OPERATIONAL MANAGEMENT SYSTEM FOR THE AYURVEDA MEDICINE CENTER

By

R.D.I.Madushani
DEH/IT/2018/F/0096

THE REPORT

Submitted in partial fulfilment of the requirement

Of

HIGHER NATIONAL DIPLOMA IN INFORMATION TECHNOLOGY

2020

Dehiwala Advanced Technological Institute
Dehiwala
Sri Lanka

-Approved-

……..
MR.NALIN KANNANGARA,
THE SUPERVISOR,
ASSISTANT LECTURER,
ADVANCED TECHNOLOGICAL INSTITUTE,
DEHIWALA.

DATE: ……

……..
MRS N.R.MEDDAGE,
THE HEAD,
DEPARTMENT OF IT,
ADVANCED TECHNOLOGICAL INSTITUTE,
DEHIWALA.

DATE: ……

……
MRS S.S.SAMARAKKODY,
THE DIRECTOR,
ADVANCED TECHNOLOGICAL INSTITUTE,
DEHIWALA.

DATE: ……

Supervisor: Mr.Nalin Kannangara.

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

DEHIWALA ADVANCED TECHNOLOGICAL INSTITUTE
DEPARTMENT OF INFORMATION TECHNOLOGY

IT SPECIALIZATION PROJECT REPORT HEADER SHEET

Student Registration Number: DEH/IT/2018/F/0096

Family Name and initial: R.D.I.Madushani

Project title: Operational management system for the Ayurveda Medicine Center

PLAGIARISM

You are reminded that there exist regulations concerning plagiarism. Extracts from these regulations are printed overleaf. Please sign below to say that you have read and understand these extracts:

Signature: ……. Date: …….

For supervisor to complete

Date received: ……..

Name of the supervisor: ……

Signature: ……..

Date: ……

ABSTRACT

Information technology is widely used for faster and easier way of transaction and communications but Eladaluwa Ayurveda medicine center doesn't have any computer based system operations are handled and managed manually. The information managed in files which is a cumbersome process with the daily operations performed. For a medical center, it is very important to have treatment history of the patients where doctors will have quick access to information. Further, other services provided by the medical center is also recorded manually where employee will have to track the availability of the medicines and re-order from suppliers is a difficult process. Therefore, it is preferred that Eladaluwa Ayurveda medicine center to implement an operational system for do these tasks easily and effectively.

This "Operational management system" is help to management to do their tasks easily and effectively. This is a data based system. This system helps to handle every details easily like patient details, walking customer details, medicines and details, etc. The system can make monthly reports of patient details, sales and purchasing medicine item details etc.

This data based operational management system will ensure the easiness and the accuracy of the operations in the medical center with management will be able to analyze and enhance the operations with the history. There are some main processes in this system like Registration, Treatments, Reports, Selling and Purchasing ayurvedic product, Print the receipt and prescription. In registration process there are various type of registrations like Doctor Registration, Patient registration, Supplier registration and items' registration. This system is design for Ayurveda medical center so main thing is patient registration. Treatment and selling items. In this process medical reports are issued after checking patient registration. Other thing is handle selling and purchasing ayurvedic product. This system also generates monthly business reports.

AKNWOLEDGEMENT

It’s a great pleasure to take this opportunity to deliver my worthy thanks to those who be a guardian, supported complete my final project successfully. I would like to deliver my sincere gratitude to the head of department Ms. N.R. Meddage to leading us in new areas in the industry, improve our knowledge and skills in informational technology with account.

It is my bond to be thanking to our director madam Ms. S.S. Samarakkody for providing this opportunity.

Special thanks to my project supervisor Mr.Nalin Kannangara, for her contribution made on my project from the start to end support, advises and knowledge in order to achieve and complete the project successfully.

.

My sincere gratitude toward all academic and non- academic staff members for their support and cooperation to complete my project successfully.

I would like to thank the Miss. R.V.P.C. Rahupola owner of the “Eladaluwa Ayurveda Medical Center” giving this opportunity and providing me with necessary, highly confidential information of the medical center to succeed my project. My thank goes to Mr. Anuradha Warusawithana whose guidance and the support.

Last, but not the least, my mother is also an important inspiration for me. So, with due regards, I express my gratitude to her.

Finally, I apologize all other unnamed persons who helped me in various ways.

TABLE OF CONTENTS

Contents **Page No**

Abstract----------III

Acknowledgement---------- IV

Table of contents----------VII

List of tables---------- VII

List of figures----------VII

List of diagrams----------VII

List of abbreviations----------VIII

Chapter summaries---------- VIII

CHAPTER 01

INTRODUCTION----------09

1.1 Overview…… 09

1.2 Existing system……09

1.3 Problem statement……09

1.4 Proposed solution……10

1.5 Scope……..10

1.6 Aims and objectives……..10

CHAPTER 02

SYSTEM ANALYSIS----------11

2.1. Requirement Analysis……....11

2.2. Feasibility Study……...11

2.2.1 Operational Feasibility……...11

2.2.2 Technical Feasibility……11

2.2.3 Financial Feasibility……..12

2.3 System Development Life Cycle (SDLC)……12

2.4 Waterfall Model……...13 , 14

CHAPTER 03

SYETEM DESING----------15

3.1. Data flow and process Model……15

3.1.1 Data flow Diagram……..15

3.1.2 ER Diagram……16

3.2. Object Oriented Diagrams……17

3.2.1 Use Case Diagram…… 17

LIST OF TABLES

TABLE TITLE **PAGE NO**

2.1----------Hardware Requirements----------11

2.1----------Software Requirements ----------11

LIST OF FIGURES

FIGURE **PAGE NO**

2.1----------Waterfall model ----------14

3.1----------Process model----------15

LIST OF DIGRAMS

DIAGRAM **PAGE NO**

3.1---------- ER Diagram---------- 16

3.2---------- Use Case Diagram----------17

ABBREVIATIONS

ER Diagrams – Entity Relationship Diagrams
UML – Unified Modeling Language
DFD – Data Flow Diagrams
HTML – Hyper Text Markup Language
CSS – Cascade Style Sheet
PHP – PHP: Hypertext Preprocessor
JS – Java Script

CHAPTER SUMMERIES

CHAPTER 01

This chapter will explain about the project, the problems about the existing system and about the proposed solution and also this chapter will describe the aims and objective of the project and the scope of the project.

CHAPTER 02

Chapter 02 will explain about the system analysis of the web application with the existing manual system. And also, this chapter will briefly explain about the features of the platform. And will give the feasibility study report briefly. This chapter will describe how the web application analyze the system by using SDLC and Iterative Development Approach. After analyze the system it will identify the requirements of the new system.

CHAPTER 03

Chapter 03 will describe the System Design of the web application. It will describe the design techniques of the web application using UML Diagrams.

CHAPTER 01 – INTRUDUCTION

1.1 Overview

Medicines are an integral part of our day to day lives. Today there are many public and private hospitals, clinics and medical centers to provide these services. This Eladaluwa Ayurveda medical Center is another such company which provides these services to us. There are a number of action that are in place in the entire process. The Eladaluwa Ayurveda medicine center provide services for the customers on daily basis. There are few doctors currently do consultation and it performs 50-60 consultation daily and Ayurveda treatments on demand. When handling a customer base like this, it is always requiring to investigate the history of the treatment which will easy to track the current progress of the patient on the recovery.

Furthermore, the purchasing and the selling on other medical items is also a key business and currently the inventory management, purchasing management and selling is recorded manually. Therefore, there were many occasion medical center faced unavailability of medicines for the treatments during the past.

On the other hand, suppliers will take at least two weeks to deliver certain medicine therefore the prior order of the medicines is a key requirement of the system.

Doing these things manually is quite a difficult task.

We therefore introduce an operational management system for this medical center. This is the data base system. Using this system, the owner can easily and systematically perform their task. So this operational management system is very useful to handle this business proper.

1.2 Existing System

Eladaluwa Ayurveda medical center doesn't have computer based system. In the existing system all work is done only manually. (paper based system). Every details store in files.

But in proposed system I have to computerize the works using the application.

1.3 Problem Statement

There are lot of problems and weakness in this existing system and many more difficulties to work efficiency.

- Waste of time
- Hard to find patient detail quickly when needed
- Sometimes can be missing important details
- Inability to obtain inventory information when needed
- Inability to obtain sales and purchase when necessary. (The doctor has to order drugs to restock the already diminishing stock)

1.4 Proposed Solutions

The aim of proposed system is to develop a system of improved facilities. The proposed system can overcome all limitations of the existing system. The system provides proper security and reduces the manual work.

- Only owner can be access to the system.
- Store every important details in database.
- Registration of doctor
- Registration of patient
- Supplier registry
- Item registry
- Treatments
- Reports (eg:- medical report)
- Selling ayurvedic product
- Purchasing ayurvedic product
- Print the bill
- Print the prescription

1.5 Scope

- To track the services provided by the medical center via an IT application and also to track the purchasing of the medicines and the selling of it. It will help the medicine center to track the available inventory and order from suppliers in advance.

1.6 Aim and Objectives

The overall objective of this project is to establish a System for a Ayurveda medical center so as to improve the performance and efficiency of operational management. In order to achieve this goal effectively, there are some specific objectives should be implemented;

- Develop data based system to manage Ayurveda medical center.
- To save the cost and time.
- To design a user friendly interface.
- Easy access to patient data.
- Get the alert about the medicine product going to be finish in the stock.
- To providing easy accessibility of store.

CHAPTER 02 – SYSTEM ANALYSIS

2.1 Requirement Analysis

The system services and goals are established by consultation with system user. They are then defined in details and serve as a system specification. System requirement are those on which the system runs.

Software Requirements	Hardware Requirements
Computer with either Intel Pentium processor or AMD processor	Operating System: Windows 8 OS
Processor Speed 1.2 GHZ or above 4GB RAM	Browser: Internet Explorer 6.0, Google Chrome or Mozilla Firefox
100GB or above hard disk drive	Technology: Java
	Database: MySQL (WAMP Server)

Chapter 02 Table 2.1

2.2 Feasibility study

2.2.1 Operational Feasibility

The operational system for the medical center will used by the employees of the medical center with each provided with user logins. The system entirely focused on to track the operations performed in the medical center. It is very important for the doctor to see the patient's history of treatments done from the medical center before proceeding to the new treatments and also to see the progress of the recoveries of the patients with the prior treatments.

The system will be designed to capture the purchases and the other facilities provided to the waking customers. Therefore, the system will be able to provide the indication of the available stock of the medicines and other requirement medical equipment's.

The system will not focus on tracking the financials involved in the purchasing of the medicines and related in equipment as medicine center is focusing on some expansions in future and purchasing will be separate module in that capacity.

2.2.2 Technical Feasibility

The operational system for the medical center is a complete web based application. The main technologies and tools that are associated are as follows.

HTML5
CSS3
JAVA
WAMP database server
Java Script
Diagram drawing Tools – Visio Professional 2010

2.2.3 Financial Feasibility

The operational system is a web based application where in future, with the expansions, medical center can either host the system in a cloud environment or a data center. Which also provide facility to on-board multiple users with certain roles. Since it will be one computer running the application at the initial stage, there will be no hosting cost or network bandwidth cost involvement.

The system will developed as my final year project submission and therefore, there is no cost involvement for the medicine center for the application development. System maintenance and further enhancements will have to be performed with associated cost.

Beside the associated cost, there will be many benefits for the medicine center. Especially get rid of the extra effort put on the manual operations and the availability of the patient's history and the information for the Doctors to perform the consultation and the treatments.

2.3 System Development Life Cycle (SDLC)

The Systems Development Life Cycle (SDLC), or Software Development Life Cycle in systems engineering and software engineering, is the process of creating or altering systems, and the models and methodologies that people use to develop these systems. The concept generally refers to computer or information systems.

In software engineering the SDLC concept underpins many kinds of software development methodologies. These methodologies form the framework for planning and controlling the creation of an information system the software development process. This composed of several phases

Problem Definition

- Identifies and defines a need for the new system.

System Analysis

- Analysis the information needs of the end users.

System Design

- Creates a blueprint for the design with the necessary specifications for the hardware, software, people and data resources.

System Implementation

- Creates and programs the final system.

System Testing

- Evaluates the system's actual functionality in relation to expected or intended functionality.

Maintenance

- Keeping the system up to date with the changes in the organization and ensuring it meets the goals of the organization.

2.4 Waterfall Model

The waterfall model is a sequential software development process, in which progress is seen as flowing steadily downwards (like a waterfall) through the phases of Conception, Initiation, Analysis, Design (validation), Construction, Testing and Maintenance.

Requirement analysis and Definition

All possible requirements of the system to be developed are captured in this phase. Requirements are set of functionalities and constraints that the end-user expects from the system. The requirements are gathered from the end-user by consultation, these requirements are analyzed for their validity and the possibility of incorporating the requirements in the system to be development is also studied. Finally, a Requirement Specification document is created which serves the purpose of guideline for the next phase of the model.

System and Software Design

Before a starting for actual coding, it is highly important to understand what we are going to create and what it should look like? The requirement specifications from first phase are studied in this phase and system design is prepared. System Design helps in specifying hardware and system requirements and also helps in defining overall system architecture. The system design specifications serve as input for the next phase of the model.

Implementation

On receiving system design documents, the work is divided in modules/units and actual coding is started. The system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality; this is referred to as Unit Testing. Unit testing mainly verifies if the modules/units meet their specifications.

Integration and System testing

As specified above, the system is first divided in units which are developed and tested for their functionalities. These units are integrated into a complete system during Integration phase and tested to check if all modules/units coordinate between each other and the system as a whole behaves as per the specifications. After successfully testing the software, it is delivered to the customer.

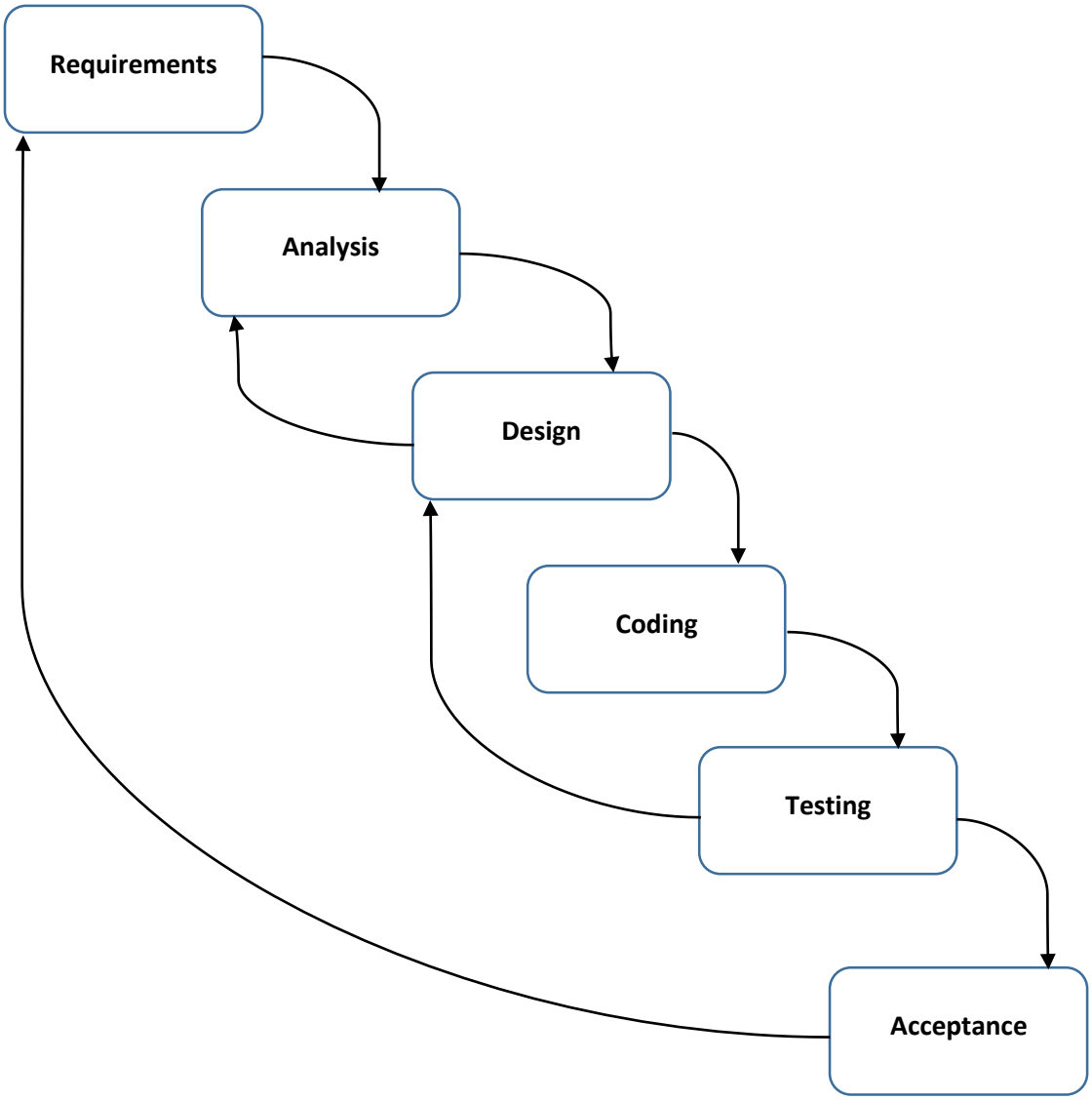
Operation and Maintenance

This phase of "The Waterfall Model" is virtually never ending phase (Very long). Generally, problems with the system developed (which are not found during the development life cycle) come up after its practical use starts, so the issues related to the system are solved after deployment of the system. Not all the problems come in picture directly but they arise time to time and needs to be solved; hence this process is referred as Maintenance.

There have been some variations from the typical waterfall model for this project lifecycle. They are:

1. Maintenance has been omitted from the current project.
2. Not all testing methods which are present in theoretical model are implemented.

Waterfall Model

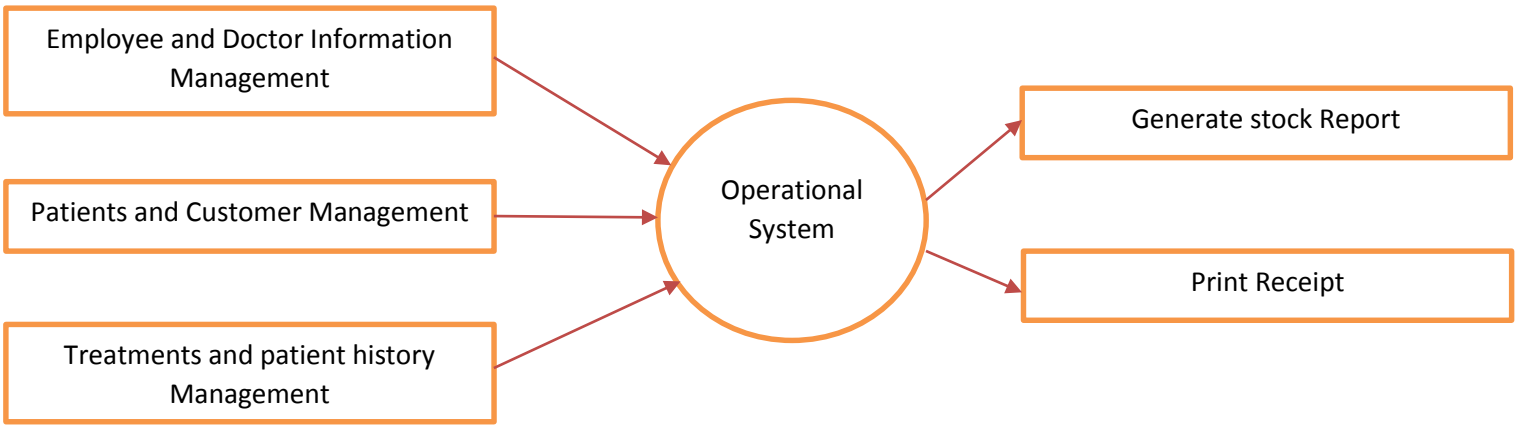


Chapter 02 Figure 2.1

This is a modern waterfall model. I decided to choose waterfall model as my methodology since the scope of the project is very precise and I'll be able to manage the project sequentially in the necessary phases in the waterfall model.

CHAPTER 03 – SYSTEM DESIGN

3.1. Data flow and process Model



Chapter 03 Figure 3.1

3.1.1 Data flow Diagram

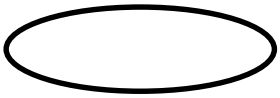
A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modeling its process aspects. Often, they are a preliminary step used to create an overview of the system which can later elaborated. DFDs can also be used for the visualization of data processing. (structured design)

An entity relationship (ER) diagram is a specialized graphic that illustrates the interrelationships between entities in a database. ER diagrams often use symbols to represent three different types of information. Boxes are commonly used to represent entities.

Diamonds are normally used to represent relationships and ovals are used to represent attributes.

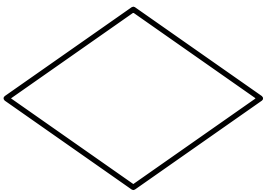
Symbols used in Entity- Relationship Diagram are as follows;

Represent Data Entity



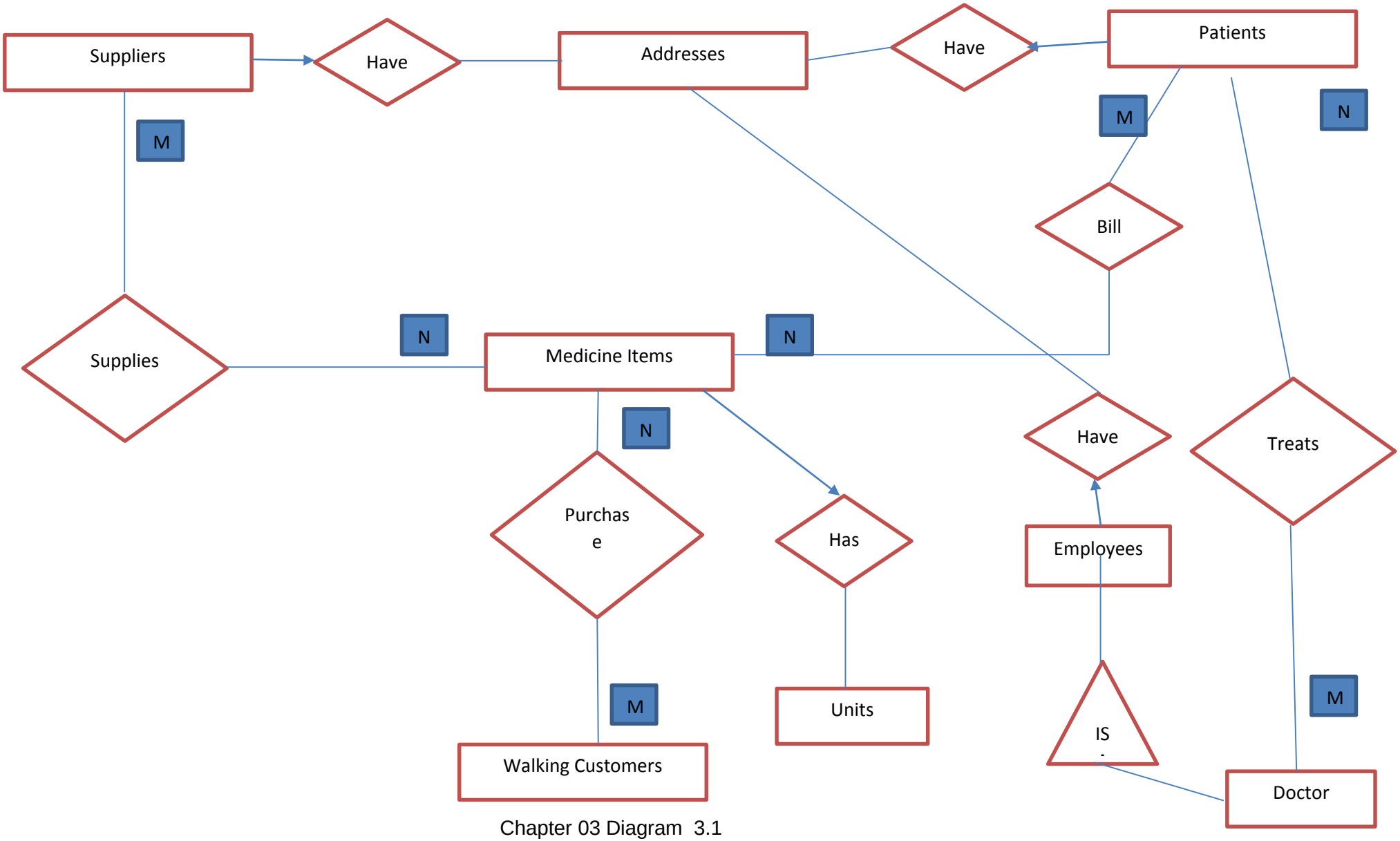
Represent Connection Administrator

two entities or One to One relation



Represent the relationship

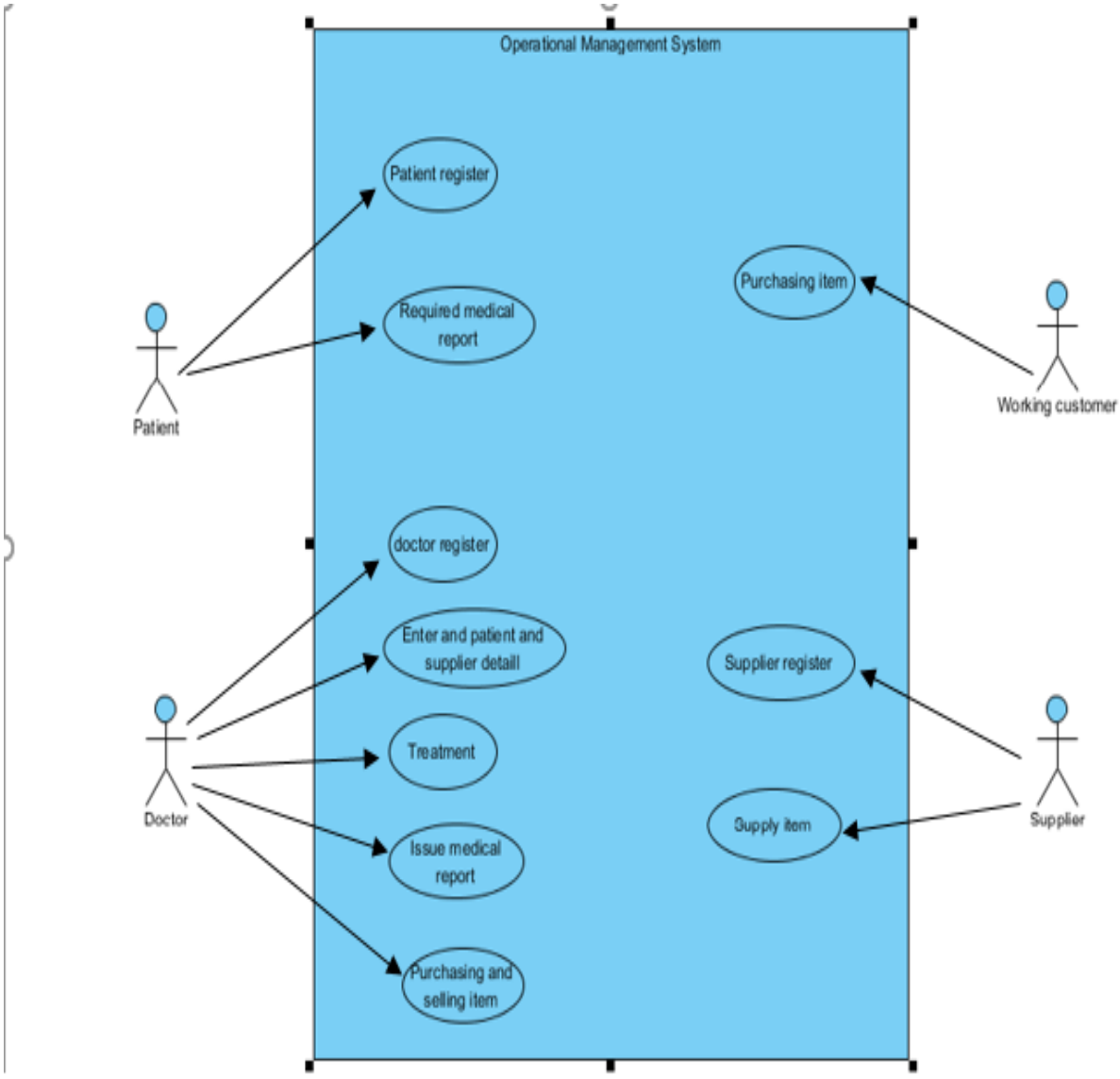
3.1.2 ER Diagram



Chapter 03 Diagram 3.1

3.2. Object Oriented Diagrams

3.2.1 Use Case Diagram



Chapter 03 Diagram 3.2