**WEB BASED INFORMATION SYSTEMS**

Online Registration Appointment System

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# Chapter 1: Introduction

Information systems are now part of individual’s daily activities. It has increased the efficiency and decreased the time for process. With the help of an online appointment system Public service providers like Registration services are now able to connect with both existing and prospective clients online. This is a fast and efficient way to make appointments with clients and it saves them a lot of time lining up in unnecessary queues at registration centers. The National Identification and Registration currently has no appointment booking system to keep record of clients’ information and make reservations. To address this issue, a proposed solution will be implemented were an online reservation system will be developed and deployed to clients to make their reservation at a convenient time and place and the reservation will immediately be confirmed by the Authority.

The aim of this project is to develop a system for NIRA Clients and make a successful appointment online and immediately get reservation confirmation about their appointment. This system will be design in an appropriate and flexible way that will test and validate any input provided by clients earlier. A database will be created to record each client’s details. It will also bring convenience to the clients by saving their time and effort.

In this project, the system developed will be used to capture data and manage all reservation process.

# Chapter 2: Literature Review

The internet is widely used by many organization, institution and even for personal use today, it has become a major trend because of the way it provides free information exchange daily (Palmer, 1999). Over 400,000 networks in the world today are communicating with each other (Rivers & Judd, 2001). The internet is also used to gather information regarding a place such as hotel and even make reservation with that hotel online.

Online reservations are becoming a very popular method for booking for services in businesses that operate online. This is the fastest way to contact and communicate with the service provider. Ivanovo Mathew (2008) defined Online booking “as a tool to store, publish and update the dynamic data availability and prices and additionally provide the users with a regular reservation process”. Online reservation systems are an easy prearrangement for clients to reserve registration time directly via the internet once availability is confirmed. The online booking systems grants both existing and prospective client complete authority and power on the service booking via the internet. This means that clients can have any special request, make payment and get confirmed about their appointments within a short period of time. (Wagner, 2001). Clients want an easy and simple way to connect to a service provider for either enquiry or make a reservation. To do this, an online booking system is needed (James, 2010).

# 2.1 Tools and Technology

The various tools used in developing the system are PHP (for creating codes that links the web pages to the database), MYSQL (for creating database), HTML and CSS (for designing and styling the website). These tools are used to develop an interactive system with users.

The **Hypertext processor** (PHP) is a programming language that allows web developers to create dynamic content that interacts with database (Taie, 2013). For this project, the PHP Code used is embedded into the HTML source codes which is linked to the database and then interpreted by a web server, that generates the page document for proper understanding. PHP is used because; it quickly identifies errors in codes and easier to fix problems, supports **WAMP**, simple and easy to use and it is speedy

**Structured Query Language** (SQL) is a database programming language designed for managing and retrieving data. It specializes in updating, deleting and requesting information from database. SQL is used in this project to create database that stores user’s information (data). The benefits of SQL to this project are: it is easy to use, an open source and user friendly.

**Hypertext Markup Language** (HTML) and **Cascading Styling sheet** (CSS) are tools used in building Web pages. (Berners-Lee. 1998). HTML provides the structure of the web pages (for example headings and paragraphs). CSS is a language created to define and style the appearance of content and other materials of the Web page (Taylor, 2013) (for example fonts and size). The advantages of using HTML and CSS are: it has a build in function (easy to use) that allows users specify various format and style properties.

**Notepad++** is used in this project as the main source code editor needed in developing the system. It supports several languages, which makes it suitable for this project.

# Chapter 3: Requirements Specification

A requirement is a ‘statement regarding an intended product that specifies what it should do or how it should perform’. (Rogers. 2011.). The two types of requirements are:

# 3.1 Functional Requirements

A functional requirement is a function of a system and its components. It describes a set of input, the behavior and output. The functional requirements for this project are:

**For Client reservation /Appointment**

* **RQ1,** The system should allow clients to reserve a day.
* **RQ2,** The system should record client personal details (for example, name, phone).
* **RQ3**, The system should indicate Registration Day and time Availability
* **RQ4,** The system should allow customers modify any information provided earlier.
* **RQ5,** The system should allow space for customer feedback

**System Administrator**

* **RQ1,** The system shouldallow the system administrator to add or delete services.
* **RQ2,** The system shouldallow the system administrator to login and logout from the system
* **RQ3,** The system should allow the system administrator to update Registration center information.

# 3.2 Non-Functional Requirements

A non-functional requirement specifies the properties of the information system itself. Some of the non-functional requirements for this project are:

**Availability:** The system will be available during normal Registration operating hours

**Reliability:** the performance of the system is consistent according to its specifications

**Speed:**

* The system should respond to users request within 2-3 seconds
* The system must retrieve information

**Usability:** The system gives direct input on how real users use the system.

**Portability:** The system supports every operating system

**Efficiency:** The system provides appropriate output based on the list of inputs

# Chapter 4: System Analysis and Design Phase

# 4.1 System Deployment Diagram

A deployment diagram is used to visualize the physical component of a system which consists of nodes and their relationship. (James,2009). Below is the Registration Appointment system deployment diagram. This diagram shows how users can access the website by using different web browsers as listed below, Apache will serve as the web server and MYSQL will be used to client information in categorized tables in the database.



Figure 1: Deployment Diagram

# 4.2 Database Design

**Table: Reservations**

This table is used to store clients’ appointment details.

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Length | Description |
| id | int | 6 | id (P.K) |
| name | Varchar | 30 | Client Name |
| email | Varchar | 30 | Email address |
| phone | int | 12 | contact |
| service | int | 20 | contact number |
| seldate | Date | 12 | Appointment Date |
| status | Date | 20 | Appointment status |
| SysDateTime | Boolean | timestamp | System Date |

*Figure 2: Database design*

# Chapter 5: Implementation and Testing

Series of testings’ and evaluation will be use on the developed system in order to avoid system errors and also make sure every functional requirement gathered from the requirement stage is been implemented in the system.

# 5.1 Functional Testing

Functional testing is done by the developer to verify that each function in the system software operates with the requirements specifications. Functional testing involves checking client/server application (This project will use apache webserver), user interface, database and the system functionality which is tested by providing required input and then verify the output and compare the results with the expected result. The functions that will be tested in the section are:

* Mainline functions: This is the testing of the system main functions.
* Basic Usability: basic usability is usability testing of the system to check whether a user can easily navigate through the webpages without any difficulties.
* Error Condition: This is to check or errors and whether error messages are displayed. Since the system will be developed using PHP codes it is easier to identify an error once the developer runs the page.

# Conclusion

In conclusion, this report has been able to address the issues clients face when queueing up at registration centres in Uganda trying to access NIRA services by developing an online booking system for clients to make reservation at their own comfort. It has discussed on the types of method used to gather the requirements needed, the type of development methodology selected for the research. In the course of this research project, a few limitations, challenges and incomplete work were faced and these are;

* The System is intended to have a date picker instead of a text box for date reservation where by only the available dates and times will be pickable and the rest would be greyed out.
* In the website, clients can make reservations but are unable to get feedback upon successful booking. The system is intended to provide notification upon successful booking and also provide an addition page where the client can make changes in the appointment.
* The System administrator can only access the information gathered through the database; however, the system is intended to have a different page where the System administrator can login and access the collected information for management.