# HEALTH SERVICES

## END TERM REPORT

### BY

### K19NS      GROUP - 01

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# <u>Student Declaration</u>

This is to declare that this report has been written by us. No part of the report is copied from other sources. All information included from other sources have been duly acknowledged. We aver that if any part of the report is found to be copied, we are shall take full responsibility for it.

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# BONAFIDE CERTIFICATE

Certified that this project report

"**HEALTH SERVICES**" is the bonafide work of

"**Aditya Kumar Singh and Suyash Gupta**" who carried out

the project work under my supervision.

<<Signature of the Supervisor>>

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# Background and Objectives

The purpose of the project entitled as "Health Services" is to computerize the Front Office Management of Hospital to develop software which is user friendly simple, fast, and cost – effective. It deals with the collection of patient's information, diagnosis details, etc. Traditionally, it was done manually. The main function of the system is register and store patient details and doctor details and retrieve these details as and when required, and also to manipulate these details meaningfully System input contains patient details, diagnosis details, while system output is to get these details on to the screen. The Health Services System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The data are well protected for personal use and makes the data processing very fast.

# DESCRIPTION

**INTRODUCTION - HEALTH CARE MANAGEMENT SYSTEM PROJECT**

**1.1 Introduction:**

The project Health Services System includes registration of patients, storing their details into the system, and also computerized billing in the pharmacy, and labs. The software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. It includes a search facility to know the current status of each room. User can search availability of a doctor and the details of a patient using the id.

The Health Services System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The interface is very user-friendly. The data are well protected for personal use and makes the data processing very fast.

Health Services System is designed for multi-speciality hospitals, to cover a wide range of hospital administration and management processes. It is an integrated end-to-end Health Services System that provides relevant information across the hospital to support effective    decision making for patient care, hospital administration and critical financial accounting, in a seamless flow.

Health Services System enables you to develop your organization and improve its effectiveness and quality of work. Managing the key processes efficiently is critical to the success of the hospital helps you manage your processes.

## 1.2 Problem Introduction:

Lack of immediate retrievals: -

The information is very difficult to retrieve and to find particular information like- E.g. - To find out about the patient's history, the user has to go through various registers. This results in in convenience and wastage of time.

Lack of immediate information storage: -

The information generated by various transactions takes time and efforts to be stored at right place.

Lack of prompt updating: -

Various changes to information like patient details or immunization details of child are difficult to make as paper work is involved.

Error prone manual calculation: -

Manual calculations are error prone and take a lot of time this may result in incorrect information. For-example calculation of patient's bill based on various treatments.

Preparation of accurate and prompt reports: -

This becomes a difficult task as information is difficult to collect from various register.

## Objective :-

1) Define hospital
2) Recording information about the Patients that come.
3) Generating bills.
4) Recording information related to diagnosis given to Patients.

5) Keeping record of the Immunization provided to children/patients.
6) Keeping information about various diseases and medicines available to cure them.

These are the various jobs that need to be done in a Hospital by the operational staff and Doctors. All these works are done on papers.

**Scope of the Project :-**

1) Information about Patients is done by just writing the Patients name, age and gender. Whenever the Patient comes up his information is stored freshly.
2) Bills are generated by recording price for each facility provided to Patient on a separate sheet and at last they all are summed up.
3) Diagnosis information to patients is generally recorded on the document, which contains Patient information. It is destroyed after some time period to decrease the paper load in the office.
4) Immunization records of children are maintained in pre-formatted sheets, which are kept in a file.
5) Information about various diseases is not kept as any document. Doctors themselves do this job by remembering various medicines.

All this work is done manually by the receptionist and other operational staff and lot of papers are needed to be handled and taken care of. Doctors have to remember various medicines available for diagnosis and sometimes miss better alternatives as they can't remember them at that time.

## 1.3 MODULES:

The entire project mainly consists of 7 modules, which are

- ➢ Admin module
- ➢ User module (patient)
- ➢ Doctor module
- ➢ Nurse module
- ➢ Pharmacist module
- ➢ Laboratorist module
- ➢ Accountant module

## 1.3.1 Admin module:

- ✚ manage department of hospitals, user, doctor, nurse, pharmacist, laboratorist accounts.
- ✚ watch appointment of doctors
- ✚ watch transaction reports of patient payment
- ✚ Bed, ward, cabin status
- ✚ watch blood bank report
- ✚ watch medicine status of hospital stock
- ✚ watch operation report
- ✚ watch birth report
- ✚ watch diagnosis report
- ✚ watch death report

### 1.3.2 User module(patient):

- View appointment list and status with doctors
- View prescription details
- View medication from doctor
- View doctor list
- View blood bank status
- View operation history
- View admit history. like bed, ward ICU etc
- Manage own profile

### 1.3.3 Doctor module:

- Manage patient. account opening and updating
- Create, manage appointment with patient
- Create prescription for patient
- Provide medication for patients
- Issue for operation of patients and creates operation report
- Manage own profile

### 1.3.4 Nurse module:

- Manage patient. account opening and updating
- Allot bed, ward, cabin for patients
- Provide medication according to patient prescription
- Manage blood bank and update status
- Keep record of patient operation, baby born and death of patient
- Manage own profile

### 1.3.5 Pharmacist module:

- Maintain medicine
- Keep records of hospitals stock medicines and status
- Manage medicine categories
- Watch prescription of patient
- Provide medication to prescriptions

### 1.3.6 Laboratorist module:

- Watch prescription list
- Upload diagnostic report
- Preview of report files. like x-ray images, CT scan, MRI reports
- Manage own profile

### 1.3.7 Accountant module:

- Create invoice for payment
- Order invoice to patient
- Take cash payment
- Watch payment history of patients
- Manage own profile

# REQUIREMENT SPECIFICATION

## 2.1 INTRODUCTION:

To be used efficiently, all computer software needs certain hardware components or the other software resources to be present on a computer. These pre-requisites are known as(computer) system requirements and are often used as a guideline as opposed to an absolute rule. Most software defines two sets of system requirements: minimum and recommended. With increasing demand for higher processing power and resources in newer versions of software, system requirements tend to increase over time. Industry analysts suggest that this trend plays a bigger part in driving upgrades to existing computer systems than technological advancements.

## 2.2 HARDWARE REQUIREMENTS:

The most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware. A hardware requirements list is often accompanied by a hardware compatibility list (HCL), especially in case of operating systems. An HCL lists tested, compatibility and sometimes incompatible hardware devices for a particular operating system or application. The following sub-sections discuss the various aspects of hardware requirements.

## HARDWARE REQUIREMENTS FOR PRESENT PROJECT:

PROCESSOR  :   Intel  dual Core ,i3

RAM            :    1 GB

## 2.3 SOFTWARE REQUIREMENTS:

Software Requirements deal with defining software resource requirements and pre-requisites that need to be installed on a computer to provide optimal functioning of an application. These requirements or pre-requisites are generally not included in the software installation package and need to be installed separately before the software is installed.

## SOFTWARE REQUIREMENTS FOR PRESENT PROJECT:

OPERATING SYSTEM    :    Windows 7/ XP/8/10

FRONT END              :    Html, CSS, java script.

SERVER SIDE SCRIPT   :    Php

DATABASE               :    MySQL

# ANALYSIS

### 3.1 EXISTING SYSTEM:

Hospitals currently use a manual system for the management and maintenance of critical information. The current system requires numerous paper forms, with data stores spread throughout the hospital management infrastructure. Often information is incomplete or does not follow management standards. Forms are often lost in transit between departments requiring a comprehensive auditing process to ensure that no vital information is lost. Multiple copies of the same information exist in the hospital and may lead to inconsistencies in data in various data stores.

### 3.2 PROPOSED SYSTEM:

The Health Services System is designed for any hospital to replace their existing manual paper-based system. The new system is to control the information of patients. Room availability, staff and operating room schedules and patient invoices. These services are to be provided in an efficient, cost effective manner, with the goal of reducing the time and resources currently required for such tasks.

### 3.3 FEASIBILITY STUDY:

The feasibility of the project is analysed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are:

- ➢ Economic Feasibility
- ➢ Technical Feasibility
- ➢ Operational Feasibility

## 3.4   SOFTWARE SPECIFICATION:

HTML:

HTML or Hypertext Mark-up Language is the standard mark-up language used to create web pages.

HTML is written in the form of HTML elements consisting of tags enclosed in angle brackets (like). HTML tags most commonly come in pairs, although some tags represent empty elements and so are unpaired, for example. The first tag in a pair is the start tag, and the second tag is the end tag (they are also called opening tags and closing tags). Though not always necessary, it is best practice to append a slash to tags which are not paired with a closing tag.

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. HTML describes the structure of a website semantically along with cues for presentation, making it a mark-up language rather than a programming language.

HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items.

CASCADING STYLE SHEETS (CSS):

It is a style sheet language used for describing the look and formatting of a document written in a mark-up language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. CSS is a cornerstone specification of the web and almost all web pages use CSS style sheets to describe their presentation.

CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colours, and fonts.[1] 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 .

CSS can also allow the same mark-up page to be presented in different styles for different rendering methods, such as on-screen, in print, by voice (when read out by a speech-based browser or screen reader) and on Braille-based, tactile devices. It can also be used to allow the web page to display differently depending on the screen size or device on which it is being viewed. While the author of a document typically links that document to a CSS file, readers can use a different style sheet, perhaps one on their own computer, to override the one the author has specified. However, if the author or the reader did not link the document to a specific style sheet the default style of the browser will be applied.

MySQL:

MySQL is developed, distributed, and supported by Oracle Corporation. MySQL is a database system used on the web it runs on a server. MySQL is ideal for both small and large applications. It is very fast, reliable, and easy to use. It supports standard SQL. MySQL can be compiled on a number of platforms.

The data in MySQL is stored in tables. A table is a collection of related data, and it consists of columns and rows. Databases are useful when storing information categorically.

FEATURES OF MySQL:

- ➤ Internals and portability
- ➤ Security
- ➤ Scalability and Limits
- ➤ Connectivity
- ➤ Localization
- ➤ Clients and Tools

JAVASCRIPT:

JavaScript is the scripting language of the Web. All modern HTML pages are using JavaScript. A scripting language is a lightweight programming language. Java-Script code can be inserted into any HTML page, and it can be executed by all types of web browsers. JavaScript is easy to learn.

WHY TO USE JAVASCRIPT:

JavaScript is one of the 3 languages all web developers must learn:

1.HTML to define the content of web pages

2.CSS to specify the layout of web pages

3.JavaScript to specify the behaviour of web pages


JAVASCRIPT PROPERTIES:

- Properties are the values associated with a JavaScript object.
- A JavaScript object is a collection of unordered properties.
- Properties can usually be changed, added, and deleted, but some are read only.


PHP:

WHAT IS PHP?

- PHP is an acronym for "PHP Hypertext Pre-processor"
- PHP is a widely-used, open source scripting language
- PHP scripts are executed on the server
- PHP costs nothing, it is free to download and use

WHAT IS PHP FILE?

- PHP files can contain text, HTML, CSS, JavaScript, and PHP code
- PHP code are executed on the server, and the result is returned to the browser as plain HTML
- PHP files have extension ".php"

WHAT CAN PHP DO?

- PHP can generate dynamic page content
- PHP can create, open, read, write, delete, and close files on the server
- PHP can collect form data
- PHP can send and receive cookies
- PHP can add, delete, modify data in your database
- PHP can restrict users to access some pages on your website
- PHP can encrypt data

With PHP you are not limited to output HTML. You can output images, PDF files, and even Flash movies. You can also output any text, such as XHTML and XML.

WHY PHP?

- PHP runs on various platforms (Windows, Linux, Unix, Mac OS X, etc.)
- PHP is compatible with almost all servers used today (Apache, IIS, etc.)
- PHP supports a wide range of databases
- PHP is free. Download it from the official PHP resource: www.php.net

# DESIGN

## 4.1 SYSTEM DESIGN:

### 4.1.1 INTRODUCTION TO UML:

The Unified Modeling Language (UML) is a standard language for specifying, visualizing, constructing, and documenting the software system and its components. It is a graphical language, which provides a vocabulary and set of semantics and rules. The UML focuses on the conceptual and physical representation of the system. It captures the decisions and understandings about systems that must be constructed. It is used to understand, design, configure, maintain, and control information about the systems.

The UML is a language for:

- Visualizing
- Specifying
- Constructing
- Documenting

### 4.1.2 UML Diagram:

A diagram is the graphical presentation of a set of elements, most often rendered as a connected graph of vertices and arcs. You draw diagram to visualize a system from different perspective, so a diagram is a projection into a system.

For all but most trivial systems, a diagram represents an elided view of the elements that make up a system. The same element may appear in all diagrams, only a few diagrams, or in no diagrams at all. In theory, a diagram may contain any combination of things and relationships.

In practice, however, a small number of common combinations arise, which are consistent with the five most useful views that comprise the architecture of a software-intensive system. For this reason, the UML includes nine such diagrams:

1. Class diagram

2. Object diagram

3. Use case diagram

4. Sequence diagram

5. Collaboration diagram

6. State chart diagram

7. Activity diagram

8. Component diagram

9. Deployment diagram

USE CASE DIAGRAM:

A use case diagram in the Unified Modeling Language (UML) is a type of behavioural diagram defined by and created from a use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases.

# TESTING

## 5.1 INTRODUCTION TO SYSTEM TESTING:

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, subassemblies, assemblies and/or a finished product It is the process of exercising software with the intent of ensuring that the

Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

## 5.2 TYPES OF TESTING:

- Unit Testing
- Integration Testing
- Functional Testing
- System Testing
- White Box Testing
- Black Box Testing
- Unit Testing

Test objectives

- All field entries must work properly.
- Pages must be activated from the identified link.
- The entry screen, messages and responses must not be delayed.

Features to be tested

- Verify that the entries are of the correct format
- No duplicate entries should be allowed
- All links should take the user to the correct page.

Acceptance Testing:

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

Test Results:

All the test cases mentioned above passed successfully. No defects encountered.

# CONCLUSION

Since we are entering details of the patients electronically in the" Hospital Management System", data will be secured.

Using this application, we can retrieve patient's history with a single click. Thus, processing information will be faster.

It guarantees accurate maintenance of Patient details.

It easily reduces the book keeping task and thus reduces the human effort and increases accuracy speed.

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