

# Database Management System to Design a Medical Treasury System

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**Abstract**— With the twenty-first century, and with the circulation and development of the use of modern technology, medical treasures dealing with old traditional methods have become unsuitable for the new era. Therefore, this paper aims to try to build and manage the database using ASP.NET (Active Server Pages) program as a helping tool to organize the files used in the site, based on C#) is a server scripting language and a useful asset for making dynamic and collaborating Web pages, SQL Server(Structured Query Language) is the most popular database system used with C#., which focuses on the object-oriented programming language as well as the use of use cases, a modeling language technology that helps software developers to define features of implementation and solve errors safely. A database was designed and constructed to create a medical treasury, which includes (medical supplies), specifically to address the problem of estimating the annual need for medicines (medical supplies) to meet their needs and thus the needs of patients. This paper includes the aspect of designing and describing the database using the ASP.NET (Active Server Pages) program to build the base (from Where the data is stored and its privacy for medicinal drugs) and then stages and steps to build the proposed system and using the description language use cases.

**Keywords**- *Asp.net, database management, use cases, SQL server, Medical treasures system*

## I. INTRODUCTION

The utilization of computers in Medical treasures has widespread quickly during the last decade. The practice of community and institutional have been changed significantly [1]. The computers help the doctors for diagnosing the medical conditions, and it increases the medical operations. In the 1990s, it was very difficult to find many medication stores that do not any knowledge of using computers. The medical material management control system consists of input data, reclamation, and monitoring. By using the computer, we

can know that the types of drugs are distributed and reports prepared. The Medical management system mainly focuses on the operation of pharmacies and how they are managed. In this system, the reception of data providers, the treatment of drug requests by the rest of the departments within the hospital, and the distribution of medicines. Also, through the computer, we can knowledge of the validity of the drugs and return the expired drugs to the suppliers. Our application will develop to implement in an organization's existing manual system. The specific purpose of this system is to store, distribute and process information about drugs Using Microsoft visual studio (Asp.net) to design a database and clarify the mechanism and responsibilities of each activity in the system. The adequacy of the policing function and the effectiveness with which it takes the improper and corrupted managing of drugs depends on what quality of information it can originate from its existing records and how fast it can have access to it.

## II. METHODOLOGY

A methodology is usually a guidance system for the solution of problems, with specific mechanisms such as stages, chores, procedures, techniques, and tools. A methodology can be a consideration to be to include multiple methods, each as applied to different facts of the entire domain of the procedure [4]. The Methodology uses to build a drug management system. The ADDIE model (analysis, strategy, improvement, implementation, and estimation) was used in this search.

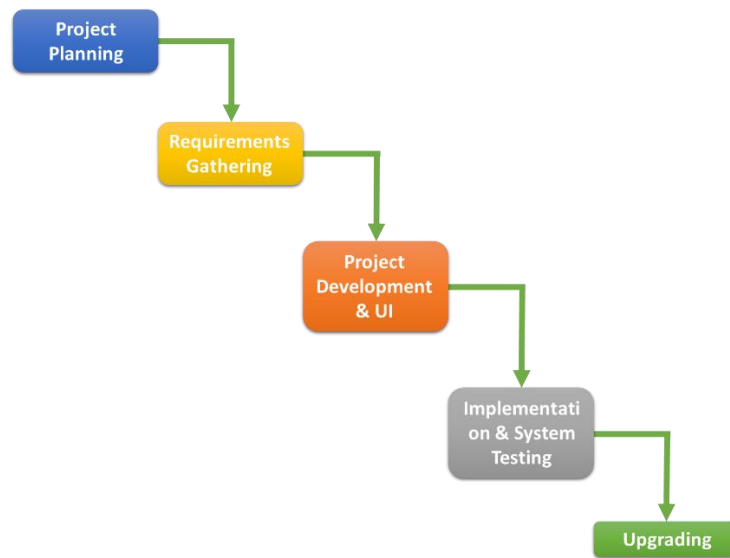
### A. *Analysis stage*

The Analyze stages is a procedure of gathering and deciphering realities, detecting the problems, and disintegration of a system into its components. At mid of this stage, you should distinguish the problem, classify the source of the problem, and determine possible solutions. The stage may embody particular research systems, for example, needs investigation, work examination, and assignment analysis. The outputs of this phase often include the system goals and a list of tasks to be ordered. These productions will be the inputs for the Designing phase.

### B. *Design stage*

The Design stage includes utilizing the outputs from the Analyze stage to design a technique for building up the direction. Amid this stage, you should diagram how to achieve the system objectives decided amid the Analyze stage. This stage will explain how to design the proposed system and the most important stages accomplished for functional requirements.

System design comprises of design actions that yield system determinations fulfilling the useful necessities which created in the system inquiry procedure. System design determines how the system will be accomplished. System design is the mechanical application of the system investigation.



**Figure 1: System Design (Drug system).**

The above chart includes the most important stages and steps for structuring the system where the basic requirements of the system are determined with the collection of the most important data on medical assets and then designing and processing data using the database (SQL) and describing it using (Use-case), As each stage will be shown separately.

#### *C. Development stage*

The Develop stage expands on both sides the Evaluate and Plan stages. The motivation behind this stage is to create the system pages' designs and system materials needed. Amid this stage, you will build up the direction, all media that will be used as a part of the guideline, and any supporting documentation.

#### *D. Implementation stage*

Represents the work done to meet the prerequisites of the extent of work and fulfill the charter, so The Implementation stage alludes to the real conveyance of the direction.

#### *E. Evaluation stage*

This stage measures the adequacy and proficiency of the guideline [5].

### III. DATABASE DESIGNATION

The database system used to implement the back-end of the system is visual studio.net using (ASP.NET) It is the central database program for vector objects) object-oriented) It depends on the procedural programming language. visual studio.net is known in short )VFP) This program is tightly integrated with the self-running database relationship engine and it is supported with SQL server It stands for(structured query language), ASP.NET Provided with the tools we need to work and manage high-quality programs, through which we can create programs for database solutions for the desktop and from there to the web, ASP.NET provides you

with superior capabilities for processing powerful data and it also provides us with development tools for rapid applications so that we can reach the maximum level of productivity, Moreover, it is easy to learn [6].

The name of the designed database is a (drugstores) and the construction of the tables data in the database is as showing below:

1. Administrator or manager
2. Products treasury
3. Company
4. crew
5. Sale

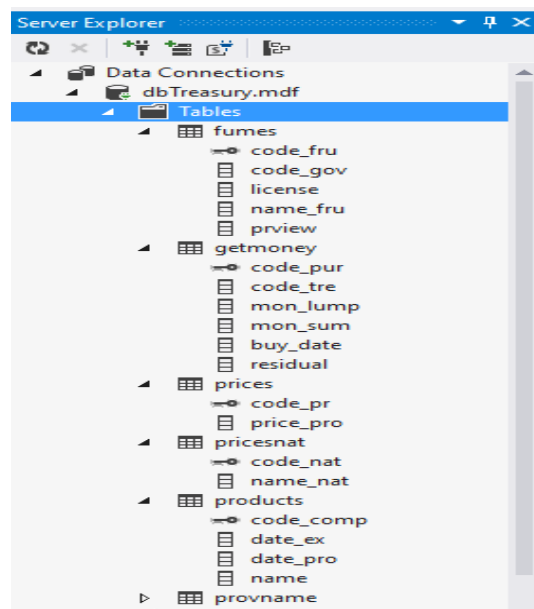


Figure 2: The database specification for the medical treasury management system.

Name	Data Type	Allow Nulls	Default
code_fru	nvarchar(50)	<input type="checkbox"/>	
code_gov	nvarchar(50)	<input checked="" type="checkbox"/>	
license	numeric(18,0)	<input checked="" type="checkbox"/>	
name_fru	nvarchar(50)	<input checked="" type="checkbox"/>	
prview	nvarchar(30)	<input checked="" type="checkbox"/>	

Figure 3: Drug products.

Name	Data Type	Allow Nulls	Default
code_pur	nvarchar(50)	<input type="checkbox"/>	
code_tre	nvarchar(50)	<input checked="" type="checkbox"/>	
mon_lump	datetime	<input checked="" type="checkbox"/>	
mon_sum	datetime	<input checked="" type="checkbox"/>	
buy_date	datetime	<input checked="" type="checkbox"/>	
residual	nvarchar(50)	<input checked="" type="checkbox"/>	

Figure 4: The payment process.

#### IV. ARCHITECTURE SYSTEM DIAGRAM

The planned system will be executed in client architecture. The user is can access the system by filling the required input on the login form and then submit it then the request of the user will be sent to the database the system will give an answer based on the user request. Form this description of the system is pictorial diagrammatically.

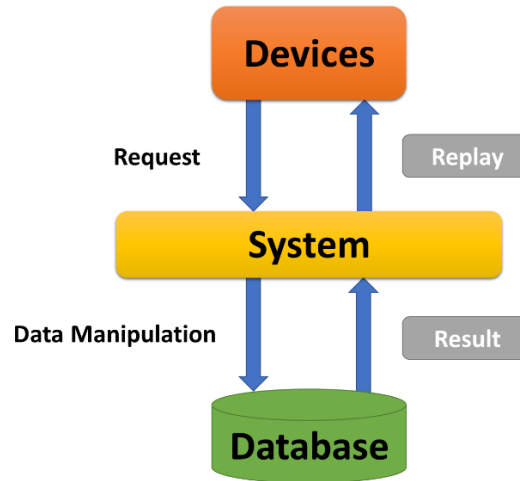


Figure 5: Architecture of the medical treasury management system.

#### V. UML (UNIFIED MODELING LANGUAGE)

The UML is a worldwide manufacturing standard graphical scheme for describing software analysis and designs. The most usefully standard UML diagrams are the use case diagram, class diagram, sequence diagram, state chart diagram, activity diagram, component diagram, and deployment diagram [7]. In this paper, we will explain the use case illustration and the sequence diagram to know how to create and design a drug management system.

##### A. Use Case

In the mid-1980s, Ivar Jacobson set forward for consideration the idea of use cases and procedure settings.

- Descriptions Case

1. actors - something with conduct or part, e.g., a person, another system, association.
2. scenario - a particular grouping of activities and communications amongst actors and the system.
3. use case - a collection of related achievement and disappointment situations, describing actors using the system to support a goal,[8].

In this paper, we used a use case diagram to describe the steps (Work scenario) and system procedures between the user and the software system, which are the specific method used in the system development process. In our system, the manager is responsible for all the activities of the system (for the medical reserve) as he can perform any of the system's operations (delete, amend, add, search). The pharmacist dealing with the medical repository only has the authority (to create, delete, and add the prescription), while the cashier has the authority (payment procedures). As shown in the chart below:

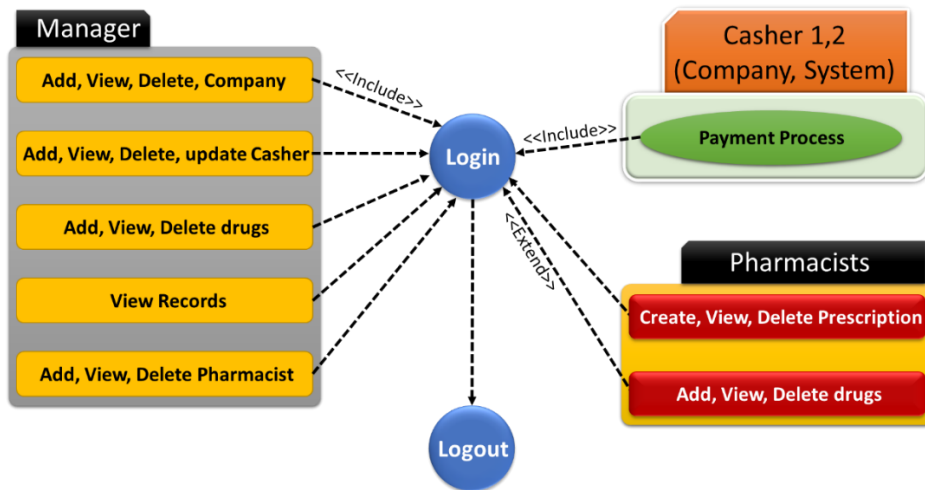


Figure 6: Use case diagram used to design the medical treasury management system.

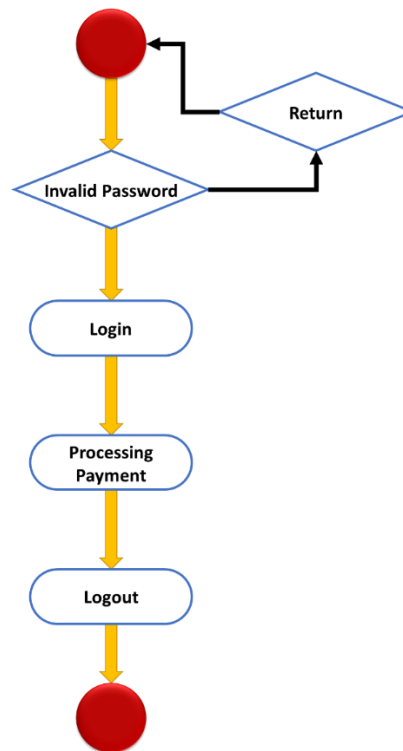


Figure 7: Mechanism of entry permit for the system (Use case).

In the diagram above, it shows the mechanism of entry and permission to enter the system where each user has a specific authority to enter and see the components of the system interfaces that differ from one authority to another, where the user enters the password and entry if the password is correct, he will enter the system and use the procedure he desires, either If the password is wrong, a message will be displayed to confirm typing the correct code.

### B. Class diagram

The class graph defines the features and processes of a class, and its constrictions imposed on the system. The class diagram is vastly used in the modeling of object-oriented systems because they are only UML plans that can be plotted directly with object-oriented languages [9].

In this paper, we will present a diagram of the special class diagram of the medical treasury management system so the class diagram aims to describe the responsibilities of the system and to analyze and design the fixed presentation of the application. The diagram below outlines the mechanism for working with a description of the responsibilities of activities.

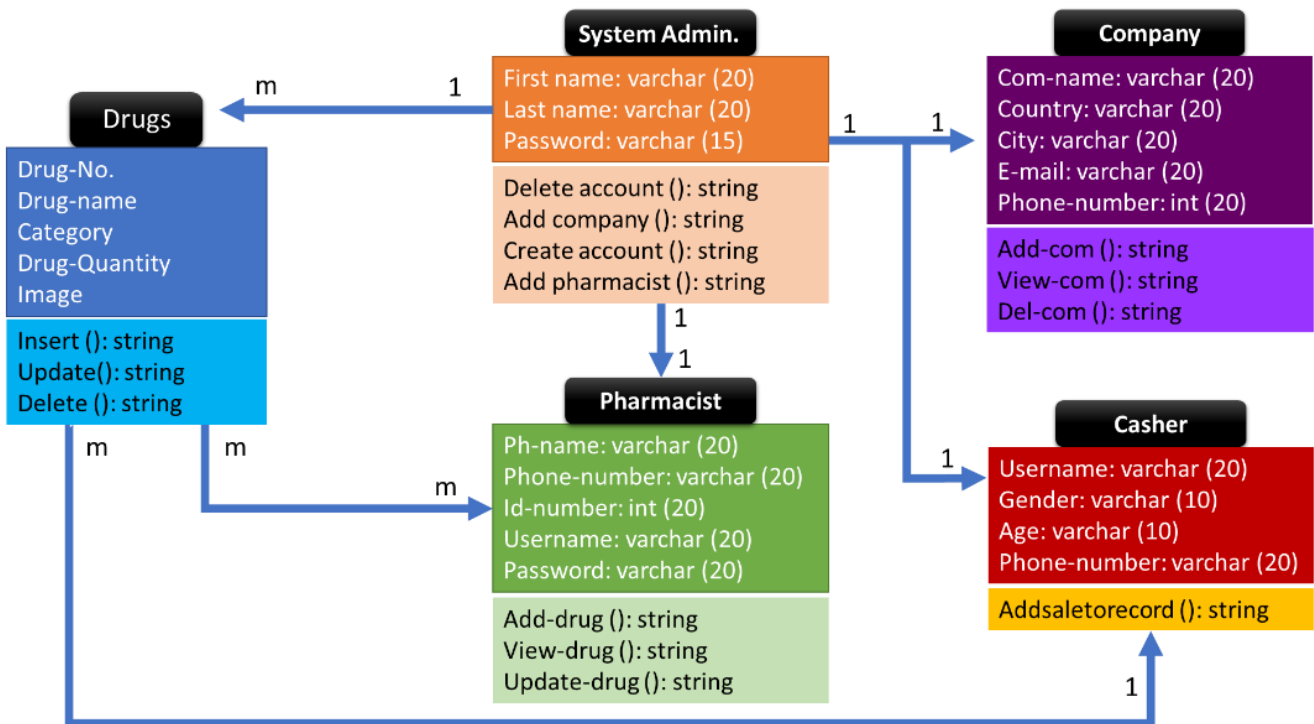


Figure 8: The class diagram of the proposed system.

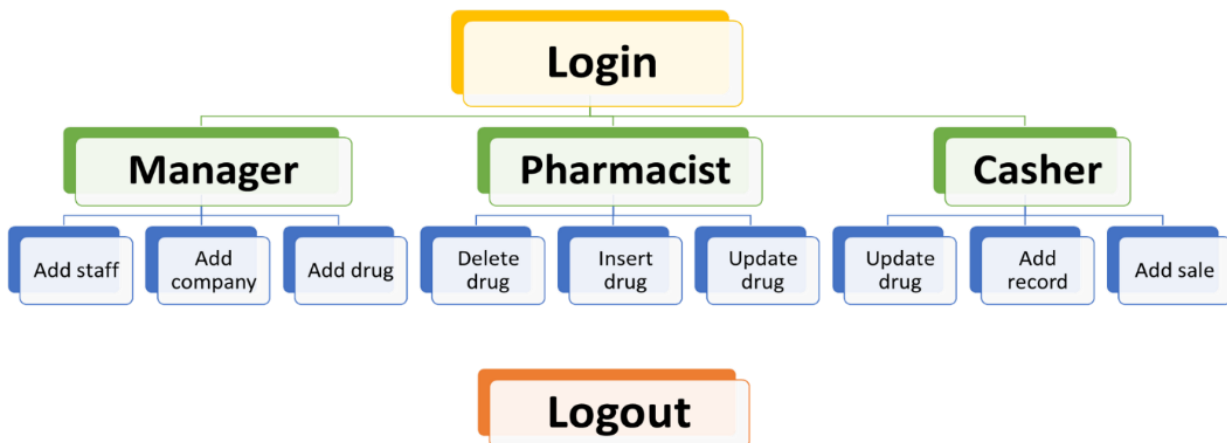


Figure 9: Mechanism of the treasury management system (Activity Admin).

## VI. CONCLUSIONS

The development of desktop application medical treasury systems implicated many stages. the approach used in the project is (ADDIE) That is to say, an operation a top-down focused on what first, then how, and moving to sequential levels of details. The first phase started with a detailed study of the problems and probability of a lot of paperwork in the medical treasury system .in the course of this study, many problems are found were discovered to have hindered the effectiveness of the existing manual system. These problems,

information needs, and activities were authenticated and later used as the basic phase was concerned primarily with the specifications medical treasury system. This paper presents a comprehensive review of treasury system and the development of the medical treasury system using ASP.NET and the use of the description language Use cases, detailed approaches to this architecture are discussed in detail and analyzed in detail.

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