Al-Balqa Applied University
Ajloun University College
Department of Applied science

CLEVER TEAM.

A Graduation Project Submitted to the Coding Academy By Orange / Fulfilment of the Requirement of the graduation from OCA

By

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Dedication

Alhamdulillah for everything. We can never thank Allah enough for the countless bounties He blessed us with.

We dedicate this thesis …

To our parents, may God protect them and provide them with health and wellness; we dedicate this work to you as thanks, appreciation, and gratitude for your sacrifice, support, and endless love.

To our lovely sisters and brothers who taught me the meaning of collaboration, toleration, and caring. To our doctors, our friends, and colleagues. To whom we owed our success

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ABSTRACT

Background: Technology has played an important role in improving and expanding education worldwide. Website is a part of technology through which institutions and companies can easily and cheaply share and advertise their profiles with rest of the world. It helps the students updated, notified and provides information regarding so many educationally important things to their education. So we aim we aim to help students from IT faculty to automate an important service, which is the service of obtaining study materials through a website in an easy, fast, and inexpensive way.

Objective: The system is looking to achieve safe, efficient, usable, reliable, and easy to obtain, maintain data integrity and provide access for IT students and teachers.

Methodology: This is done by collecting and providing study materials and test questions for students on a single website and by providing many educational links and knowledge resources that contribute to enhancing the learning process for students.

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Chapter One: An Overview

1.1. Introduction

Nowadays, having a website is an essential part of any profession or education process. The website strongly influences the image of your company or institution. When you are interested in exploring your business or developing your knowledge worldwide, this is important. Through the website, you will gain identity, global presence, and a good educational channel [1].

Technology has played a significant role in improving and expanding education worldwide. Website is a part of technology through which institutions and companies can easily and cheaply share and advertise their profiles with rest of the world [1]. While websites may appear cold and distant in comparison to traditional methods, they also provide novel and fascinating opportunities.

Therefore, educational websites are important to students [2]. They keep the students updated, notified, and provides information regarding so many educationally important things to students, and help them to enhance their studies [3].

The idea of the current system aims to provide services for IT students in Jordanian universities by providing educational courses, scientific resources, and student tips that facilitate learning and education for them.

The system is based on collecting the largest possible number of scientific materials that IT students need during their university studies and placing them all in one place that is easy to obtain.

1.2. The Aim

The system is looking to achieve safe, efficient, usable, reliable, and easy to obtain, maintain data integrity and provide access for IT students and teachers.

1.3. Statement of Problem

At the beginning of each semester, students in universities have difficulty obtaining study materials, in addition to the long time, they spend searching for these materials. Some may have to request materials by posting on social media, which calls for an agreement between the two parties to meet and exchange materials, and this may take a lot of time if it really works.

It is also not limited to the difficulty of obtaining study materials, but also to the difficulty of obtaining previous questions of exams for these materials, and the lack of knowledge in external educational resources.

Moreover, as a result of the Corona pandemic and the sudden shift in the learning process, which has become distance learning, websites that provide educational materials have become more interested in students [4]. For these reasons, we have decided to create an educational website.

1.4. Possible Solutions

We aim to help students from IT faculty to automate an important service, which is the service of obtaining study materials through a website in an easy, fast, and inexpensive way.

This is done by collecting and providing study materials and test questions for students on a single website and by providing many educational links and knowledge resources that contribute to enhancing the learning process for students.

1.5. Programming and Implementation Tools

Programming Tools

- Visual studio code
- Chrome
- Front End (HTML5, CSS3, React, JavaScript.)
- Back End (PHP 8)
- XAMMP
- MVC (Design pattern).
- Laravel 8

Website requirements

- Internet connection
- Any device connected to the internet
- Internet browser

1.6. The Scientific Contribution(s)

This research provided many added values to the e-learning process, at present, e-learning has become a necessity and may even be the future.

“In the wake of the COVID-19, the adoption of online learning has increased dramatically, and for good reasons. Considering the added advantages such as flexibility of learning, online will define the future of education for the times to come.” [5]

"Clever Team" page has been able to help the IT College and its students by placing all the courses they need, making the students' learning path clear, easy, and uncomplicated.

Obtaining any academic file at any time or study questions through the push of a button is very important for students, and this is what we have succeeded in providing through our website.

Chapter Two: System Design

2.1. Introduction

In This chapter, we will describe the system and structure of the data using (UML Use Case Diagram, UML ER model, and website layers)

2.2. UML Use Case Diagram

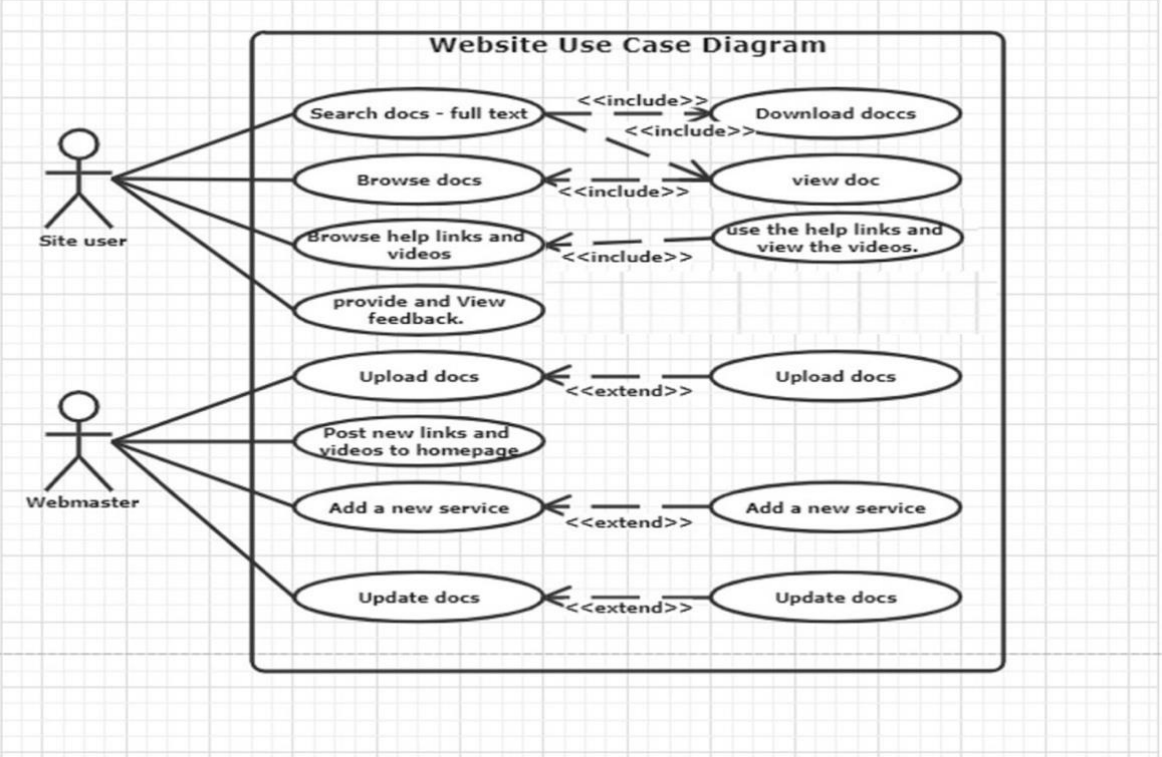

Fig 2.1: UML Use Case Diagram shows the two main components of our web system.

The website usage diagram is a use case diagram. This shows how a web system can be used, and the following represents a UML use case that has two main components, site user and site administrator.

2.2.1 Site user

This is a key entity in the website use case diagram. The site user can extend to the following use cases; Search different documents (supplies of information for each material, courses, and question) for all IT students at any level and semester, browse documents (materials, courses, and questions), Browse help links and videos, provide and View feedback.

Under the use case of search documents, the site user can download the documents and the browsing document extension. The site user also has options to view the document and use the help links and view the videos.

2.2.2 Webmaster

Under this element, Webmaster has the use case extension for uploading or updating documents (materials, courses, and questions), Adding a new service, and posting new links or videos to the homepage.

2.3. UML ER model

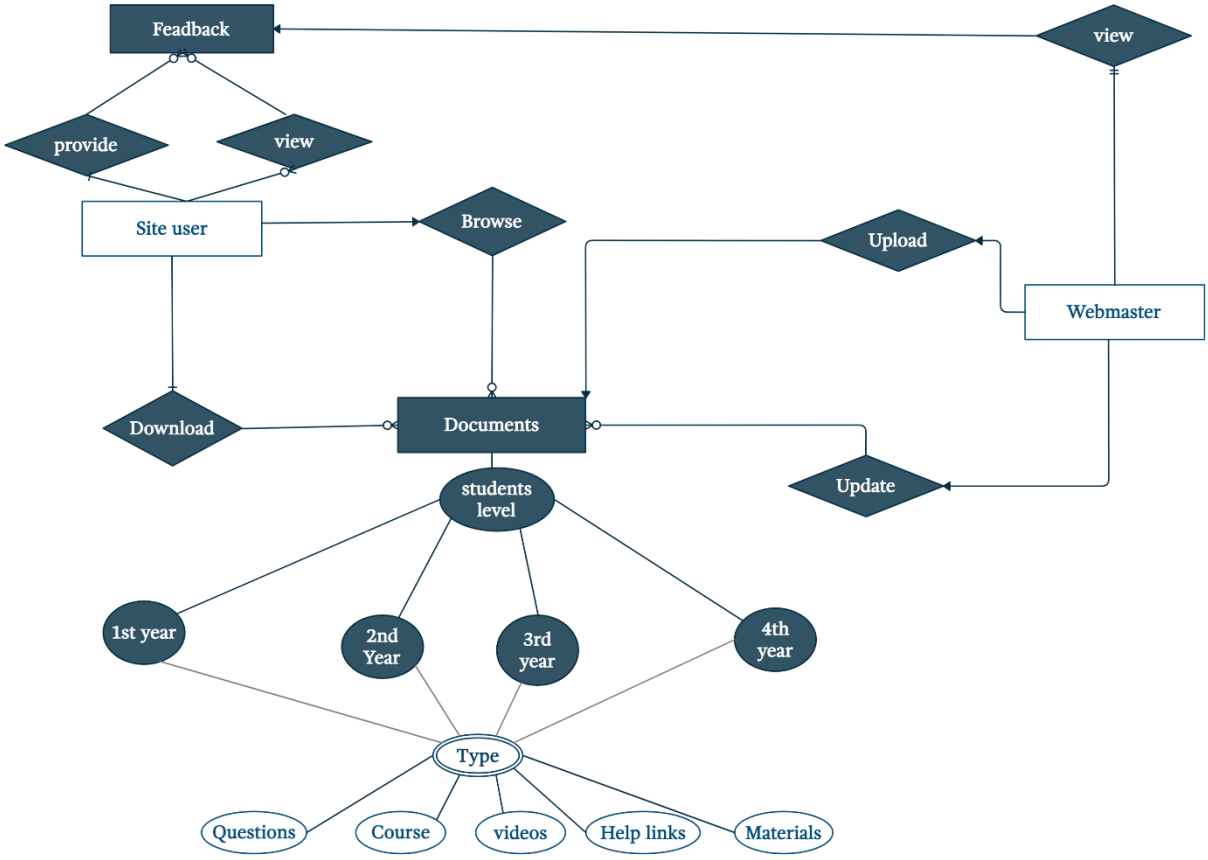

Fig 2.2: UML ER model represents different entities within a system and how they relate to each other.

An Entity Relationship Diagram (ERD) represents different entities within a system and how they relate to each other. An ER, a graphical representation of entities and their relationships to each other.

The Site user's first entity contained options such as browse documents (materials, courses, and questions), help links, videos, and feedback.

The second entity, the Webmaster, contained the options for uploading or updating documents (materials, courses, and questions), new links, and videos.

2.4. Website Layers

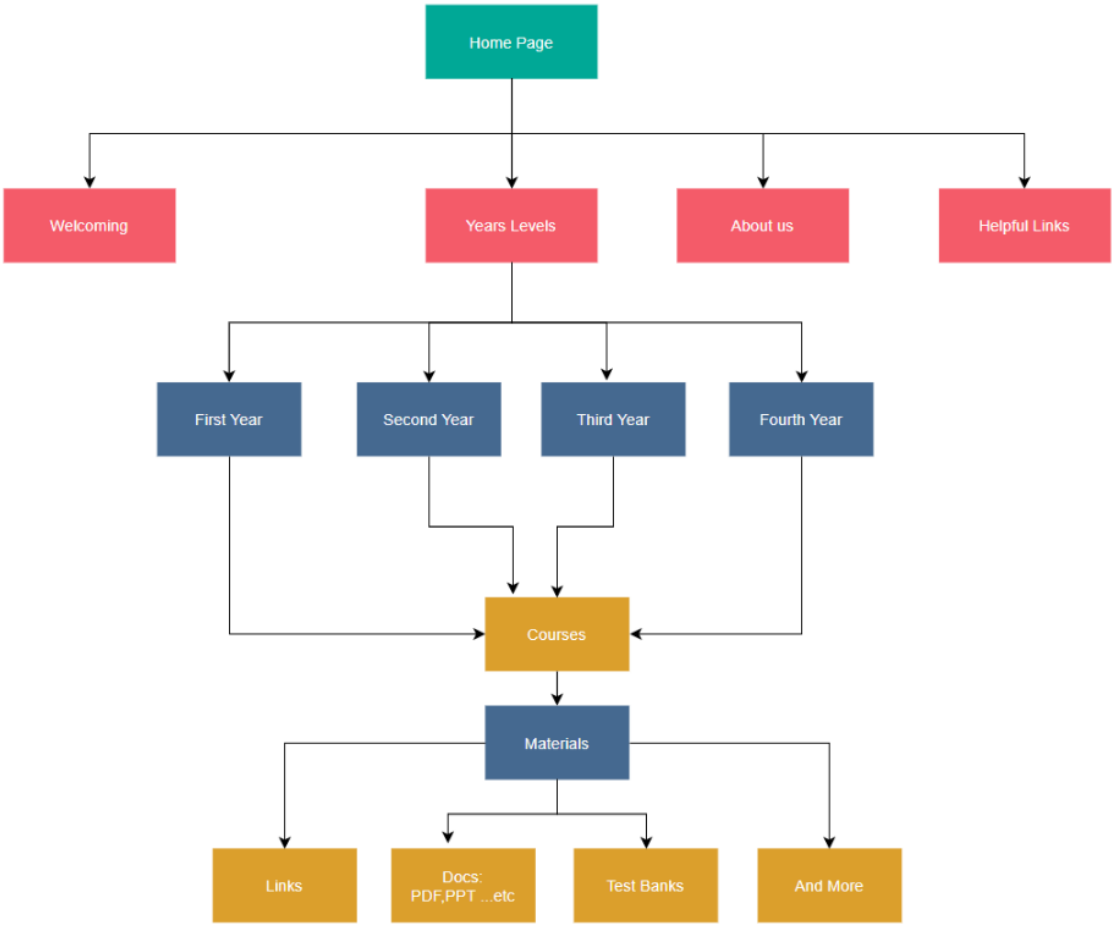

Fig 2.3: Website Layers shows the stages through which the user can go downward

The schematic diagram of the layers of the website shows the stages through which the user can go downward, starting from the home page of the site, which sub-contains (Welcome, About Us, and Useful Links) and mainly on the (year's level) layer, from which four basic academic years branch off. The user can choose the year he wants.

After choosing the year of study, we move to the courses layer, which contains different materials in the last layer, including (links, document or PowerPoint files...etc., test bank, and more). Thus, our site has provided the services that students need through these main layers.

Chapter Three: The Implemented System, Tests

3.1. Introduction

In This chapter, we will describe the main requirements for users and the website. And we will show the test for the system and the task that we want to achieve in the system.

3.2. The Implemented System's Requirements

The implemented system would be run at the following requirements:

3.2.1 User requirements

- The Website should be available and able to handle multiple transactions at a time.
- The Website must provide various materials and questions for all IT students at any level and semester.
- The Website must provide help links.
- The Website must include more than one Supply of information for each material and course.
- The Website must support students to develop their learning
- The Website must be reliable, and the evaluation must be real throw Showing the provide feedback
- The Website must be portable and secure.

3.3. The Implemented Toolset

The tools that are used for implementation range from programming languages and data manipulation language to implementation tools, as shown in brief in section (1.5). The following are the programming and implementation tools in detail:

3.3.1 Details of Programming Tools:

- **Visual Studio Code**

Visual Studio Code is a code editor redefined and optimized for building and debugging modern web applications.

- **Google Chrome's**

Developer Tools is a great **tool for troubleshooting**, improving network performance, seeing your site on different screen sizes and resolutions, and getting information on where your site needs improvement. There are a lot of features, and you can add even more through extensions.

- **Front End (HTML5, CSS3, React, JavaScript.)**

Front-end web development, or client-side development, refers to working with HTML, CSS and JavaScript for a website or web application that allows users to see and interact with them directly

- **Xampp**

Xampp is a package of independently created programs installed on computers that use a Microsoft Windows operating system (techstream.org). Xampp is a principal component of the package: Apache, MySQL, and one of PHP, Perl, or Python.

- **Back End (PHP 8)**

PHP is a scripting language that can manipulate information held in a database and generate web pages dynamically each time content is requested by a browser. PHP was used for server programming which is basically queries used to link the website to the database. Other programs were included, such as PHP My Admin which provides a graphical user interface for the MySQL database manager.

- **MVC Pattern**

The Model-View-Controller (MVC) is an architectural pattern that separates an application into three main logical components: the model, the view, and the controller. Each of these components are built to handle specific development aspects of an application.

- **Laravel 8**

Laravel is an open-source PHP framework, which is robust and easy to understand. It follows a (MVC) model-view-controller design pattern. Laravel reuses the existing components of different frameworks which helps in creating a web application. The web application thus designed is more structured and pragmatic.

3.4. The Implemented System

Our team conducted several interviews with graduates and students of IT departments in Al-Balqa Applied University to discuss their needs, problems, visions, and expectations to run on the proposed website. The importance of updating the guide to the electronic website and how to create a comprehensive web page with all summaries, questions, courses, explanations, helpful video links, and even materials, whether shared or sectional. Without the need for lengthy research to waste time, usually before the time of study or exams.

To create the site interface, we used Visual Studio Code, which provides an easy and modern environment for writing different programming languages.

The design interface was implemented by HTML5, CSS3, React, JavaScript, and the characteristics and integrity of the design were ensured by displaying the work on the Google Chrome browser.

To create the back end of the site we used PHP 8 to Generate web pages dynamically each time content is requested by a browser.

And that is by uploading it to a server Xampp, which is an essential element in creating data and uploading it to the site.

Then we started to test the features on the site and add the basic elements (school years, study subjects...etc.) and all the features were successful and the site became ready for display.

3.5. How the System work

A user's web browser issues an HTTP request from the Contact page(database). On clicking the button, the content of the fields is posted from the user's browser as a request to the web server. On receiving the request, the web server retrieves the file, database from its disk or memory and passes it to the php, php.dll, after processing the file php

sends the HTML page to the server.

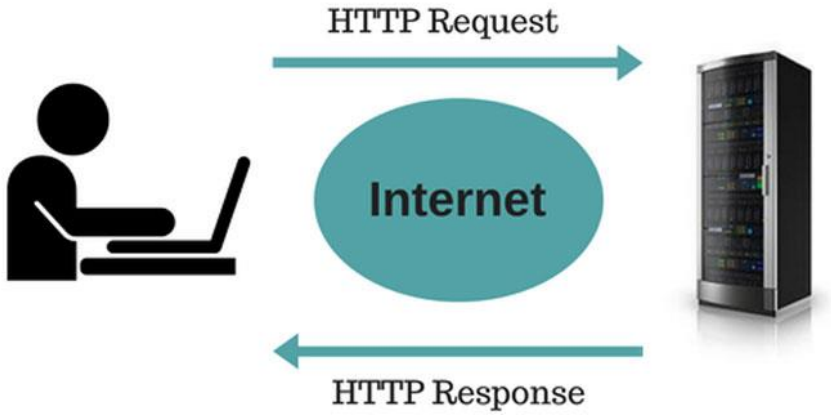

Fig 3.1: Transfer of Request

3.6. The Interaction with The Implemented System

In order to test the implemented system. Figures below depict a typical interaction of user with the implemented system through waving the demonstration version.

Fig 3.2: Landing Page of the website, welcoming layout

Fig 3.3: Landing Page of the website, Services Section

Fig 3.4: Landing Page of the website, Select Course Section

Fig 3.5: Courses Material Page of the website, Select Course Material to Download.

Fig 3.6: Courses Material Page of the website, Download the material selected.

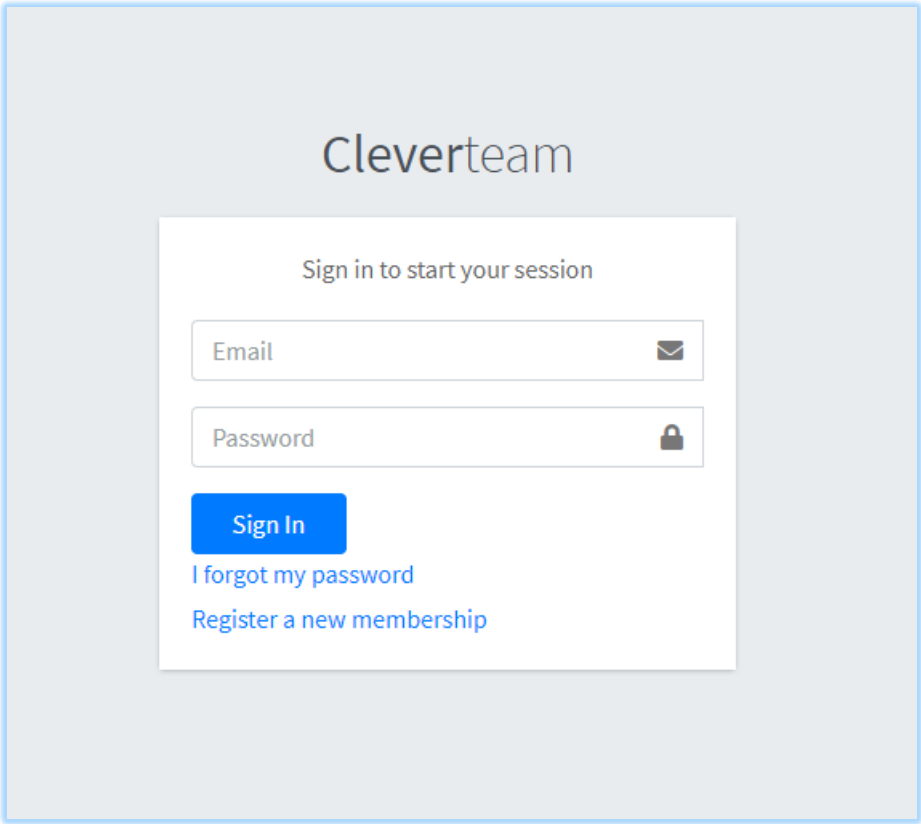

Fig 3.7: Admin Login Page of the website.

Fig 3.8: Admin Control Page of the website to Add Course

Fig 3.9: Admin Control Page to Update a selected course.

Fig 3.10: Admin Control Page to Add a Material of selected course.

Fig 3.11: Admin Control Page to Update a Material of selected course.

Chapter Four: Conclusions, Limitations and Future Works

4.1. Conclusions

This site has been made out of our belief in the message of science and knowledge and in the hope of spreading this knowledge and making it available to all students, it will save them a lot of time, effort, and money while studying or searching for academic sources; Because he will find them all in one site, which is Clever Team.

4.2. Limitations

The researchers suffer from many limitations during the design and implementation of our system, the main limitation is in collecting materials and online documents at this time.

4.3. Suggestions for Future Works

The designed and implemented system presents many fruitful lines of continued graduation research, and opens the door to a range if future work, as listed in the following:

1- Adding more Jordanian universities to the list of universities on the site.
2- The site includes all disciplines, not just computer science.
3- offer an online tests site that gives a simulation for the real exams.

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