

Design & Implementation of Student Information Management System for Karbala University

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Abstract— We can design web pages site for the companies, foundations and the government offices to spreading the information & details for the offices & foundations to facilitation connecting with it by using the internet in any time, and any place. As well as when we design this pages the customer needs to circulate some information which his needed, such that this information will store at a data base form, for example data base contains at the tools submitted to sales, or a data base contains at the information related of the employs for the specific foundation...ect. This research talk about How to design the web pages site and How to test this site, as well as How to implementation this site.

Index Terms—(SIMS , SIS , Karbala , Wissam , SHIATS)

I. INTRODUCTION

A web page technology is a web document or other web resource that is suitable for the World Wide Web and can be accessed through a web browser and displayed on a monitor or mobile device. This information is usually in HTML or XHTML format, and may provide navigation to other web pages via hypertext links. Web pages frequently classify other resources such as style sheets, scripts and images into their final presentation.

Web pages may be retrieved from a local computer or from a remote web server. The web server may restrict access only to a private network, e.g. a corporate intranet, or it may publish pages on the World Wide Web. Web pages are requested and served from web servers using Hypertext Transfer Protocol (HTTP).

II. REVIEW OF LITERATURE

In the recent ten years, the web pages become a popular and widely used in the ministries and the official corporations, as well as special corporations. Because it has many specificacts to store and organize and manage the information, and make this information available to whole peoples and faculties. Therefore it is using to connect all the official and special offices with them and commutation information, therefore

there many persons written in this field. Now we will browse some of the persons which written in this field.

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III. MATERIALS AND METHODS

The web pages systems is a base to publishing and commutation the information between the different peoples on the earth, such that it provide all the common extreme with the information in suitable time, it provides the different extreme at the different information, if the extremes are increases and the type of information are increases also, the complexity of website will increase also, and If we want built a powerful website and consistent, in the first we should analyses the information and study the system, it include build the web pages depends on the information that contains each page, and build the relationship between these pages in website, after that we should specific the tools (programs) that needs to design these pages, it include the hardware requirements and software requirements.

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Then the next step implement design of our website and written the code of this system, finally before publish of our website we should test it and explorer the errors in this website, if it found, then we can publish it. It is illustrate in bellow.

- Feasibility study.
- Analyses & planning of the System.
- System requirement specification.
- System design.
- Coding.
- System testing.
- System implementation.

1- Feasibility study

A Feasibility study is conducted to identify the best design that meets all the website requirements. This includes an identification description, an evaluation of the proposed systems and selection of the best design for the job. It is involve:

- Operation Feasibility.
- Technical Feasibility.
- Economic Feasibility.

2- Analyses & planning of the System

We can summarize this stage in two steps study of the system and input & output representation, it is shown inn below:

A-A- Study of the system.

The study of the system involve two things, they are:

Administrative user interface

This interface concentrates on the consistent information that is practically, part of the organizational activities and which needs proper authentication for the data collection. These interfaces help the administrators with all the transactional operation like Data insertion, Data deletion and Date updating along with the extensive data search capabilities.

The operational or generic user interface.

The interface helps the end users of the system in transactions through the existing data and required services. The operational user interface also helps the ordinary users in managing their own information in a customized manner as per the included flexibilities.

B-Input And Output Representation

Input design is a part of overall system design. The main objective during the input design is as given below:

- To produce a cost-effective method of input.
- To achieve the highest possible level of accuracy.
- To ensure that the input is acceptable and understood by the user.

The following diagram represented the data flow diagram that showing the input and output operation in our system.

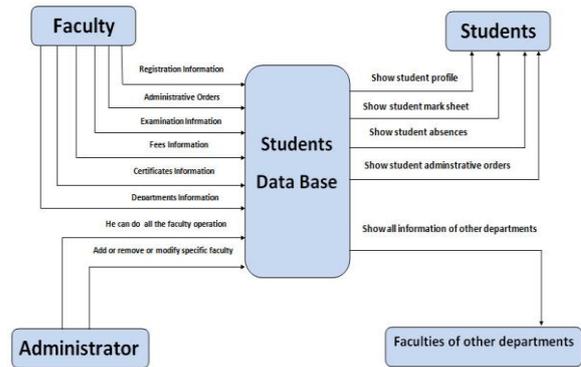


Figure 1. showing the data flow diagram

3- System requirement specification

The second step is specify the website building requirements, it include the hardware requirements and the software requirements, it is shown in below.

A-Hardware Requirements

To built and execute our website, we need to the following hardware requirements.

- Processor : Pentium IV.
- Ram : 512 MB RAM.
- Hard Disk : 80 GB Hard disk.

B-Software Requirements

To built and execute our website we need to the following software requirements.

- Database : Oracle 10g

If we have database in our website, the Oracle Database has been commonly used to store files closely associated with database applications including medical images, invoice images, documents,etc. in the website.

- Programming Language : Java Language

There are many applications of the computer programs, such that we can use the word processors to write documents, Web browsers to explore the Internet, and email programs to send email. These are all examples of software that runs on computers. Software is developed by using programming languages. Such that there are many programming languages to developed these software, like Cobol, Fortran, Basic, Ada, C-language, C++ , Visual basic and Java language,....ect. Each of these languages was designed for a specific purpose. So the programmers is preference the java language at the others programming languages, because the java language is enables users to develop and deploy applications on the Internet for servers, desktop computers, and small hand-held devices. The future of computing is being profoundly influenced by the Internet, and Java promises to remain a big part of that future. Java is the Internet programming language. It is a powerful programming language and helpful to review computer basics, programs, and operating systems.

- Web Technology : JDBC, Servlets, JSP

The vast majority of professional web sites today have some sort of database connectivity. Webmasters have hooked online front ends to all manner of legacy systems, including package tracking and directory databases, as well as newer systems such as e-Commerce Systems.

Although database-backed systems may be more challenging to develop, the advantages of allowing a database to manage data records are many fold. Within the database, data definition and manipulation is handled through Structured Query Language (SQL). So all database operations that can be performed on a stand-alone application can be performed on servlets too. Such that all the database operations are performed on the server side, and only data is passed to the client.

The Servlets are protocol and platform independent server-side software components, written in Java. They run inside a Java enabled server or application server, such as the Web Sphere Application Server. Servlets are loaded and executed within the Java Virtual Machine (JVM) of the Web server or application server.

Java Server Pages (JSPs) are similar to HTML files, but provide the ability to display dynamic content within Web pages. JSP technology was developed by Sun Microsystems to separate the development of dynamic Web page content from static HTML page design. The result of this separation means that the page design can change without the need to alter the underlying dynamic content of the page. This is useful in the development life-cycle because the Web page designers do not have to know how to create the dynamic content, but simply have to know where to place the dynamic content within the page.

- Client – Side Scripting : Java Script

JavaScript (JS) is an interpreted computer programming language. It was originally implemented as part of web browsers so that client-side scripts could interact with the user, control the browser, communicate asynchronously, and alter the document content that was displayed.

- User Interface : HTML / CSS

HTML is the main markup language for creating web pages and other information that can be displayed in a web browser. The HTML is written in the form of HTML elements consisting of tags enclosed in angle brackets like (<html>), within the web page content. Such that the purpose of a web browser is to read HTML documents and compose them into visible or audible web pages, the browser does not display the HTML tags, but uses the tags to interpret the content of the page.

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation semantics (the look and formatting) of a document written in a markup language. Its most common application is to style web pages written in HTML and XHTML, but the language can also be applied to any kind of XML document, including plain XML, SVG and XUL.

CSS is designed primarily to enable the separation of document content (written in HTML or a similar markup language) from document presentation, including elements such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple pages to share formatting, and reduce complexity and repetition in the structural content.

- Server : Tomcat 7.0

The Apache Tomcat server is an open source, Java-based web application container that was created to run servlet and Java Server Pages (JSP) web applications. It was created under the Apache-Jakarta subproject; however, due to its

popularity, it is now hosted as a separate Apache project, where it is supported and enhanced by a group of volunteers from the open source Java community.

Apache Tomcat is very stable and has all of the features of a commercial web application container – yet comes under Open Source Apache License. Tomcat also provides additional functionality that makes it a great choice for developing a complete web application solution. Some of the additional features provided by Tomcat—other than being open source and free—include the Tomcat Manager application, specialized realm implementations, and Tomcat valves.

4- System design

website design is the solution to the creation of a new website. This phase is composed of several systems. This phase focuses on the detailed implementation of the feasible website. It emphasis on translating design specifications to performance specification. website design has two phases of development logical and physical design. During logical design phase the analyst describes inputs (sources), out puts (destinations), databases (data sources) and procedures (data flows) all in a format that meets the uses requirements. The analyst also specifies the user needs and at a level that virtually determines the information flow into and out of the system and the data resources.

The physical design is followed by physical design or coding. Physical design produces the working system by defining the design specifications, which tell the programmers exactly what the candidate website must do. The programmers write the necessary programs that accept input from the user, perform necessary processing on accepted data through call and produce the required report on a hard copy or display it on the screen.

5- Coding

The goal of the coding phase is to translate the design. The aim in this phase is to implement the design in the best possible manner. Well known code can reduce the testing and maintenance effort. During coding, the focus should on developing programs that are easy to read and understand and not simply on developing the programs that are easy to write. Simplicity and clarity should be strived for during the code phase. An important concept that help the understandability of the programs is structured programming. The program that should be organized as a sequence of statements and during execution of the statements is executed in the sequence given in the program. There are many different criteria for judging of the program, execution time and required memory.

6- System testing

Website testing is a critical aspect of Software Quality Assurance and represents the ultimate review of specification, design and coding. Testing is a process of executing a program with the intent of finding an error. A good test is one that has a probability of finding an as yet undiscovered error. The purpose of testing is to identify and correct bugs in the developed website. Nothing is complete without testing. Testing is the vital to the success of the system.

7- System Implementation

website publishing includes all those activities that take place to convert from the old system to the new. The old system consists of manual operations, which is operated in a very different manner from the proposed new system. A proper implementation is essential to provide a reliable system to meet the requirements of the organizations. An improper installation may affect the success of the computerized system.

IV. RESULT AND DISCUSSION

This system will facilities us explorer and monitoring all the activities happening in the collage from the first day to the last day in this course, such that we can get at right information in the right time.

Previously the information commutation operations was very difficult between the peoples for example send and received the messages, information commutation, cultures commutation, education commutation and knowledge publishing because it take long time and highest effort and expensive cost, all this reasons to be information commutation operations is impossible operation.

Recently, when can use the world wide web (WWW) and websites to publishing the acknowledge between the nations, such that we can get at desired information in short time, low effort, from any place and suitable cost. As well as we can create and design new website to publish own information to be available for all peoples.

V.CONCLUSION

The SIMS of Karbala university is expected to increase the efficiency of the college's record management, decrease time required to access and deliver student records, decrease data duplication, increase data integrity, increase user access and convenience, decrease time spent on non-value added tasks and increase ability of staff to better serve the student population.

To sum up, the developing of Student information management system for Karbala university was a matter of essence. It will be a medium for the College Management system for the proper management of the student's information in an organized way. It is now essence for the organization to transmit the student's records to the system.

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