

**MINISTRY OF HIGHER EDUCATION  
AND SCIENTIFIC RESEARCH  
UNIVERSITY OF DIYALA  
COLLEGE OF SCIENCE  
DEPARTMENT OF COMPUTER SCIENCE**



**TEST GENERATOR  
AND  
ONLINE EXAM**

**BY**

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**UNDER THE SUPERVISION OF  
Lecturer assistant. Wassn Saad**

**1440A.H**

**2019A.D**

## **Dedication**

### **Hussein Ali**

To the one who took the thorns on my way to prepare me the way of science to the great heart (My Father)

To the symbol of love and the balm of healing to the heart pure white (my Mother)

To pure hearts and innocent souls (My Brothers)

To the dear which her been credited with my education and endure hardships for me (My Grandmother)

For more than helped me to complete this project (Stack Overflow, Code for Iraq, Elzero Web School)

### **Aseel Faeq**

To my heaven (Mom & Dad)

To my sun and my moon (my sister & my brother)

## Supervisors' Certificate

I certify that project entitle "**TEST GENERATOR AND ONLINE EXAM**" was prepared under my supervision to computer science department to science collage by (Hussein Ali Abd Al-Abbas , Aseel Faeq Atta ) as a partial fulfillment of the requirements for the degree of B.Sc.in computer science Department.

Signature:

Name:- Wassn Saad

Date: - ... /.../2019

## **Certification of the examining**

We certify that we have read the project titled Design a “**TEST GENERATOR AND ONLINE EXAM**”.

And as examining committee, examined the student in its contents and in what is concerned with it and that in our opinion it meets the standards of project for the degree of B.Sc. Computer Science.

Signature:

Name:

(Chairman)

Date:     /     /2019

Signature:

Name:

(Member)

Date:     /     / 2019

Signature:

Name: Lecturer assistant. Wassn Saad

(Supervisor)

Date:     /     / 2019

---

Approval for the Computer Science Department

Signature:

Name: Dr. Taha Mohammad Hassan

(Head of Computer science Department-College of science)

Date:     /     /2019

## **Acknowledgment**

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Finally, I would like to thank our family for their faith in us and for giving us unconditional love and support throughout our studies.

## ABSTRACT

Examinations are an indispensable part of a student's life. In the conventional mechanism, the question paper generation is time-consuming work for the faculty members of the educational institution. We have designed the question paper setting system to be user-friendly so that, can overcome from the typographic problem. Presently in most of the educational institutions question papers are set manually. It is time-consuming work and there may be chances of repetition of the same questions. The online exam system is more practical and less time consuming for all, and it is easy to use and no need for papers and pens in it. Also, it is easy to use any one with a small background about how registration works can handle the registration process on this system. So, in order to make the question paper generation more convenient to use, the web application is developed using Angular 7 that can be accessed from LAN/Intranet. The Test generator comes with the Teachers Module Student Module. The Admin grants access to the users by registering them. The faculty can access the system once they are registered. The faculty can enter questions in the database daily as per their free time. In this way, the question pool can be generated. The question paper is then generated by selected course experts.

In the online exam there is the possibility to correct the questions (true and false, multi choice, short answer) and show the result to the student after the completion of the exam directly

Test generator it's able to generate a random questions, just be selecting the number of questions the lecturer wants, then he can print them out.

The administrator can add, delete or modify questions, as well as add new students, delete or modify student information This system could help lecturers, instructors, teachers and others who are willing to create new exams or edit existing ones as well as students participating in the exams.

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# **CHAPTER ONE**

## **INTRODUCTION**

## **1-1: Introduction**

The conventional mode of exams is now outdated as we have seen in the past couple of decades. Very few entrance exams are conducting paper-based exams because everyone has understood that it is time taking, expensive and less secure as compare computer-based exams. A new methodology has come in the existence that has brought a revolutionary change in the exams pattern and arrangements. Now the Test Generator software evolution has changed the traditional approach of exams.

The way to find appropriate questions to make a test is in continuous development and so we try to find the best way to apply it in our educational system

So Test Generator and online exam is not a new way but it a good for this reason

The Test Generator platform has advantages for students taking help of such software. Benefits of Students: Students can appear for exams from multiple devices. As the software or Test Generator is web-based and can be accessed easily.

## **1-2: The aim of The System**

The aim of this study is to activate the role of technology in university society. The system is able to create tests, mid-term, and final exams. In addition to develop test experience for both the teachers and students from the traditional experience because it will help them both to save more time and it less expensive.

## **1-3: The Problem of Current System**

1. the problem of losing the test papers
2. the cheating attempts for the student who tries to change their papers with others
3. takes a huge amount of time for instructors to review the whole course to create questions for a test
4. the repetition of questions in a test
5. delay the test score for the student because of its take time from the instructors to review all the test papers

## **1-4: Research Objective**

The research work focuses on improving the experience of test for both the students and the instructors. The current method that is used to take a huge amount of time and has a lot of flaws, so the research goal is to overcome these flaws and decreasing the time. An established university such as Diyala University should not have these flaws and that's is the goal of the research is to develop and overcomes it.

## **CHAPTER TWO**

# **LITERATURE REVIEW**

## **2-1: PHP**

PHP started out as a small open source project that evolved as more and more people found out how useful it was. Rasmus lerdorf unleashed the first version of PHP way back in 1994.

### **What Is PHP?**

PHP (recursive acronym for "PHP: hypertext preprocessor"—formerly the acronym for "personal home page"). PHP is a server side scripting language that is embedded in html and designed for use in web based applications. It is also used to manage dynamic content, databases, session tracking, even build entire e-commerce sites

It is integrated with a number of popular databases, including MySQL, PostgreSQL, oracle, Sybase, Informix, and Microsoft SQL server.

### **Common Uses of PHP**

- PHP performs system functions, i.e. from files on a system it can create, open, read, write, and close them.
- PHP can handle forms, i.e. gather data from files, save data to a file, through email you can send data, return data to the user.
- You add, delete, and modify elements within your database through PHP.
- Using PHP, you can restrict users to access some pages of your website.
- It can encrypt data.

### **Characteristics of PHP**

Five important characteristics make PHP practical nature possible –

- Simplicity
- Efficiency
- Security
- Flexibility
- Familiarity

## **2-2: DATABASE**

### **What is a database?**

A database is a separate application that stores a collection of data. Each database has one or more distinct apis for creating, accessing, managing, searching and replicating the data it holds. Other kinds of data stores can also be used, such as files on the file system or large hash tables in memory but data fetching and writing would not be so fast and easy with those type of systems. Nowadays, we use relational database management systems (rdbms) to store and manage huge volume of data. This is called relational database because all the data is stored into different tables and relations are established using primary keys or other keys known as foreign keys

A Relational Database Management System (RDBMS) is a software that –

- Enables you to implement a database with tables, columns and indexes.
- Guarantees the Referential Integrity between rows of various tables.
- Updates the indexes automatically.
- Interprets an SQL query and combines information from various tables.

### **2-2-1: MySQL Database**

MySQL is an open-source relational database management system that works on many platforms. It provides multi-user access to support many storage engines and is backed by Oracle. MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company. MySQL is becoming so popular because of many good reasons

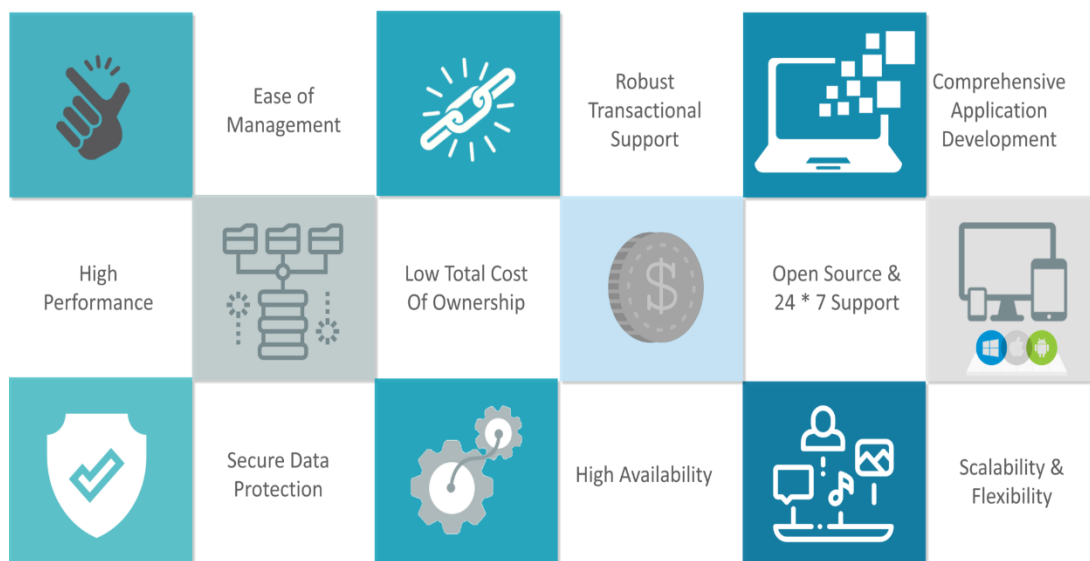
- MySQL is released under an open-source license. So you have nothing to pay to use it.

- MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.
- MySQL uses a standard form of the well-known SQL data language.
- MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
- MySQL works very quickly and works well even with large data sets.
- MySQL is very friendly to PHP, the most appreciated language for web development.
- MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).
- MySQL is customizable. The open-source GPL license allows programmers to modify the MySQL software to fit their own specific environments.

## **MySQL Features**

- Ease of Management – The software very easily gets downloaded and also uses an event scheduler to schedule the tasks automatically.
- Robust Transactional Support
- Comprehensive Application Development – MySQL has plugin libraries to embed the database into any application. It also supports stored procedures, triggers, functions, views and many more for application development.
- High Performance – Provides fast load utilities with distinct memory caches and table index partitioning.
- Low Total Cost Of Ownership – This reduces licensing costs and hardware expenditures.

- Open Source & 24 \* 7 Support – This RDBMS can be used on any platform and offers 24\*7 support for open source and enterprise edition.
- Secure Data Protection – MySQL supports powerful mechanisms to ensure that only authorized users have access to the databases.
- High Availability – MySQL can run high-speed master/slave replication configurations and it offers cluster servers.
- Scalability & Flexibility – With MySQL you can run deeply embedded applications and create data warehouses holding a humongous amount of data



**FIG 1: Features of MYSQL**



## **2-3: Angular**

### **What IS Angular**

Angular used to be the “golden child” among JavaScript frameworks, as it was initially introduced by Google Corporation in 2012. It was built with the Model-View-Controller concept in mind, though authors of the framework often called it “Model-View-\*” or even “Model-View-Whatever”.

Angular became popular very quickly and received a lot of traction. Still, its maintainers decided to take another step further and proceeded to develop a new version which was initially named Angular 2 (later, simply Angular without the “JS” part). It’s no coincidence the framework received a new name: actually, it was fully re-written and redesigned,

## 2-3-1: why Angular

Because it's supported on various platforms (web, mobile), it's powerful, modern, has a nice ecosystem, and it's just cool. And these another reason to use angular:

- Angular presents you not only the tools but also design patterns to build your project in a maintainable way. When an Angular application is crafted properly, you don't end up with a tangle of classes and methods that are hard to modify and even harder to test. The code is structured conveniently and you won't need to spend much time in order to understand what is going on.
- It's JavaScript, but better. Angular is built with TypeScript, which in turn relies on JS ES6. You don't need to learn a totally new language, but you still receive features like static typing, interfaces, classes, namespaces, decorators etc.
- With Angular, we already have lots of tools to start crafting the application right away. We have directives to give HTML elements dynamic behavior. We can power up the forms using Form Control and introduce various validation rules. We may easily send asynchronous HTTP requests of various types. We can set up routing with little hassle. And there are many more goodies that Angular can offer us!
- **Angular is mobile and desktop-ready**, meaning we have one framework for multiple platforms

## **2-3-2: History of Angular's versions**

Angular is one of the most popular front-end JavaScript framework besides Vue.js and React. It has been around for past 10 years, and since then, it has gone through innumerable upgrades.

The first version of the framework was called AngularJS, which was launched in 2009. Though it was certainly not a perfect framework back then, mainly due to its large bundle size, performance issues, and other technical problems. But that imperfection was the motivation behind the entire rewrite of the AngularJS. Due to the not-at-all-perfect & failed attempt, the developers at Google decided to use really powerful libraries.

And not only that, but over time, they also added new features such as AOT (Ahead-of-Time) compiling, tree-shaking, and many other helpful features. The next version – Angular 2 – was written in Typescript, which is a popular, typed superset of JavaScript introduced by Microsoft.

Typescript basically allowed Angular to show the errors in HTML templates. But, the main major feature which was added in the Angular 2 was a compiler that was deployed between written code and output shipped to the application. This new compiler used to optimize the production of template-rendering, which further allowed the code to execute at the maximum speed in JVMs (JavaScript Virtual Machines).

The next version – Angular 4 – further saw view-engine enhancements and code generation reductions to build an app with less efforts and complexity. Now, the primary reason behind skipping the number 3 was mainly to avoid a confusion that was raised because of the misalignment of the router package's version that was already distributed as version 3.3.0. And within short period, they also released a minor upgrade – Angular version 4.3 – that featured HTTP Client, which is an easier-to-use library for creating HTTP requests. After that, Angular 5 was released in November 2017, which followed the releases of Angular 2 and

Angular 4 closely which were launched in September 2016 and March 2017 respectively. The key feature of Angular 5 was the support for progressive web apps, and the main improvements included the enhancements in Material Design.

## **2-4-3: Angular 7**

Though there are not a lot of new updates & features launched in this release, but there are certainly some useful upgrades for Angular front-end developers including improvements to Angular Material and the core framework, CLI with synchronized major versions, and upgrades to the toolchain. The Angular 7 version is primarily focused on the Ivy project, which has been going on since past release. The Ivy project is basically rewriting the Angular compiler and runtime code to make it better, faster, and smaller. While the Ivy is still not ready for the prime time yet, but back in April, there were a lot of rumors & fake news about Ivy as well as many other features, which are now nowhere to be seen.

## **2-3-4: What does Angular do?**

- Angular is a JavaScript framework that helps developers build applications. The library provides a number of features that make it trivial to implement the complex requirements of modern applications, such as data binding, routing, and animations.
- Angular also provides a series of conventions for how you approach application development, which can be beneficial for large teams that need to work together on a single code base. Angular is one of the only JavaScript libraries to provide a comprehensive style guide with a number of opinionated guidelines on how you could write your code with the framework.

## **2-4: RELATED WORK**

In their paper (1) Yuan et al proposed a multi-layer based exam system based on Microsoft DCOM technology. The system is not reliable enough. Also it uses a specific technology not open source technology.

In his research (2) Hoffman et al proposed an exam system for testing student in the software engineering courses and that system is used offline. JeffMcGough et al (3) proposed a browser-based exams system to prove of concept. That system does not support full interactivity and it does not support different languages.

In his research (4) Ji-hoon et al proposed exam generator program which helps both users and instructors. The system is built for generating exams for fundamental engineering students. The exam is designed taking into consideration one type of exams which is Multiple Choice Questions. Raymond et al (5) proposed a web based Multiple Choice Exams. This exam supports only this type of questions and does not support Arabic as an exam language.

Jelica et all (6) purposed a system that provide teachers with efficient means of generating and scoring tests with multiple choice answers. This system is inevitable in evaluating student's knowledge at massive examinations.

Jordi et al. (7) presented a secure electronic examination protocol. Using wireless technology, they propose a trade-off solution between examination security and examination flexibility.

Mikel et al (8) proposed an exam tool that is based on multiple choice questions. This tool is designed for only computer science students. TCExam (9) is open source web based exam. But it is limited on supporting much kind of questions.

Zhang et al (10) proposed a web-based operational skills examination and evaluation system for computer courses.

In his study (11), Chine Lin et al designed a prototype automatic quiz generation system (auto-quiz for short) for a given English text to test learner comprehension of text content and English skills. After the emergence of modern technologies in the field of Information Technologies (IT), virtual learning has attained a new form. The way of announcing exams' grades is an important topic in e-learning. For announcing exams' grades on the web, various methods have been proposed.

In his paper (12), Shiral -Shahreza introduced three new methods for announcing exams' grades and the result of implementing these methods for announcing the grades of some courses at the some Iranian universities are provided. Also these methods and their results are analyzed. Finally these three new methods are compared with other methods.

In their research (13), NAȘCU et al present the main aspects and implementation of an online multiple choice examination system with general chemistry issues for student evaluation. The testing system was used to generate items for a multiple-choice examination for first year undergraduate students in Material Engineering and Environmental Engineering from Technical University of Cluj-Napoca, Romania, which all attend the same General Chemistry course.

# **CHAPTER THREE**

## **PRACTICAL PART**

### **3-1: Chapter summary**

1. Registration
2. Main page
3. Add Question page
4. Create Test page
5. Show all Questions page
6. Add or edit data page
7. Online exam page
8. System Using Requirement



## 3-2: Registration Page

The first interface is registration that include registration for both instructor and student which can take us to main page just by entering the name of the instructor and his password



تسجيل دخول الاساتذة

الاسم الكامل \*  
hussein

رقم الهوية \*  
..

Login

تسجيل دخول الطلاب

الاسم الكامل \*  
.....

رقم الهوية \*  
.....

المرحلة  
.....

Login

عرض النتيجة

### 3-2-1: Registration for the admin (instructor)

A note will appear if you enter wrong user name or password

### 3-2-2: Registration for the user (student)

The student register by enter his name and ID number and choose which stage he/she in, and it will take you to the online exam page

### 3-2-3: Show Result (عرض النتيجة) bottom

It take you to Result page which show the degree of the student who do online exam in our system

### 3-3: Main Page

It contains the main bottom which is

1. Add questions
2. Create exam
3. Show all questions
4. Add or edit data
5. Log out



## 3-4: Add Question page

In these page we have three features

The First one is add question individually and the second is add question in excel format and the third is add picture

الرئيسية إضافة أسئلة إنشاء امتحان عرض كل الأسئلة إضافة أو تعديل البيانات تسجيل خروج

إضافة صورة إضافة أسئلة بواسطة ملف اكسل إضافة أسئلة بشكل فردي

المرحلة اسم المادة نوع الأسئلة

رفع الأسئلة كملف اكسل Browse

السؤال الجواب

إضافة الأسئلة

Powered by 000webhost

## Add question individually

Here when you click to choose add question individually

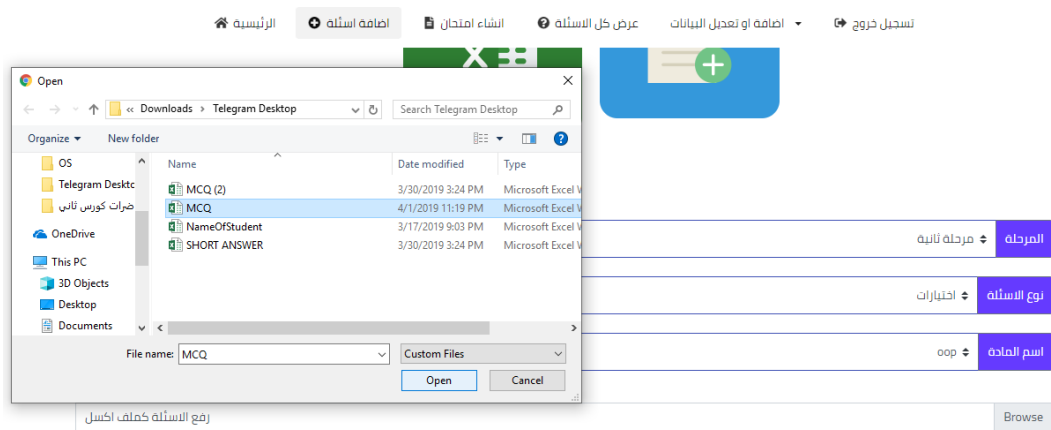
The window will appear containing three slots instructor needs to fill them up such as the stage, name of the subject, the type of question like for example is it fill the blanks or MCQ type, and answer for the question

Then click add bottom as you can add the questions.

## Add question in excel format

The screenshot shows a web application interface for adding questions. At the top, there is a navigation bar with links: الرئيسية (Home), إضافة الأسئلة (Add questions), إنشاء امتحان (Create exam), عرض كل الأسئلة (View all questions), and تسجيل خروج (Logout). Below the navigation bar, there are three main buttons: 'إضافة صورة' (Add image) with a cloud icon, 'إضافة أسئلة بواسطة ملف إكسل' (Add questions by Excel file) with an Excel icon, and 'إضافة أسئلة بشكل فردي' (Add questions individually) with a document icon. Below these buttons, there are three input fields: 'المادة' (Subject), 'اسم المادة' (Subject name), and 'نوع الأسئلة' (Question type). Below these fields, there is a 'رفع الأسئلة كملف إكسل' (Upload questions as Excel file) button and a 'Browse' button. At the bottom, there is a table with two columns: 'السؤال' (Question) and 'الاجابة' (Answer). Below the table, there is a 'إضافة الأسئلة' (Add questions) button.

In excel format the instructor can upload all the question in the same time with the answers by choosing the file he wants to upload, when he finish uploading it the question will appear in front of him and he will be able to choose what question to keep and what to remove



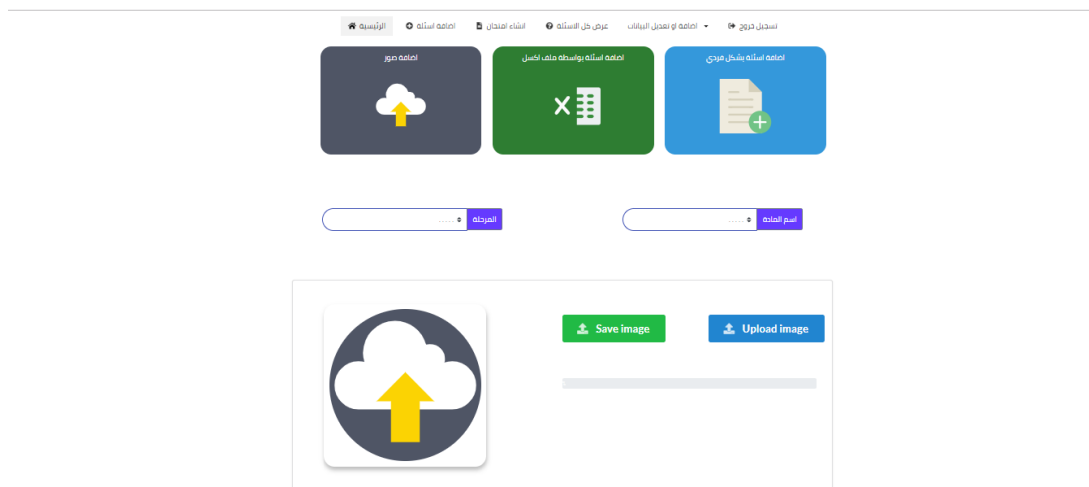
السؤال	الجواب
--------	--------

الرئيسية إضافة أسئلة إنشاء امتحان عرض كل الأسئلة إضافة أو تعديل البيانات تسجيل خروج

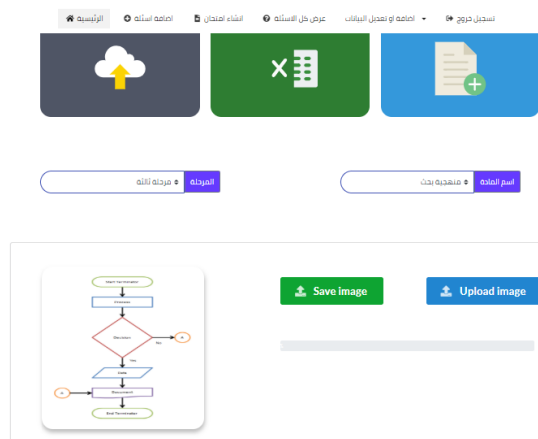
رفع الأسئلة كملف اكسل Browse

السؤال	الجواب
1. Computer technology is changing at a _____ pace.	C. rapid
2. Computer _____ refers to those attributes that have a direct impact on the logical execution of a program.	D. architecture
3. Architectural attributes include _____.	A. I/O mechanisms
4. _____ attributes include hardware details transparent to the programmer.	B. Organizational
5. It is a(n) _____ design issue whether a computer will have a multiply instruction.	A. architectural
6. It is a(n) _____ issue whether the multiply instruction will be implemented by a special multiply unit or by a mechanism that makes repeated use of the add unit of the system.	D. organizational
7. A _____ system is a set of interrelated subsystems.	B. hierarchical

## Add picture and figure



Here the instructor can upload any picture or figure by choosing the picture he wants to upload, when he finish uploading it the picture will appear in front of him and he will be able to save it



### 3-5: Create Test page

In the creating test window, the first thing to do is to choose the stage or the year of the student so that questions will appear only for that stage. Secondly, the name of the subject is a must. Also, the instructor needs to choose whether he wants to select the type and the questions or the site selected them randomly. In addition, when the instructor chooses the subject and the year the site will show him the amount of the questions available and the type of these questions.

The screenshot shows the 'Create Test' page with the following elements:

- Navigation bar: الرئيسية (Home), إضافة أسئلة (Add Questions), إنشاء امتحان (Create Exam), عرض كل الأسئلة (View All Questions), إضافة أو تعديل البيانات (Add or Edit Data), تسجيل خروج (Logout).
- Form fields: Three dropdown menus labeled 'المرحلة' (Stage), 'اسم المادة' (Subject Name), and 'نوع الامتحان' (Exam Type). The 'المرحلة' dropdown is open, showing options: 'مرحلة أولى' (First Stage), 'مرحلة ثانية' (Second Stage), 'مرحلة ثالثة' (Third Stage), and 'مرحلة رابعة' (Fourth Stage).
- Text: 'Multi Choose : 0 / True False 0 / Blank 0'.
- Button: 'انشاء الامتحان' (Create Exam).

The screenshot shows the 'Create Test' page with the following elements:

- Navigation bar: الرئيسية (Home), إضافة أسئلة (Add Questions), إنشاء امتحان (Create Exam), عرض كل الأسئلة (View All Questions), إضافة أو تعديل البيانات (Add or Edit Data), تسجيل خروج (Logout).
- Form fields: Three dropdown menus labeled 'المرحلة' (Stage), 'اسم المادة' (Subject Name), and 'نوع الامتحان' (Exam Type). The 'المرحلة' dropdown is set to 'مرحلة أولى' (First Stage). The 'اسم المادة' dropdown is open, showing options: 'Programming', 'حقوق' (Law), and 'عربي' (Arabic).
- Text: 'k 0'.



الرئيسية | إضافة أسئلة | إنشاء امتحان | عرض كل الأسئلة | إضافة أو تعديل البيانات | تسجيل خروج

المرحلة: المرحلة الثالثة | اسم المادة: System Programming | نوع الامتحان: ...

Multi Choose : 15 / True False 28 / Blank 30

أنشاء الامتحان

الرئيسية | إضافة أسئلة | إنشاء امتحان | عرض كل الأسئلة | إضافة أو تعديل البيانات | تسجيل خروج

المرحلة: المرحلة الثالثة | اسم المادة: System Programming | نوع الامتحان: أسئلة عشوائية

عدد الصح ام خطأ: 0 | عدد الفقرات: 0 | عدد الاختيارات: 0 | عدد الاسئلة المرحلية: 0

Multi Choose : 15 / True False 0 / Blank 15 / Explanatory Questions 3

أنشاء الامتحان | طباعة | توليد اسئلة عشوائية

In this step the instructor chose the type of questions for the test and the numbers of questions for each type. Also, the instructor can see press the Create Test button and that will create a random online test for the student immediately, or he/she can chose the Random Questions Generator button to see the questions with their answers and then printing them from the Print button. (As shown in the pictures below)

المرحلة	اسم المادة	نوع الامتحان
المرحلة الثالثة	System Programming	اسئلة عشوائية
عدد المرح ام خطأ	عدد الفقرات	عدد الاجابات
0	5	5
عدد الاسئلة الشرحية		
2		

Multi Choose : 15 / True False 0 / Blank 15/ Explanatory Questions 3

تقديم الامتحان | طباعة | توليد نسخة عشوائية

## الاسئلة الاسئلة المحذرة

University of Diyala  
College of Science  
Department of Computer  
Class : 3



Subject : System Programming  
Date : 2018 - 2019  
Time : 2 HR  
Examiner:

Notes :

### Fill The Blank Questions

- 1 - A common example of system interconnection is by means of a \_\_\_\_\_, consisting of a number of conducting wires to which all the other components attach.
- 2 - \_\_\_\_\_ refers to the operational units and their interconnections that realize the architectural specifications.
- 3 - 5. The \_\_\_\_\_ architecture is the architecture of IBM's mainframe product line.
- 4 - 6. \_\_\_\_\_ is the way in which the components are interrelated.
- 5 - 10. The four main structural components of the computer are: main memory, I/O, system interconnection, and \_\_\_\_\_.

### Choose Correct Answer

- 1 - Computer technology is changing at a \_\_\_\_\_ pace.  
A) rapid  
B) B  
C) C

المرحلة	اسم المادة	نوع الامتحان
المرحلة الثالثة	System Programming	اسئلة عشوائية
عدد المرح ام خطأ	عدد الفقرات	عدد الاجابات
0	5	5
عدد الاسئلة الشرحية		
2		

Multi Choose : 15 / True False 0 / Blank 15/ Explanatory Questions 3

تقديم الامتحان | طباعة | توليد نسخة عشوائية

- 2 - It is a(n) \_\_\_\_\_ issue whether the multiply instruction will be implemented by a special multiply unit or by a mechanism that makes repeated use of the add unit of the system.  
A) organizational  
B) B  
C) C
- 3 - Computer \_\_\_\_\_ refers to those attributes that have a direct impact on the logical execution of a program.  
A) architecture  
B) B  
C) C
- 4 - It is a(n) \_\_\_\_\_ design issue whether a computer will have a multiply instruction.  
A) architectural  
B) B  
C) C
- 5 - Architectural attributes include \_\_\_\_\_.  
A) I/O mechanisms  
B) B  
C) C

### Explain

- 1 - Bits in the memory may represent data or instruction how does processor categorize these as data and instruction?
- 2 - What is instruction counter?

الرئيسية | اضافة اسئلة | انشاء امتحان | عرض كل الاسئلة | اضافة او تعديل البيانات | تسجيل خروج

المرحلة: المرحلة الثالثة | اسم المادة: System Programming | نوع الامتحان: اسئلة عشوائية

عدد الصحيح ام خطأ: 0 | عدد المراجعات: 5 | عدد الاختيارات: 5 | عدد الاسئلة الشرحية: 2

Multi Choose : 15 / True False 0 / Blank 15/ Explanatory Questions 3

انشاء الامتحان | طباعة | توليد اسئلة عشوائية

## الدخول

### Answer Blank Questions

- 1 - system bus
- 2 - 2. Computer organization
- 3 - 5. System/370
- 4 - 6. Structure
- 5 - 10. central processing unit (CPU)

### Answer Multi Chaise Questions

- 1 - rapid
- 2 - organizational
- 3 - architecture
- 4 - architectural
- 5 - I/O mechanisms

### Answer Questions

- 1 - Process creates an Op-Code for each type of instruction and then it finds out the op code in the program from the machine optable and fetches the instruction. Thus when op code is found it takes it as an instruction and when no op-code is found it assumes it as the data within the program
- 2 - An indicator register is a hardware memory device which denotes the location of the current instruction being executed. It is also called PC (Program counter) or IP (Instruction pointer).

In this step the instructor will select the questions and their types also and not the randomly by the system.

الرئيسية | اضافة اسئلة | انشاء امتحان | عرض كل الاسئلة | اضافة او تعديل البيانات | تسجيل خروج

المرحلة: المرحلة الثالثة | اسم المادة: System Programming | نوع الامتحان: اسئلة عشوائية

Multi Choose : 15 / True False 0 / Blank 15/ Explanatory Questions 3

اسئلة عشوائية

اسئلة محددة

Here the examiner will chose the type of questions and after choosing it they questions will appear on the left side of the screen, and on the right side it present how the test paper will look like.

الرئيسية
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إنشاء امتحان
عرض كل الأسئلة
إضافة أو تعديل البيانات
تسجيل خروج

المرحلة
المرحلة التالية
اسم المادة
System Programming
نوع الأسئلة
اختيارات

Multi Choose : 15 / True False 0 / Blank 15 / Explanatory Questions 3

إنشاء الامتحان
طباعة

الأسئلة
الأسئلة المختارة

1 - \_\_\_\_\_ provide storage internal to the CPU.  
Answer : - Registers

2 - A common example of system interconnection is by means of a \_\_\_\_\_.  
Answer : - system bus

3 - An I/O device is referred to as a \_\_\_\_\_.  
Answer : - peripheral

4 - It is a(n) \_\_\_\_\_ issue whether the multiply instruction will be implemented by a special multiply unit or by a mechanism that makes repeated use of the add unit of the system.  
Answer : - organizational

University of Diyala  
College of Science  
Department of Computer  
Class : 3

Subject : System Programming  
Date : 2018 - 2019  
Time : 2 HR  
Examiner:

Notes :

The instructor can easily add any question to the test paper just by clicking on the question he want. Also, he/she can edit the test paper by changing the time and the examiner name, but for the subject it will be written by the system when the instructor choose the subject. Moreover, the instructor can edit the title of the question, and he/she can choose ether to print the questions after selecting them or to create the exam online for the students.

One more feature is that when an instructor accidentally choose the same question more than one time the system will warn by a small window appear and the color of the questions will change to red. (As shown below)

الرئيسية
إضافة أسئلة
إنشاء امتحان
عرض كل الأسئلة
إضافة أو تعديل البيانات
تسجيل خروج

المرحلة
المرحلة التالية
اسم المادة
System Programming
نوع الأسئلة
اختيارات

Multi Choose : 15 / True False 0 / Blank 15 / Explanatory Questions 3

إنشاء الامتحان
طباعة

الأسئلة
الأسئلة المختارة

1 - \_\_\_\_\_ provide storage internal to the CPU.  
Answer : - Registers

2 - A common example of system interconnection is by means of a \_\_\_\_\_.  
Answer : - system bus

3 - An I/O device is referred to as a \_\_\_\_\_.  
Answer : - peripheral

4 - It is a(n) \_\_\_\_\_ issue whether the multiply instruction will be implemented by a special multiply unit or by a mechanism that makes repeated use of the add unit of the system.  
Answer : - organizational

5 - The \_\_\_\_\_ performs the computer's data processing functions.

University of Diyala  
College of Science  
Department of Computer  
Class : 3

Subject : System Programming  
Date : 2018 - 2019  
Time : 2 HR  
Examiner:

Notes :

Choose Correct Answer

1 - A common example of system interconnection is by means of a \_\_\_\_\_.  
A) system bus  
B) B  
C) C

2 - The \_\_\_\_\_ performs the computer's data processing functions.  
A) All

6 - A \_\_\_\_\_ system is a set of interrelated subsystems.  
Answer : - hierarchical

3 - \_\_\_\_\_ provide storage internal to the CPU.  
A) Registers

### **3-6: Show all Questions page**

When the instructor chooses the subject and the year of the student and the type of questions the site will show him all the questions available of the type he chooses.

المرحلة
مرحلة ثالثة

اسم المادة
System Programming

نوع الأسئلة
مراجعات

Questions : 1 15. The \_\_\_\_\_ performs the computer's data processing functions.  
Answer : ALU

Questions : 2 14. \_\_\_\_\_ provide storage internal to the CPU.  
Answer : Registers

Questions : 3 6. It is a(n) \_\_\_\_\_ issue whether the multiply instruction will be implemented by a special multiply unit or by a mechanism that makes repeated use of the add unit of the system.  
Answer : system interconnection

Questions : 4 12. A common example of system interconnection is by means of a \_\_\_\_\_.  
Answer : system bus

So he can edit them or remove as he wants

الرئيسية إضافة أسئلة إنشاء امتحان عرض كل الأسئلة إضافة أو تعديل البيانات تسجيل خروج

Questions : 2 14. \_\_\_\_\_  
Answer : Registers

Questions : 3 6. It is a(n) \_\_\_\_\_ the add unit of the syste  
Answer : system inte

Questions : 4 12. A com  
Answer : system bus

Questions : 5 11. The \_\_\_\_\_ moves data between the computer and its external environment.  
Answer : I/O

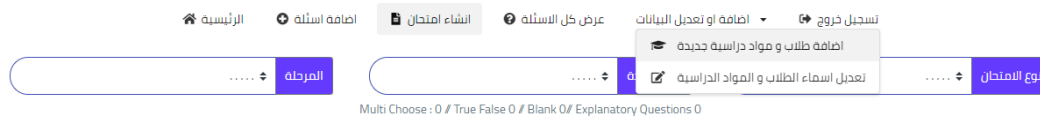
Questions : 6. It is a(n) \_\_\_\_\_ issue whether the multiply instruction  
Answer : system interconnection

Close Save

## 3-7: Add or edit data page

These page contain

1. Add student and new study material
2. edit student and study material information



### 3-7-1: Add student and new study material

In these page we have two features The First one is add new student and the second is add new study material



### Add new student

When you click to choose add new students **individually**

The window will appear containing three slots instructor needs to fill them up such as the stage, name of the student, ID number Then click add bottom as he can add new student .



### اضافة طالب جديد

اضافة طالب بشكل فردي

اضافة طلاب بواسطة ملف اكسل

المرحلة

المرحلة الاولى

اسم الطالب

اميل عماد

رقم هوية الطالب

A-678

اضافة طالب جديد

**In excel** format the instructor can upload all the students name by choosing the file he wants to upload, when he finish uploading it the names will appear in front of him



### اضافة طالب جديد

اضافة طالب بشكل فردي

اضافة طلاب بواسطة ملف اكسل

المرحلة

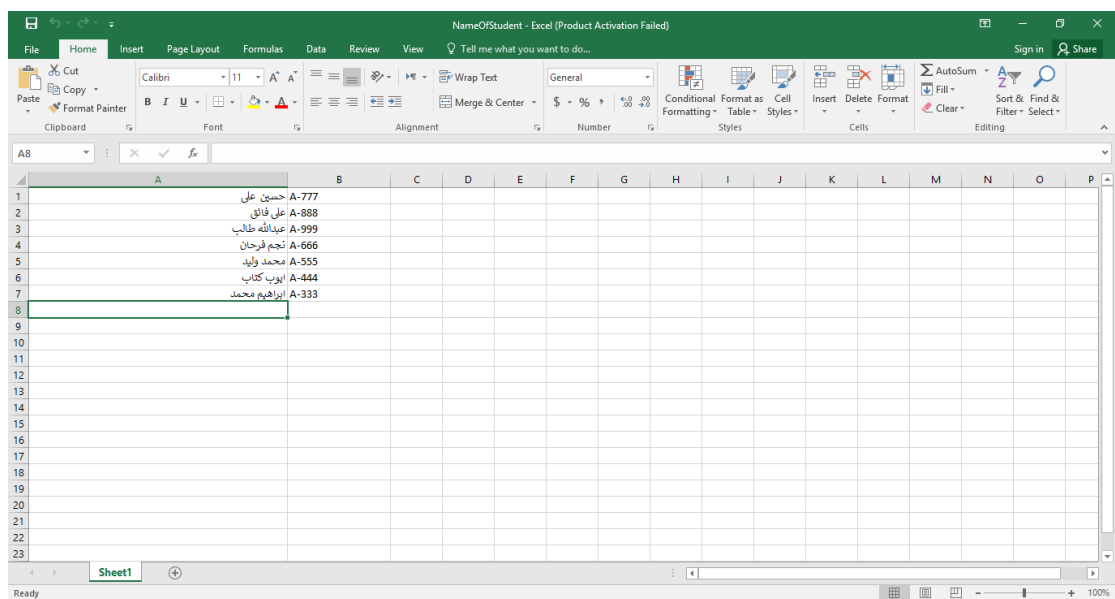
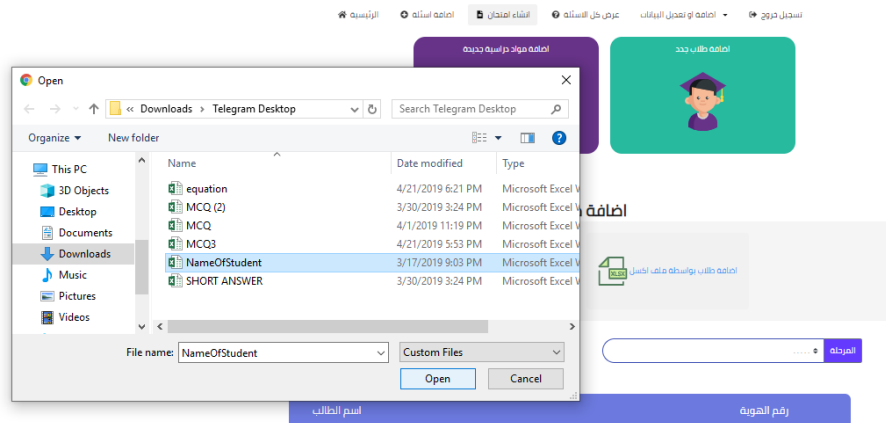
.....

رقم الاسماء بشكل ملف اكسل

اسم الطالب

رقم الهوية





We add the student name in this format

Cell **A** refer to student name, Cell **B** refer to card ID of student

## اضافة طالب جديد

اضافة طالب بشكل فردي



اضافة طالب بواسطة ملف اكسل

رفع الاسماء بشكل ملف اكسل

المرحلة

اسم الطالب	رقم الهوية
حسين علي	A-777
علي ماثق	A-888
عبدالله طالب	A-999
نجم فرحان	A-666
محمد وليد	A-555
ايوب كتاب	A-444
ابراهيم محمد	A-333

**Add new study material** the instructor can add new material to the system be select the stage that wants to add to it and write name of the new material then click add bottom.



## 3-7-2: edit student and study material information

In this window we see two features

Edit students' information and modify the information of study material



### Edit student's information

By selecting the stage and entering number ID of the student the instructor can do some editing on the information of the student

## Modify the information of study material

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تعديل معلومات المواد الدراسية



تعديل معلومات الطلاب



تعديل اسماء المواد الدراسية

 المرحلة

When select the stage all the study material will appear

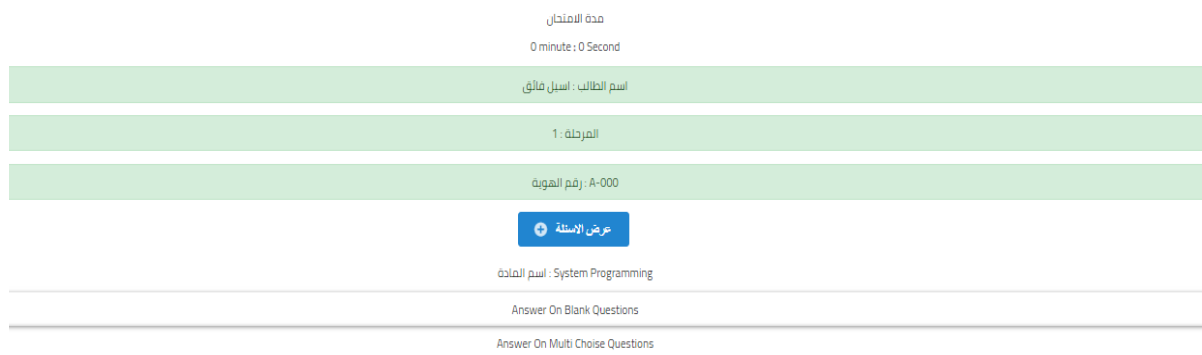
In front of instructor and he will be able to do some editing on it

### 3-8: Online exam page



In this window on the right side its shows the logging in process for the student so they can take the online exam.

First thing the student insert his/her name, then in the second filed the student insert her/his ID number and at the end he/she can select the year/stage they at.



After the student log in this window will appear containing the duration of the exam, and the student & exam information.

When the student press the Project/Show Questions (عرض الاسئلة) button the test questions will be visible and the exam will start.

مدة الامتحان  
0 minute : 25 Second

اسم الطالب : اسيل ماضي

المزود له : 1

رقم الهوية : A-000

System Programming : اسم المادة

Answer On Blank Questions

---

Q1 \ Often referred to as processor the \_\_\_\_\_ controls the operation of the computer and performs its data processing functions.

Q2 \ Often referred to as processor the \_\_\_\_\_ controls the operation of the computer and performs its data processing functions.

---

Answer On Multi Choise Questions

Q1 \ A \_\_\_\_\_ system is a set of interrelated subsystems.

hierarchical ☐

B ☐

C ☐

Q2 \ It is also \_\_\_\_\_ design issue whether a computer will have a multiply instruction.

architectural ☐

B ☐

C ☐

انهاء الامتحان

When the test began it will be just as the picture above. The student can answer the question and when she/he finishes the test the student must press the Finish Exam (انهاء امتحان) button when the student press it a check popup window will appear to confirm if she/he want to finish the exam.

## View Result of Online Exam:



تسجيل دخول الاساتذة

Login

تسجيل دخول الطالب

Login

عرض النتيجة

When the student press the View Result (عرض النتيجة) button a new window will appear that require from the student to enter his/her student ID with the stage/year they at.(as shown in the picture below)

اسم الطالب :

المادة      الدرجة      من      التاريخ

After doing all the steps above the student results will show up containing all the test results she/he had done before with the date.

اسم الطالب : اسيل فائق

المادة	الدرجة	من	التاريخ
System Programming	2	4	2019-04-29
System Programming	0	4	2019-04-29
System Programming	2	4	2019-04-29
System Programming	0	4	2019-04-29
System Programming	3	8	2019-04-21

## 3-9: System Using Requirement

The instructor need a simple knowledge in Microsoft excel, so that he/she can upload the question and the student information using the Microsoft excel.

The screenshot shows a Microsoft Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K
1	Computer technology is changing at a _____ pace.	rapid	A	B							
2	Computer _____ refers to those attributes that have a direct impact on the logical execution	architecture	A	B							
3	Architectural attributes include _____.	I/O mechanisms	A	B							
4	_____ attributes include hardware details transparent to the programmer.	Organizational	A	B							
5	It is a(n) _____ design issue whether a computer will have a multiply instruction.										
6	It is a(n) _____ issue whether the multiply instruction will be implemented by a special multiply unit or by a mechanism that makes repeated use of the add unit of the system.	architectural	A	B							
7	A _____ system is a set of interrelated subsystems.	organizational	A	B							
8	An I/O device is referred to as a _____.	hierarchical	A	B							
9	When data are moved over longer distances, to or from a remote device, the process is known	peripheral	A	B							
10	The _____ stores data	data communications	A	B							
11	The _____ moves data between the computer and its external environment.	main memory	A	B							
12	A common example of system interconnection is by means of a _____.	I/O	A	B							
13	It is a(n) _____ issue whether the multiply instruction will be implemented by a special multiply unit or by a mechanism that makes repeated use of the add unit of the system.	system bus	A	B							
14	_____ provide storage internal to the CPU.	system interconnection	A	B							
15	The _____ performs the computer's data processing functions.	Registers	A	B							
16		ALU	A	B							

In this way we add the (Multi-choice) questions  
Cell **A** refer the questions, Cell **B** refer to the answer and other cell refer to another choices



## **CHAPTER FOUR CONCLUSION AND SUGGESTIONS**

## **4-1: Conclusion**

In this research we have built a Test Generation system at the university using Angular and PHP application language, which added high flexibility in the storage process providing data. Finally, our project is able to choose any type of question that facilitate the operation of make an exam and then the instructor can print the result. In addition our project is able to find final grade for any student who make quiz or test with online exam which is provided in our project.

This system provides a convenient service for both instructor and student in the academic environment.

## 4-2: Suggestions

Our suggestions for future work are:

1. For math exam we aspire to add an algorithm for generate random number in the test
2. Wish to adopt the system to be used at University of Diyala.

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