DEVELOPMENT OF WEBSITE FOR HIGH SCHOOL

GRADUATE QUALIFICATION WORK
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Supervisor
Cand. Sci., Assoc. Prof.
__________ T.Yu. Makovetskaya

Author,
the student of the group CE-219
__________ A.H.E. Elias

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__________ O.N. Ivanova
“___” ____________ 2018

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TASK

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Elias Ahmed Hamid Elias
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1. **The topic** (approved by the order of the rector from 04.04.2018 No. 580)
   Development of website for high school

2. **The deadline for the completion of the work:** 01.06.2018.

3. **The source data for the work**


4. **The list of the development issues**

4.1- to study the main properties and characteristics of the websites of educational institutions, to define their tasks and functions and identify problems and seek to resolve them;

4.2- to analyze and describe the existing web sites; educational institutions; on the basis of the analysis to select and develop optimum structure of the website and comparing them;

4.3- to select best software for implementation and placement of the website from the Internet;

4.4-create structure of the website and to implement in the selected structure development tools and After studying all the problems in the websites of the previous educational institutions, we design a website that solves most of the problems of the previous sites and has the following characteristics, most sophisticated, most common; The safest and security, most easy, most compatible, Most capable of development.

5. **Issuance date of the task:** 09.02.2018.

**Supervisor**

Cand. Sci., Assoc. Prof. T.Yu. Makovetskaya

The task is taken to perform A.H.E. Elias
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INTRODUCTION

Creation of Web sites is one of the most important technologies of development of resources the Internet. The good website, containing in itself all useful information, is the best business card and business concern and educational institution, working at any time.

School website is very important for making a good first impression as it often is the first contact that people have with the school. Therefore, the school website affects the overall image and reputation of your school which can lead to increased admissions. Having a good school website is also very important for delivering a good user experience for its regular users, including teachers, students and parents. The features of a good school website, Appearance Quality content, Navigation, The right message, mobile version finally, must make it engaging where having a school website is very important, but making it a good website is what creates a good image of your school and leads to the positive user experience [16].

The Internet representation of "school Alnoojoom" is, on the one hand, just the website on the Internet, with another – representative office of official institution.

Thus, it is necessary to create and support the Internet resource which attractively will look externally and according to contents, effectively to use possibilities of a wide computer network, to perform representative functions counting on different categories of potential visitors and to play a link role with students, entrants and parents.

Professionally created website provides ease of its finding on requests in search engines as the target audience is made by users who look for specific information on the Internet. The continuous contact with school students and their parents allows to react quickly to changes of tendencies and to carry out timely correction. Besides, expenditures on advertising on the Internet are much lower, than in traditional means. The purpose of this operation is development and advance of the website "School Alnoojoom". Tasks:
1) to study the main properties and characteristics of the websites of educational institutions, to define their tasks and functions;

2) to designate audience of the website "School Alnojoom", function which it will perform; to define information component;

3) to analyze and describe the existing web sites; educational institutions; on the basis of the analysis to select and develop optimum structure of the website;

4) to select software for implementation and placement of the website from the Internet;

5) to study means of promoting and advertising of the websites for further use;

6) to create structure of the website and to implement in the selected structure development tools;

7) to develop design of the interface, elements of back coupling.

Because In Iraq most schools using the old way (manually) to support the student and their parent by information about his study such as (result, meeting, advertisement…). Therefore, they need modern way to inform them of all that using (electronic way).

**The practical significance:**

1) to illustrate the importance of modern electronic methods in schools using the website and between the traditional old method;

2) have more features where this website include features as easy administration and high security, high ability to control and development and interact with users, ability to change styles and color and themes and connect it to social media such as (Facebook, twitter ….) also can add and publish all form of data (text, audio, video and picture). in addition to easy navigation between menus and browsing the site by users;

3) This project (website) can development to using in another institutions such as (university, organization, etc. …) by changing some titles and menus with the general structure. A retention of the website, except for some additions and
modifications to the structure of the site, lists and tables, and increase susceptibility to interact with users.

**Structure of the thesis**

Structure of the thesis the thesis consists of four chapters, introduction, conclusion and reference list. In the first chapter, the problem of statement is represented and Definition of subject area Also, there is comparative analysis of analogues. In chapter Two, there is a description of functional and non-functional requirements, use case, development of the database and development of the interface. In chapter Three, we represent the development tools, characteristics of good quality code, Samples of codes that build the website Chapter Four contains the description of the (used methods of testing) functional testing of the application and Testing of the website for high school using screen form. The thesis has 53 pages; the list of references contains 20 resources.
1. THE ANALYSIS OF THE SUBJECT AREA

1.1. Problem statement

In Iraq most schools using the old way (manually) to support the student and their parent by information about his study such as (result, meeting, Advertisement….). Therefore, they need modern way to inform them of all that using (electronic way).

The traditional method (manually) has many problems such as:

1) slow;
2) cost;
3) not keeping up with the development of the current era;
4) confusion caused in work;
5) inaccurate;
6) less acceptable and cannot easily share them.

The solution to this is to design a website appropriately and integrated, this website help any school and all students in the school and their parents that they might be familiar with all aspects of the study curricula, bills, and other results, this will solve most problem that may occur because using manually way.

This website also contain all option for best manage includes: pages, menu, schedules, drop-down lists, etc.

This project will be available for web user the system will develop on open source so we can access to the system easily from anywhere & anytime and easy to navigate. this website helps any school and all students in the school and their parents that they might be familiar with all aspects of the study curricula, bills, and other results, this will solve most problem that may occur because using manually way.

This website also contains all option for best manage includes: pages, menu, schedules, srop-down lists, etc.

Characteristic of this electronic way (website):

- can create a computerized ideal management system for a school;
• the user divided into normal user brows website database and special user get result of student;
• has the capability to use feedback;
• control divided into administrator that can (add and modify all data in website) and teacher that can (add and edit mark);
• have more features where this website include features as easy administration and high security, high ability to control and development and interact with users, ability to change styles and color and themes and connect it to social media such as (Facebook, Twitter ….) also can add and publish all form of data (text, audio, video and picture). In addition to easy navigation between menus and browsing the site by users;
• this project (website) can development to using in another institutions such as (university, organization, etc. …) by Changing some titles and menus with the general structure. A retention of the website, except for some additions and modifications to the structure of the site, lists and tables, and increase susceptibility to interact with users.

Why it useful: because it have the following benefits:
• promote advertising, activities and news, which increases profits;
• reduce time by telling parents electronically about everything about their children. Because repeated review by parents of the school to see the reality of their children leads to confusion in the work. It takes a long time to explain the reality of their studies;
• delivery of results and grades of students and absence and observations to parents on a daily basis and electronically through the website. This leads to continuous access to all student activities and observations. So that if there is a problem in children can be processed in time;
• communicate and communicate with the electronic administration and answer the questions of users. Reducing costs for users rather than going to the school site to answer their complaints;
• eliminate routine manual management and reduce voltage;
• giving the dates of meetings for parents and the opening times of the sessions. And registration times for students. Holidays and events;
• the possibility to add, delete and modify the student data easily by the management of the website through the information provided by the school administration and teachers and parents of students without complicating.

1.2. Definition of subject area

The educational system in Iraq contains many details that must be taken into account in terms of administrative structure, human resources, student affairs, study materials, grade distribution systems, exams and the need to find a new way in which the student and the guardian can see the details of the student as soon as possible. and in a way that maintains the privacy of information related to the student with high accuracy and therefore the most appropriate way is the design of an integrated site. when designing the site we took into account all the details of educational system (primary, intermediate and secondary education). In Iraq most schools and universities are governmental, rarely there are private schools. After 2003, private schools and universities spread widely in all Iraqi governorates and achieved outstanding acceptance by the students and the government, Private schools operate according to government law and are subject to their instructions, but differ from the fact that the student's guardian pays tuition fees in return for teaching his children, unlike government schools that are free

The Educational system in Iraq includes:
• Primary stage
• Intermediate stage
• Secondary stage

But we will focus on the intermediate and secondary stages because they interest us in this research:
**Intermediate stage**

It is after the primary stage and consists of 3 stages (the first average, the second, the average third) and divided into 3 chapters every two months. This chapter summarizes the existence of the exemption decision for the first and second grades where the student cannot test the material taken over 90 The first semester and half of the year (this course was canceled in 2014),

in the first class the materials are increased, where the science is divided into three (chemistry, physics, biology and french language) in addition to computer materials, national education, history, geography, family and French (for the distinguished) and on each 100 degree material where the total 1400 degrees, while in the third row, the exemption decision does not include students because it is a completed stage and a ministerial examination on the student to take a good rate to be able to continue and enter the preparatory stage where the new exemption decision is that the student rate of 85 degrees and be the lowest grade in certificate 75.

in the academic year 2012-2013 The decision of the general exemption of the intermediate and preparatory stages was canceled by the opinion authority in the ministry of Education and approved the exemption of the individual, but this decision did not find acceptance in the Iraqi street has been rejected by students and their parents and schools, To be reinstated by the ministry of education return work with it in the period academic year 2013-2014 for the intermediate and junior stages.

In the 2015-2016 school year, the system of courses for the unfinished stages (first average and second average) was approved after the system achieved a great success for the fourth grade. The grade includes 40 degrees divided into 20 grades per month (two months) and 60 degrees combined with grade which is called "end of Course". The exemption regime was also abolished in the same year. Currently the class includes 50 divided into 25 degrees per month (two months). And another 50 degrees combined with the previous degree and called "by the end of the course" [2, 15, 17].
Secondary stage

In the third grade after the end of the intermediate stage, the student chooses either the scientific or literary study and there are two branches in the scientific study where the student begins to specialize in the fifth grade, either the whole study Scientific science or applied scientific study and increase the subjects in which the expansion of science, mathematics and english. followed by the sixth grade, which is considered the most important stage in education and the most important stage in the life of the human being as its fate determines at the end of the year ministerial examinations for the student examination and the rate achieved by it determines the college or university in which he is studying. The graduate of the literary study can enroll in colleges and institutes of education and literature and other graduate studies of biological sciences can choose between medical specialties, pharmacy, science and veterinary science or applied scientific leads to the faculties of engineering and the various faculties of science such as earth sciences and others In the fourth grade, the material expanded in 2011 and became difficult for the weak or average student and became some english subjects in addition to the existence of other branches that the student can study after the intermediate stage, namely vocational education (industrial and commercial), agricultural branch, nursing and Islamic studies, Has been widely accepted by students in recent years and the results of excellence in addition to the Institute of Fine Arts and applied [5, 15, 17].

1.3. Comparative analysis of analogues

I want to develop a web-site for high school the model we designed on the website solves all the problems raised in the models we will mention. There are many sites of school in Iraq but most have flaws and problems as described in some examples:

For example fig. 1 shows the web site of altafawuq for girl school which does not provide sufficient information about the school as well as its lack of student services and it is also non-interactive [3].
Fig. 1. Altafawuq for girl school

Fig. 2 shows the web site of Almakased School which does not maintain the privacy of student-related information, it publishes all the student's findings and information on the home page [2].

Fig. 2. Almakased School
Fig. 3 shows the web site of Ninova School which its problem is that it does not fit well with mobile devices and tablet devices [13].

![Ninova School](image1)

**Fig. 3. Ninova School**

Fig. 4 shows the web site of Dar - Almaref School which its problem is secured by one secret code which makes it easy to penetrate [4].

![Dar - Almaref School](image2)

**Fig. 4. Dar - Almaref School**
2. DEVELOPMENT OF A SITE
2.1. Functional and non-functional requirements

The problem statement defined the following functional requirements.

The system must do the following:

- work with four types of users: administrator, teacher, special user and the normal user;
- have ability to development and must be flexible and scalable and make modifications and additions and work with other systems and programs;
- show all data that can useful by users;
- have ability to work with different internet browser and different operating;
- have high degree security and robustness.

The features that are available for administrator:

1) can modify all data in web site by enter and register in page of management in website by using email and password that supported him by programmer And to issue instructions to the site programmer to make changes to the website and to suit the development of work;

2) see information about all students and school staff;
3) add information about all students and School staff and school;
4) delete information from students and school staff and school;
5) search any information about students and school staff and school;
6) receive reports on (get amount of students, get gender of students, get any information about students and School staff and school;
7) correct information about all students and School staff and school;
8) print information about all students or in thing in website.
9) modify permission of each special user and teacher and the normal user and add or delete one of this type of users or other users;
10) support special user (parent of student) by email and password for able to get detail of student (result, absence, advertising) and teacher to be able add and edit mark of student;
11) authorize the users;
12) has the powers and functions of all other types of users.

The features that are available for a teacher:
- add and edit mark by using email and password that supported to him by administrator.

The features that are available for a special user (parent of student):
1) brows all thing at the general form of website;
2) get detail of student (result, absence, advertising) by using email and password that supported to him by administrator.

The features that are available for a normal user (any person):
- brows all thing at the general form of website.

This application must contain the following basic functions requirements:
1) the site must contain all the requirements of the school to publish news, photos, announcements, communications, school activities and events, Parents meeting dates;
2) the possibility of modification;
3) ability to inform the parent about student information such as result, absence, student offenses and insurance premiums, ads using a specific username and password;
4) most importantly that all data in website must be safe and non-able to hacked, where the privacy and personal information of the user is maintained;
5) as well as the potential for future development.

Non-functional requirements
This application contains the following basic non-functions require- ments:
1) using this web application is only available when there is internet connection;
2) this web application is compatible with almost all browsers like microsoft edge, google chrome, Mozilla Firefox and internet explorer that’s run on different devices.
2.2. Use case diagram

The use case diagram show eight use case with the type of user (normal user, special user, teacher, and administrator) represents as actors, these actors connected with this use case by relationship to show the capability for each user in the system [18], see fig. 5.

Fig. 5. Use case diagram

- the normal users(any person that browse the website) who enter to the website and get data that limited by administer(main page)
- the special users (student or his parent) can get detail of student (mark) premiums, student status) after enter the user name and password that specified to him by administrator;
- the administrator users (administrator of website) can (add and edit) all thing in website after enter the page for administrator by (enter user name and password that specified to him by programmer);
- the teacher users (teachers of school) can (add and edit the mark of student) after enter (user name and password that specified to him by administrator).
2.3. Development of the database

There is no doubt that modern technologies are rooted in all aspects of life. In the area of communicating information to beneficiaries, websites have the most recent advertising and advertising role, so we have sought to develop a typical site that has all the features that serve the student and solve the problems and defects found in the previous sites.

SQL Server is a relational database management system developed by Microsoft. As a database server, it is a software product with the primary function of storing and retrieving data as requested by other software applications, which may run either on the same computer or on another computer across a network (including the Internet) [11].

We decided to specify the following tables of the database:

1) the table for the student information contain all personal information and identification papers of the student;

2) the class rooms that contain the details of the classroom in the structure of the site like classroom id, classroom year, classroom number, classroom stage description, classroom status and classroom teacher id;

3) the premium table that contain the following (id, number of student id, classroom id, paid premium, total premium, remaining premium, last paid date, premium description);

4) the student classroom status table that contain the following (id, status id, classroom id, student status, student status);

5) the student degree table that contain all that relates to the student's grades from the beginning of the academic year to the end of the academic year;

6) the subject information table that contain the following: subject id, subject name, subject stage, subject teacher id;

7) the teacher table that contain the following (teacher id, teacher name, teacher email, teacher phone, teacher date of birth, teacher password, teacher status, permission, image URL);
8) the table for the file manager that contain the following (file manager id, original file name, file upload date, uploaded by);

9) the gallery table that contain the following (gallery id, image name, image title, image date, image description, uploaded by);

10) the manager table that contain the following (id, name, user name, password, email, phone, permission);

11) the news table that contain the following (id, title, date, enter by, news contain, image URL, type, activation, to stage).

The scheme of the database is shown in the fig. 6. It consists of 11 tables, described below.

![Database Scheme Diagram]

Fig. 6. The scheme of the database
The table for class rooms that contain the details of the classroom in the structure of the site, it consists of 6 fields as in the fig. 7.

![Fig. 7. Structure of the table “class rooms”](image)

The table for the file manager that contain the detail of the file will be uploaded by the manager of the website, it consists of 5 fields as in the fig. 8.

![Fig. 8. Structure of the table “file manager”](image)

The gallery table that contain the detail of image will be uploaded to the website.

![Fig. 9. Structure of the table “gallery”](image)
The manager table that contain the detail of the user name and password that the site manager will use to access the site and his permissions. It consists of 7 fields as in the fig. 10.

<table>
<thead>
<tr>
<th>Name</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>int</td>
</tr>
<tr>
<td>name</td>
<td>nvarchar(50)</td>
</tr>
<tr>
<td>username</td>
<td>nvarchar(50)</td>
</tr>
<tr>
<td>password</td>
<td><strong>encoded</strong></td>
</tr>
<tr>
<td>email</td>
<td>nvarchar(100)</td>
</tr>
<tr>
<td>phone</td>
<td>bigint</td>
</tr>
<tr>
<td>perm</td>
<td>varchar(10)</td>
</tr>
</tbody>
</table>

Fig. 10. Structure of the table “manager”

The news table that contain the detail of the news that will added to the site. It consists of 9 fields as in the fig.11.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>bigint</td>
</tr>
<tr>
<td>title</td>
<td>nvarchar(150)</td>
</tr>
<tr>
<td>date</td>
<td>varchar(12)</td>
</tr>
<tr>
<td>enterBy</td>
<td>varchar(100)</td>
</tr>
<tr>
<td>newsCont</td>
<td>text</td>
</tr>
<tr>
<td>imageUrl</td>
<td>nvarchar(300)</td>
</tr>
<tr>
<td>type</td>
<td>tinyint</td>
</tr>
<tr>
<td>activation</td>
<td>tinyint</td>
</tr>
<tr>
<td>to_stage</td>
<td>tinyint</td>
</tr>
</tbody>
</table>

Fig. 11. Structure of the table “news”

The premium table that contain the detail of Includes all related with premium tuition fees for students. It consists of 9 fields as in the fig. 12.

<table>
<thead>
<tr>
<th>Name</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>bigint</td>
</tr>
<tr>
<td>No_Wasl</td>
<td>int</td>
</tr>
<tr>
<td>stud_id</td>
<td>bigint</td>
</tr>
<tr>
<td>classroom_id</td>
<td>int</td>
</tr>
<tr>
<td>paid_premium</td>
<td>int</td>
</tr>
<tr>
<td>total_premium</td>
<td>int</td>
</tr>
<tr>
<td>remaining_premium</td>
<td>int</td>
</tr>
<tr>
<td>last_paid_date</td>
<td>varchar(12)</td>
</tr>
<tr>
<td>premium_description</td>
<td>nvarchar(50)</td>
</tr>
</tbody>
</table>

Fig. 12. Structure of the table “premium”
The student classroom status table that connect between contain of student table and classroom table. It consists of 5 fields as in the fig. 13.

<table>
<thead>
<tr>
<th>Name</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>bigint</td>
</tr>
<tr>
<td>stud_id</td>
<td>bigint</td>
</tr>
<tr>
<td>classroomid</td>
<td>int</td>
</tr>
<tr>
<td>stud_status</td>
<td>varchar(20)</td>
</tr>
<tr>
<td>stud_status_desc</td>
<td>nvarchar(2000)</td>
</tr>
</tbody>
</table>

Fig. 13. Structure of the table “student classroom status”

the student degree table that contain (all that relates to the student's grades from the beginning of the academic year to the end of the academic year) where there are two semester each semester include 3 month and each month include two exam and one average As a result, we combine the outputs of the first and second semesters average and get a score of 50%. The final exam of 50% also combines the two grades to obtain the final grade, it consists of 26 fields as in the fig. 14.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>degree_id</td>
<td>bigint</td>
</tr>
<tr>
<td>subj_id</td>
<td>bigint</td>
</tr>
<tr>
<td>classroom_id</td>
<td>int</td>
</tr>
<tr>
<td>firstSems_sh1_shefahy</td>
<td>int</td>
</tr>
<tr>
<td>firstSems_sh1_tahreya</td>
<td>int</td>
</tr>
<tr>
<td>firstSems_sh1_averag</td>
<td>int</td>
</tr>
<tr>
<td>firstSems_sh2_shefahy</td>
<td>int</td>
</tr>
<tr>
<td>firstSems_sh2_tahreya</td>
<td>int</td>
</tr>
<tr>
<td>firstSems_sh2_averag</td>
<td>int</td>
</tr>
<tr>
<td>firstSems_sh3_shefahy</td>
<td>int</td>
</tr>
<tr>
<td>firstSems_sh3_tahreya</td>
<td>int</td>
</tr>
<tr>
<td>firstSems_sh3_averag</td>
<td>int</td>
</tr>
<tr>
<td>firstSems_averag</td>
<td>int</td>
</tr>
<tr>
<td>secondSems_sh1_shefahy</td>
<td>int</td>
</tr>
<tr>
<td>secondSems_sh1_tahreya</td>
<td>int</td>
</tr>
<tr>
<td>secondSems_sh1_averag</td>
<td>int</td>
</tr>
<tr>
<td>secondSems_sh2_shefahy</td>
<td>int</td>
</tr>
<tr>
<td>secondSems_sh2_tahreya</td>
<td>int</td>
</tr>
<tr>
<td>secondSems_sh2_averag</td>
<td>int</td>
</tr>
<tr>
<td>secondSems_sh3_shefahy</td>
<td>int</td>
</tr>
<tr>
<td>secondSems_sh3_tahreya</td>
<td>int</td>
</tr>
<tr>
<td>secondSems_sh3_averag</td>
<td>int</td>
</tr>
<tr>
<td>secondSems_averag</td>
<td>int</td>
</tr>
<tr>
<td>total_Avg</td>
<td>int</td>
</tr>
<tr>
<td>final_exam</td>
<td>int</td>
</tr>
<tr>
<td>final_degree</td>
<td>int</td>
</tr>
</tbody>
</table>

Fig. 14. Structure of the table “student degree”
The student information table that contain (All personal information and identification papers of the student), It consists of 3 fields as in the fig. 15.

![Table](image1)

Fig. 15. Structure of the table “student information”

The subject information table that contain details of the subjects, it consists of 4 fields as in the fig. 16.

![Table](image2)

Fig. 16. Structure of the table “subject information”
The teacher table that contain all details of the teachers. It consists of 9 fields as in the fig. 17.

<table>
<thead>
<tr>
<th>Name</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>teacher_id</td>
<td>int</td>
</tr>
<tr>
<td>teacher_name</td>
<td>nvarchar(50)</td>
</tr>
<tr>
<td>teacher_email</td>
<td>nvarchar(50)</td>
</tr>
<tr>
<td>teacher_phone</td>
<td>decimal(12,0)</td>
</tr>
<tr>
<td>teacher_dob</td>
<td>nvarchar(12)</td>
</tr>
<tr>
<td>teacher_password</td>
<td>nvarchar(50)</td>
</tr>
<tr>
<td>teacher_status</td>
<td>bit</td>
</tr>
<tr>
<td>permission</td>
<td>varchar(10)</td>
</tr>
<tr>
<td>imgURL</td>
<td>nvarchar(50)</td>
</tr>
</tbody>
</table>

Fig. 17. Structure of the table “teacher”

2.4. Development of the interface

Providing a successful web application is required a good user interface, UI design can make or break the success of your website or application in web design, great user interface, or UI design, is all about helping the user to accomplish a given task as simply and efficiently as possible [9], Below are some samples included in the design

The normal users who visit the website can read and get all data about the high school that limited by administrator, by press the different buttons in the website page ass shown in figure 18 below:

Fig. 18. The home page
The page for administrator enter:

![Login page](image)

**Fig. 19.** The page for administrator enter

The web site contain 6 section after entered as administrator as shown below in fig. 20.

<table>
<thead>
<tr>
<th>Student degree</th>
<th>Registration &amp; Premiums</th>
<th>Class &amp; Subjects</th>
<th>Teacher</th>
<th>News</th>
<th>Home</th>
</tr>
</thead>
</table>

**Fig. 20.** The web site contain after enter as administrator

**The features that are available for administrator:**

1) can modify all data in web site by enter and register in page of management in website by using email and password that supported him by programmer and to issue instructions to the site programmer to make changes to the website and to suit the development of work;

2) see information about all students and school staff;

3) add information about all students and school staff and school;

4) delete information from students and school staff and school;

5) search any information about students and school staff and school;

6) receive reports on (get amount of students, get gender of students, get any information about students and School staff and school;
7) correct information about all students and School staff and school;
8) Print information about all students or in thing in website.

In the fig. 21 below you can see how edit news or advertise.

![Fig. 21. Edit news or advertise](image)

Delete or edit teacher information as shown in the fig. 22 below.

![Fig. 22. Delete or edit teacher information](image)
Change password of the teacher as shown in the fig. 23 below.

Fig. 23. Change password of the teacher

Registration and premium that contain add student as shown in the fig. 24 below.

Fig. 24. Add student
If student or his parent want to enter to view his result and status he can use user name and password that specified to him by administrator by press to result of student icon then enter to this panel in the fig. 25 below.

![Parent Login Panel](image)

**Fig. 25. Panel for login student or his parent**

After enter student or his parent will appear this panel that contain result and student status Page for print in the fig. 26 below.

![Student Result and Status](image)

**Fig. 26. Page for print Result and student status**
Page for contact details modification in the fig. 27 below.

<table>
<thead>
<tr>
<th>Contact</th>
<th>Result of students</th>
<th>News and advertising</th>
<th>School image</th>
<th>Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last update See all ads +</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Contact information**

You can contact through the following information and you will be answered school email

**Email**

info@anojom

**Location**

Najaf Alashraf

**Speed dialing**

Name:

Email:

Subject:

Massage:

Fig. 27. Page for contact details modification
3. IMPLEMENTATION OF WEBSITE

3.1. Development tools

the reason for choosing these programs in a research project is that these programs are:

- the most sophisticated;
- the most common;
- the safest and security;
- the most easy;
- the most compatible;
- most capable of development.

The important programs or tools used are the following.

- ASP.NET. Project type, this project is about developing a website system for high school application by utilizing “ASP.NET MVC” which has a lot of features and them separation of application tasks (input logic, business logic, and UI logic), testability, and test-driven development (TDD). All core contracts in the MVC framework are interface-based and can be tested by using mock objects, which are simulated objects that imitate the behavior of actual objects in the application. You can unit-test the application without having to run the controllers in an ASP.NET process, which makes unit testing fast and flexible. You can use any unit-testing framework that is compatible with the .NET framework [6].

- Visual Studio. Visual Studio is development environment consist of tools used for building “ASP.NET MVC” Web applications [19].

- C#. C# being a .NET language, it supports language interoperability, i.e. C# can access code written in any .NET compliant language and can also inherit the classes written in these languages [1].

- JavaScript. Can be used on client side as well as on server side as JavaScript has access to document object model of browser, you can actually change the structure of web pages at runtime. Du JavaScript can be used to add
different effects to webpages. On the other hand, JavaScript could be used on the server side as well [7].

- HTML. This language have feature web workers this feature enables a web application to execute complex tasks independently without interfering with the performance of a webpage in real-time [14].

- SQL Server. SQL Server 2016 is the latest addition to Microsoft’s data platform, it is database management system with a variety of new features and enhancements that deliver breakthrough performance, advanced security, and richer, integrated reporting and analytics capabilities. Built using the new rapid-release model, SQL Server 2016 incorporates many features introduced [12]:

  1) Query Store: The Query Store feature allows administrators or developers to identify queries that take longer time for execution and replace them from other substitute queries. this special feature is configured at the individual database level in SQL Server;

  2) Dynamic Data Masking (DDM): Dynamic Data Masking. Especially in the Business Intelligence World or when it comes to reporting or data analytics you often need to anonymize data and don’t report on personal information. This new feature helps here;

  3) JSON Support: SQL Server 2016 also supports the lingua franca of Web applications: Java Script Object Notation (JSON). It provides the ability to quickly move JSON data into tables;

  4) Stretch Database: “Stretch Database” is a hybrid feature introduced in SQL server in an attempt to reduce the storage and processing costs. A Stretch Database feature provides you a method to stretch the storage of your On-Premise database to Azure SQL Database;

  5) Row Level Security: The row-level security (RLS) feature restricts which users can view what data in a table, based on a function. This feature is useful in multi-tenant environments where the user may want to limit data access based on customer ID;
3.2. Characteristics of good quality code

Within our system, I built the design for web-pages, some of which are simple and others are rather complex. Many of them duplicate each other.

I trying to create and use Good quality code where it mean code that is clear, simple and concise that can be fully maintained which is efficient. There are many things that can make your code of good quality such as correctness, no DRY (Don’t Repeat Yourself), simple, a proper algorithm with unambiguous steps, concise, clear and elegant and finally it performs.

Some of the much more important things that make code of good quality, which are the ones that I’m going to cover, are efficiency, robustness, usability and portability [10]:

1) efficiency: It is always good to make sure you keep your code efficient. Efficiency of code covers a variety of things such as the reliability and speed;

2) portability: portability in terms of good quality code is when we can code across different systems and operating systems. a program should be portable because if a program was developed for a client and it could only be used on particular devices or operating systems then it would have an effect on the way that the client/company uses the system. a good example of a programming language is Java because that can be used on any device which shows it is portable;

3) maintainability: whenever a program is developed, is should definitely be maintainable. Whenever someone uses a program, it is possible that there could be bugs that weren’t identified during the testing stage of development so it is important for these bugs to be fixed. The program is also going to require updates in order to improve the program’s functionality. Maintenance of the program is made better and easier if the program has things like comments and suitable variable names. This improves the readability of code which makes it much easier to identify errors and also improves the maintainability of the code.
3.3. Samples of codes

Below are some code samples included in the design.

Administrator and teacher enter (fig. 28) show the function code for the administrator enter to the system by enter his information "username", and "password", and function for the teacher enter to the to the teacher panel by enter his information "Username", and "password" also.

```java
protected void btnLogin_Click(object sender, EventArgs e)
{
    SqlConnection connection = new SqlConnection();
    connection.Open();
    SqlCommand command = new SqlCommand("SELECT * FROM Users WHERE Username = @Username AND Password = @Password", connection);
    command.Parameters.AddWithValue("@Username", username);
    command.Parameters.AddWithValue("@Password", password);
    SqlDataReader reader = command.ExecuteReader();
    if (reader.Read())
    {
        MessageBox.Show("Login Successful!" , "Login Result");
    }
    else
    {
        MessageBox.Show("Login Failed. Please try again!" , "Login Failed!");
    }
}
```

Fig. 28. The page for administrator and teacher enter

Update news (fig. 29) show the function code for update news in website.

```java
protected void btnUpdate_Click(object sender, EventArgs e)
{
    int active = 0;
    int type = 0;
    if (chkUpdate.Checked)
    {
        active = 1;
    }
    else if (radUpdateChars.Checked)
    {
        if (chkUpdate.Checked)
        {
            type = 2;
        }
        else if (radUpdateItems.Checked)
        {
            type = 1;
        }
    }
    if (txtEditTitle.Text == "" || txtEditDate.Text == "" || txtEditBy.Text == "" || txtEditCont.Text == "" || txtEditImg.Value == "" || type == 0)
    {
        MessageBox.Show("Please fill in all required fields."");
    }
    else
    {
        loginnodb update = new loginnodb("alm\n", "news");
        commentsorter = new commentsorter.StandardCleaner();
        update.editinfo(string.Format("update news SET title = '{0}', date = '{1}', entryby = '{2}', newscont = '{3}', imageurl = '{4}', type = '{5}', activation = '{6}'"),
```

Fig. 29. Update news
Delete or edit teacher image (fig. 30) show the function code for delete teacher image in website.

```csharp
/////// Delete Img
public void deleteImage(string txtString)
{
    var fullPath = Server.MapPath("teacher_img/" + txtString);
    if (File.Exists(fullPath))
    {
        File.Delete(fullPath);
        ShowMessage("Image successfully deleted");
        teach_img.ImageUrl = "";
        teach_img.Visible = false;
        imgbtnDel.Visible = false;
        hFImgUrl1.Text = "";
    }
    else
    {
        ShowMessage("Could not find this image");
    }
}
```

Fig. 30. delete or edit teacher image in website

Change password of the teacher (fig. 31) show the function code for Change password of teacher.

```csharp
protected void ChangePasswordPushButton_Click(object sender, EventArgs e)
{
    lblError.Text = "";
    lblSuccesses.Text = "";
    loginAndDb changePass = new loginAndDb("alnojom", "teachers");
}
```

Fig. 31. Change password of the teacher
Add student (fig. 32) show the function code for add student in website.

```
protected void btnReg_Click(object sender, EventArgs e)
{
    int activeStudentClass = 0;
    loginAndDb insertComm = new loginAndDb("alnojom", "stud_info");
    SwapInjuction cleanInjection = new SwapInjuction();
    string[] retSel = insertComm.SelectMethod("(SELECT d.stud_name, d.stud_password FROM stud_info d where d.stud_username = '')");
    if (retSel.Length > 0)
    {
        showMessage("The username & password is already entered.");
    }
    else
    {
        insertComm.updateInfo(String.Format("(INSERT INTO stud_classroom_status VALUES(UPDAT MAX(10) FROM stud_file).([0],[1],[2]))");
    }
}
```

Fig. 32. Add student

Parent or student login (fig.33) show the function code for student login by enter his information "Username", and "password" that specified to you by administrator.

```
protected void btnLogin_Click(object sender, EventArgs e)
{
    lblError.Text = "";
    SwapInjuction cleanText = new SwapInjuction();
    loginAndDb loginObj = new loginAndDb("alnojom", "stud_info");
    string[] loginArr = loginObj.login(cleanText.inputFormatter(txtStudLoginName.Text),
    cleanText.inputFormatter(txtStudPass.Text), "stud_username", "stud_password", 0, 2, 20);
    if (loginArr[3] == "True")
    {
        //for managers
        Session["stud_id"] = loginArr[1].ToString();
        Session["stud_uName"] = loginArr[2].ToString();
        Session["stud_name"] = loginArr[0].ToString();
        MsgBox("Welcome " + loginArr[0].ToString());
        Response.Redirect("stud_details.aspx");
    }
    else
    {
        lblError.Text = "The entered name or password is incorrect.";
    }
}
```

Fig. 33. Parent or student login
Print Result and student status (fig. 34) show the function code for print Result and student status.

```csharp
protected void Page_Load(object sender, EventArgs e)
{
    try
    if (!String.IsNullOrEmpty(Session["stud_id"].ToString()) || Session["stud_id"].ToString() == "")
    {
        Int16 stud_id = Convert.ToInt16(Session["stud_id"].ToString());
        if (stud_id > 0)
        { 
            Page.Title = "student information";
            log tendrdb stud_info = new log tendrdb("alnjob", "")
            string query = "SELECT stud_info.stud_name, stud_info.ingurl, premium.paid_premium, premium.total_premium";
            if (retInfo.Rows.Count > 0 || retInfo.Columns.Count > 0)
            {
                lblName.Text = "The student has not paid the premium. Please pay the fee for the information to appear.";
            }
            else
            {
                lblName.Text = Session["stud_name"].ToString();
                lblClassName.Text = retInfo.Rows[0]["classroom.stage_desc"].ToString();
                stud_img.Imgurl = "./management/stud_img/" + retInfo.Rows[0]["imgurl"].ToString();
                txtStudStatus.Text = retInfo.Rows[0]["stud_status_desc"].ToString();
                IsDegree.Visible = true;
            }
        }
    }
    else
    {
        Response.Redirect("login.aspx");
    }
}
```

Fig. 34. print Result and student status

Contact way (fig. 35) show the function code for Contact way.

```csharp
protected void SendMail()
{
    var fromAddress = "ahmedhamide11@gmail.com";
    var toAddress = "ahmedhamide11@gmail.com";
    const string fromPassword = "I23456ahmed";
    string subject = txtSubject.Text;
    string body = txtName.Text + "\n" + txtEmail.Text + "\n" + txtMsg.Text;
    var smtp = new System.Net.Mail.SmtpClient();
    { 
        smtp.Host = "smtp.gmail.com";
        smtp.Port = 587;
        smtp.EnableSsl = false;
        smtp.Credentials = new NetworkCredential(fromAddress, fromPassword);
        smtp.Timeout = 20000;
    }
    smtp.Send(fromAddress, toAddress, subject, body);
}
```

Fig. 35. Contact way
4. TESTING OF THE WEB APPLICATION

4.1. The used methods of testing

Functional testing is a type of testing which verifies that each function of the software application operates in conformance with the requirement specification. This testing mainly involves black box testing and it is not concerned about the source code of the application [8].

Each and every functionality of the system is tested by providing appropriate input, verifying the output and comparing the actual results with the expected results. This testing involves checking of user Interface, APIs, database, security, client/ server applications and functionality of the application under test. The testing can be done either manually or using automation [8] in the fig. 36 below.

Functional testing process:

![Functional Testing Process Diagram](image)

Fig. 36. Steps of executing the functional testing process

According to a recent info, our system functional testing has done by comparing the actual results with the expected results (tab. 1).
Table 1. The protocol of functional testing of the site

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
<th>Expected result</th>
<th>Obtained result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Brows all thing at the general form of website.</td>
<td>This features are available for a normal user(any person)and special user(parent of student)and teacher users and administrator</td>
<td>This features are available for a normal user(any person)and special user(parent of student)and teacher users and administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>2.</td>
<td>get detail of student (result ,absence, advertising ) by using email and password that supported to him by administrator</td>
<td>This features are available for special user(parent of student)and administrator if required</td>
<td>This features are available for special user(parent of student)and progr administrator if required</td>
<td>The function works</td>
</tr>
<tr>
<td>3.</td>
<td>Add mark of student .</td>
<td>This features are available for a teacher users and administrator</td>
<td>This features are available for a teacher users and administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>4.</td>
<td>Edit mark of student .</td>
<td>This features are available for a teacher users and administrator</td>
<td>This features are available for a teacher users and administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>5.</td>
<td>modify permission of the special user</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>No.</td>
<td>Function</td>
<td>Expected result</td>
<td>Obtained result</td>
<td>Conclusion</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>6.</td>
<td>modify permission of the normal user</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>7.</td>
<td>add one of the type of users.</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>8.</td>
<td>delete one of the type of users.</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>9.</td>
<td>Has the powers and functions of all other types of users.</td>
<td>This features are available for administrator only</td>
<td>This features are available for administrator only</td>
<td>The function works</td>
</tr>
<tr>
<td>10.</td>
<td>Support special user (parent of student) by email and password for able to get detail of student (result, absence, advertising)</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>11.</td>
<td>Support administrator to be able modify all data in web site</td>
<td>This features are available for a programmer only</td>
<td>This features are available for a programmer only</td>
<td>The function works</td>
</tr>
<tr>
<td>12.</td>
<td>authorize the users (special and teacher)</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>No.</td>
<td>Function</td>
<td>Expected result</td>
<td>Obtained result</td>
<td>Conclusion</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------------</td>
<td>-----------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>13.</td>
<td>See The page for administrator enter</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>14.</td>
<td>add new news or advertise</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>15.</td>
<td>edit news or advertise</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>16.</td>
<td>add image to gallery</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>17.</td>
<td>add and edit teacher information</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>18.</td>
<td>change password of the teacher</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>19.</td>
<td>Add and edit subject</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>No.</td>
<td>Function</td>
<td>Expected result</td>
<td>Obtained result</td>
<td>Conclusion</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------</td>
<td>------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>20.</td>
<td>add and edit class</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>21.</td>
<td>add and edit student information</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>22.</td>
<td>add and edit student fee(premium)</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>23.</td>
<td>Add and edit student degree</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>24.</td>
<td>Add and edit student status</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>25.</td>
<td>file upload</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>26.</td>
<td>Add and edit contact detail</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>No.</td>
<td>Function</td>
<td>Expected result</td>
<td>Obtained result</td>
<td>Conclusion</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>27.</td>
<td>modify all data in web site by enter and register in page of administrator in website by using email and password that supported him by programmer</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>28.</td>
<td>issue instructions to the site programmer to make changes to the website and to suit the development of work</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>29.</td>
<td>see information about all students and School staff in anywhere of website</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>30.</td>
<td>add information about all students and School staff and school in anywhere of website</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>No.</td>
<td>Function</td>
<td>Expected result</td>
<td>Obtained result</td>
<td>Conclusion</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>31.</td>
<td>delete information from students and School staff and school in anywhere of website</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>32.</td>
<td>search any information about students and School staff and school in anywhere of website</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>33.</td>
<td>receive reports on (get amount of students, get gender of students, get any information about students and School staff and school)</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>34.</td>
<td>correct information about all students and School staff and school</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
<tr>
<td>35.</td>
<td>print information about all students or anything in website.</td>
<td>This features are available for administrator</td>
<td>This features are available for administrator</td>
<td>The function works</td>
</tr>
</tbody>
</table>
4.2. Testing of the website for high school

Forms are an integral part of any website. Forms are used for receiving information from users and to interact with them. So should check the following in these forms [20]:

1) check all the validations on each field;
2) check for default values of the fields;
3) check wrong inputs in the forms to the fields in the forms;
4) check options to create forms if any, form delete, view or modify the forms.

The screen forms of the application divided according to type of users where:

Normal user can view and make the following:

The normal users who enter to the website can read and get all data about the high school that limited by administrator, by press the different buttons in the website page as shown in figure 37 below.

Fig. 37. The web site contain after enter as normal user (any user)

Below are some form samples.
Form of home page that represent the fig. 38.

Fig. 38. The home page

The special users can see all thing that can see by normal user in addition If special user (student or his parent) want to enter to view his result and status he can use user name and password that specified to him by administrator by press to result of student icon then enter to the panel that shown in figure 39 below.

Fig. 39. Panel for login student or his parent
Then the special user (student or his parent) get the result and status of student and can print it as shown in figure 40 below.

![Fig. 40. Print result and status of student](image)

The administrator users can see all thing that can see and make by normal user and special user and teacher users:

The page for administrator enter in the fig. 41 below.

![Fig. 41. The page for administrator enter](image)

The web site contain 6 section after entered as administrated in the fig. 42 below.

![Fig. 42. The web site contain after enter as administrator](image)
The features that are available for administrator:

1) can modify all data in web site by enter and register in page of management in website by using email and password that supported him by programmer And to issue instructions to the site programmer to make changes to the website and to suit the development of work:

2) see information about all students and school staff;
3) add information about all students and school staff and school;
4) delete information from students and school staff and school;
5) search any information about students and school staff and school;
6) receive reports on (get amount of students, get gender of students, get any information about students and School staff and school;
7) correct information about all students and School staff and school;
8) Print information about all students or in thing in website.

This sections will illustrated as shown in the following some examples.

In the fig. 43 below you can see how update news or advertise.

Fig. 43. Update news or advertise
Delete or edit teacher information as shown in the figure 44 below.

Fig. 44. Delete or edit teacher information

Change password of the teacher as shown in the figure 45 below.

Fig. 45. Change password of the teacher
Add student as shown in the figure 46 below.

Fig. 46. Add student

Form of contact that represent the fig. 47.

Fig. 47. Contact

The teacher users can see and make all that make and see by normal user in addition of add and edit mark.
CONCLUSION

The aim of this system is to implement the development for management website of everything relate with the typical private school, the site system will be divided according to the type of users and what they can see and make where:

- the normal users who enter to the website can read and get all data about the typical high school that limited by administrator where can view this icons and detail, home, school image, news and advertising, contact, result of student (view icon only cannot view detail);

- the special users can see all thing that can see by normal user in addition If special user (student or his parent) want to enter to view his result and status he can use user name and password that specified to him by administrator by press to result of student icon;

- the administrator users can see all thing that can see and make by normal user and special user in addition modify (add and edit) the following icons (home, news, teacher, class and subjects, registration and premium, student degree) after enter the page for administrator (enter user name and password that specified to him by programmer);

- the teacher users can see and (add, edit mark) after enter (user name and password that specified to him by administrator) and that can see and make by normal user.

During the development of the web application, we resolved the following tasks:

1) subject topic analysis;
2) comparative analysis was carried out from its analogues;
3) an analysis of modern tools for the development and selection of websites;
4) tools for project development;
5) designing the structure and behavior of the web application;
6) database schema designed;
7) design interfaces;
8) perform a description of the web application development process;
9) implement and test the Web site to manage a typical high school.

For the following opportunities to develop the application, we can determine that

The following points:
1) includes an integrated electronic library;
2) include a mini-model of school governance electronically and then circulate it as a model for the student's e-government;
3) increasing the information and options in proportion to each school and educational institution;
4) the site can be developed to perform the required role in case it is used as an ideal website for a college or university;
5) each site needs to be updated and developed continuously, where mistakes will be appeared as a result of experience and work in the future and needs to conduct continuous tests, making the site better and more secure.
REFERENCES


