT INTO `users` (`username`,`password`,`type`,`active`)
        VALUES ('$postnumber','$postpass','$posttype','$postactive')");
        if($addnewclass){
            $id = mysql_insert_id();
            mysql_query("INSERT INTO `info` (`user_id`) VALUES ('$id')");
            echo "You Have Add New teacher";
            header("Refresh: 3; URL=add_student_teacher.php");
        }else{
            echo mysql_error();

        }

    }

}
```

Fig. 18. Add new student or teacher

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This code includes the Study materials and the specialized department of the university.

Fig. 19 shows the page for "Course material code".

```php
<?php
$postspicid = $_POST['specialties_id'];
$postname = $_POST['course_name'];
if($_POST['save']){
    $selectcourses = mysql_query("SELECT * FROM `courses` WHERE course_name = $postname");
    if($selectcourses > 0 ){
        echo '<b style="color: red; font-size: 18px;">Error : This Course Is Allrady In Database ! </b>';
    }else{
        $savecourse = mysql_query("INSERT INTO courses (`specialties_id`, `course_name`) VALUES ('$postspicid','$postname')");
        if($savecourse){
            echo "<b style='color: red; font-size: 18px;'>You Have Add New Courses : ".$postname."</b>";
        }
    }
}
```

Fig. 19. Course material

Fig. 20 shows implementation of login method in "Login" controller in Area "Security".

```php
<?
session_start();
if(isset($_POST['submit'])){
    include 'inc/core/config.php';

    $username = $_POST['username'];
    $password = $_POST['password'];

    if(empty($username) || empty($password)){
        header("Location: index.php?login=empty");
    exit();
    }else{
        $sql = "SELECT * FROM users WHERE `username`='$username'";
        $result = mysql_query($sql);
        $result_check = mysql_num_rows($result);
        if($result_check < 1){
            header("Location: index.php?login=error");
            exit();

        }else{
            if($row = mysql_fetch_assoc($result)){
                $hashed = $row['password'];
                if($hashed == false){
                    header("Location: index.php?login=errorpass");
                    exit();
                }elseif($hashed == true){
                    $_SESSION['id'] = $row['id'];
                    $_SESSION['username'] = $row['username'];
                    $_SESSION['active'] = $row['active'];
                    $_SESSION['type'] = $row['type'];
                    header("Location: index.php?login=success");
                    exit();
                }
            }
        }
```

Fig. 20. Login method diagram

Fig. 21 shows the implementation of" Register code".

```php
<?php
if(isset($_POST['register'])){
    $postpassword = md5($_POST['password2']);
    $postusername = $_POST['username'];
    $posttype = 0;
    $postactive = 0;
    if($_POST['username'] > 32 ){
        echo "UserName To Much character !";
    }elseif($_POST['password1'] != $_POST['password2']){
        echo "Password Not Matche !";
    }elseif(!preg_match("/^[a-zA-Z ]*$/",$postusername)){
        echo "UserName: Must be Just character";
    }elseif(empty($postusername) || empty($postpassword)){
        echo "Password Must Not Be Empty !";
    }elseif($postpassword < 8){
        echo "Your Password Must Contain At Least 8 Characters!";
    }else{

        $result = mysql_query("INSERT INTO `users` (`username`,`password`,`type`,`active`)
        VALUES ('$postusername','$postpassword','$posttype','$postactive')");
        if($result){
            $id = mysql_insert_id();
            mysql_query("INSERT INTO `info` (`user_id`) VALUES ('$id')");
        }
    }
}
```

Fig. 21. Register code diagram

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4. TESTING OF WEBSITE APPLICATION

4.1. The used methods of testing

The used methods of testing should be based around coverage of the functionality described in the requirements, but it is common for the design document to be used as the baseline for testing because the requirements cannot be related to product. In the worst case, system tests can become large-scale repetitions of unit tests. Each test of my system contains input and output information. Therefore, we compare the actual results and the expected results. Functional system tests should be based around coverage of the functionality described in the requirements, but it is common for the design document to be used as the baseline for testing because the requirements cannot be related to the product. The system "Method of testing", its consist of 14 fields see table. 9.

Table. 9. Testing

No	Test Case	Test Steps	Expected Result	Actual Result
1.	When the user (admin)enters username and password properly	The user writes "localhost/Iraq/ login". The user enters "admin" in name. The user enters "*****" password.	Should open the admin page.	The function works correctly
2.	When the user (admin) want to add class number and the group	The user chooses the class number. The user chooses type of group.	The user can see all class number and group	The function works correctly
3.	When the user (admin) want to delete class number and the group	The user will delete the class number. The user will delete of group.	The user will see delete the class number. The user will see delete of group.	The function works correctly

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No	Test Case	Test Steps	Expected Result	Actual Result
4.	When the user (admin)wants to add personal information and add picture.	The user will insert personal information. The user will insert the picture.	The user will see The personal information. The user will see The picture.	The function works Correctly.
5.	When the user (admin)wants to add personal information and add picture	The user will insert personal information. The user will insert the picture.	The user will see The personal information. The user will see The picture.	The function works Correctly.
6.	When the user (teacher) want to add marks for every student.	The user will select specialties .The user will see add course. The user clicks on button "students". The user will "add mark".	The user will sees the page for adding mark which include (mark, course, specialties).	The function works Correctly
7.	When the user (teacher) wants to add course	The user will chooses specialties the user will insert course	The user sees all course	The function works Correctly
8.	When the user (teacher) wants to add personal information and add picture	The user will insert personal information. The user will insert the picture.	The user will see personal information .The user will see the picture.	The function works correctly

No	Test Case	Test Steps	Expected Result	Actual Result
11.	When the user(student) wants to view mark, course, specialties	The user clicks on the mark in table Mark.	The user should see page for mark that includes (the same degree, course, specialties).	The function works correctly
12.	When the user(student) Want to view task which in the website of university.	The user clicks on Button the task.	The user should view page for task	The function works Correctly.
13.	When the user (dean) want to add a new student or new teacher.	1. The user clicks on "add student". 2. The user clicks on "Add student ".	The user view for adding student or teacher	The function works Correctly.
14.	When the user (dean) want add Personal information and add picture	1. The user will insert personal information. 2. The user will insert The picture.	1. The user will see personal information. 2. The user will see The picture.	The function works Correctly.

4.2. Screenshots of the website interfaces

User interface design is the design of websites and software applications with the focus on the user experience and interaction.

The goal of the university interface design is to help students, teachers, teachers and deans to easily use the website for practical benefit and develop the study to make the study better. The University page is the login page as shown in the fig. 22. The main interface includes the following commands: home, about us, services, links and contact us. Home when you press this button, it will bring us back to the main interface from anywhere. Admin, student, teacher, dean. This enables to sign in to the program. Depending on the type of user you will be going to the desired page. The website contain about set from pages such (main home page, admin page, teacher page, student page, dean page) when the user entry to website must be enter username and password.

Fig. 22 shows of " Main Page".

Fig. 22. University page

Homepage when pressing logout button it will return us to the main interface from any place.

Admin page: This command enables manage to login to the program. When entry username and password will display window called admin page.

Fig. 23 shows of " Login page ".

Fig. 23. Login page

Admin page include some properties to manage website university page, admin has some functions to do within the website to facilitate the process of managing the website for the student and the teacher and the dean to improve the functions within the website, some properties inside admin page such add new class, edit the class, personal information, add new specialties.

Fig. 24 shows of " Admin page ".

Fig. 24. Admin page

Fig. 25 shows of ” Add new class ".

Fig. 25. Add new class

Teacher page include some properties to mange website university page , teacher has some functions to do within the website to facilitate the process of managing the website for the student improve the functions within the website , some properties inside teacher page such (add new task, student, personal information, add mark, logout).

Fig. 26 shows of ” Teacher page ".

Fig. 26. Teacher page

Fig. 27 shows of " Add mark to student ".

Fig. 27. Add mark

Fig. 28 shows of " Add task to student ".

Fig. 28. Task page

Student page include some properties in website university to view some functions to such home page ,show your mark, group, personal information, logout.

Fig. 29 shows of '' student page".

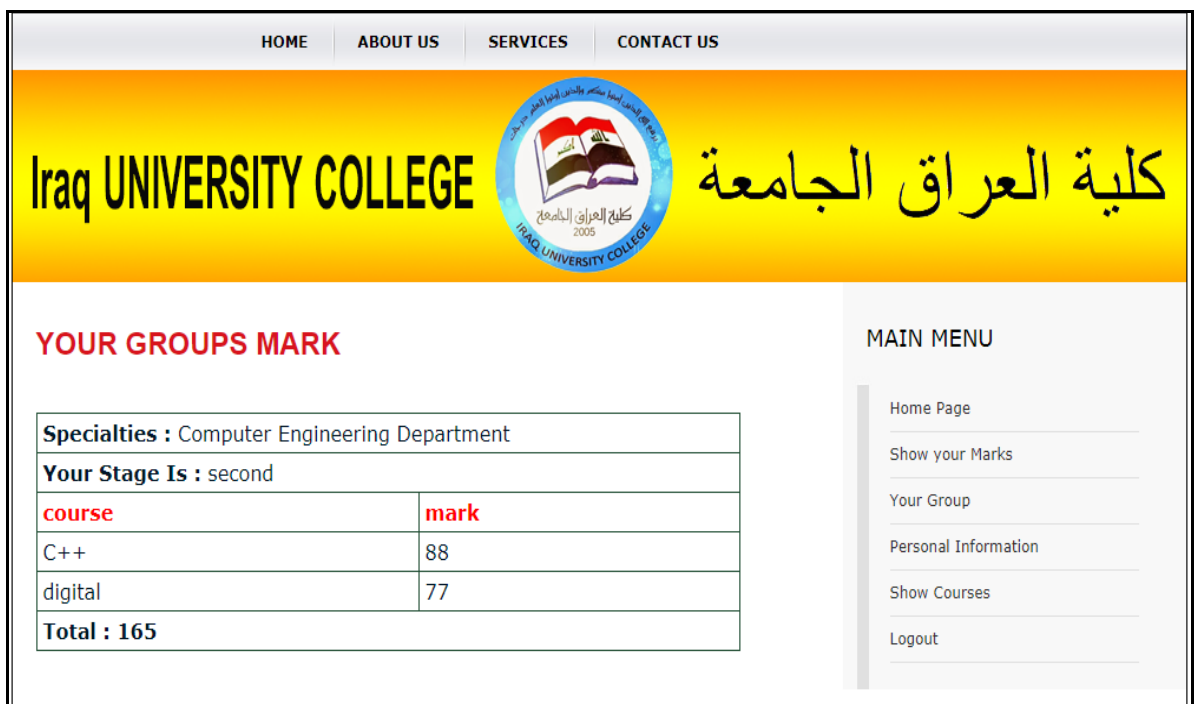Fig. 29. Student Page

Fig. 30 shows of ''See mark".

Fig. 30. Show marks

CONCLUSION

The websites of the most important modern developments and the development of the website of the college of iraq university is one of the most important, needs of the university because of its useful scientific benefit for the students so that a student. When enters the university's location has a number of characteristics, including when he wants to see grades and also the course on materials and the special section of the student. The most important programming languages were used in the design of university interfaces and some of the characteristics related to the website were developed. In general, the website was created and designed in a great way that has all the important features for each user when he enters the website is good.

Therefore, during the developing of the web application, we solved the following tasks.

1. The analysis of subject area.

2. The problem statement.

3. Comparative analysis of the content management frameworks for website development.

4. Development of website application.

4. Design the system function requirement by using use case diagram.

5. Design database scheme.

6. Several fragments of PHP code for implementing the basic functionality.

7. Functional testing.

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