

**METALIFE  
(HOSPITAL MANAGEMENT SYSTEM)**

**A PROJECT REPORT**

*In partial fulfillment for the award of the degree*

*of*

**BACHELOR**

**IN**

**COMPUTER APPLICATIONS**

*Under the Guidance of*

**MR.SURAJIT DAS**

*Project Carried Out At*



**CALCUTTA ANGLO GUJARATI COLLEGE  
MAKAUT, KOLKATA, WEST-BENGAL, INDIA  
MAY 2019**

*(Note: All entries of the proforma of approval should be filled up with appropriate and complete information. Incomplete proforma of approval in any respect will be summarily rejected.)*

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3.	ABHISHEK KUMAR SAH	DESIGNING AND ERD
4.	RAJAT KUMAR PANDEY	ERD
5.	MRINMOY SAHA	CODING
6.	PRAYAS SARKAR	DFD AND DOCUMENTATION
7.	SWEETY SINGH	DATABASE
8.	VIVEK KUMAR KANOJIA	DOCUMENTATION
9.	SHUBHAM SINGH	PRESENTATON
10.	JULI KUMARI YADAV	PRESENTATION

Each group member must participate in project development and developing the ideas for the required elements. Individual group members will be responsible for completing tasks which help to finalize the project and the performance. All group members must be assigned a task.

## DECLARATION

We hereby declare that the project work being presented in the project proposal entitled “**METALIFE (HOSPITAL MANAGEMENT SYSTEM)**” in partial fulfillment of the requirements for the award of the degree of **BACHELOR IN COMPUTER APPLICATIONS** at **THE CALCUTTA ANGLO GUJARATI COLLEGE** is an authentic work carried out under the guidance of **MR. SURAJIT DAS**. The matter embodied in this project work has not been submitted elsewhere for the award of any degree of our knowledge and belief.

Date: 10<sup>th</sup> MAY,2019

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## CERTIFICATE

This is to certify that this proposal of major project entitled “**METALIFE ON HOSPITAL MANAGEMENT SYSTEM**” is a record of bona fide work, carried out by

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**PROJECT GUIDE**

**H.O.D  
(B.C.A Dept.)**

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**Mr. SURAJIT DAS**

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**Mrs. JAYANTI GANGULY**

## **ACKNOWLEDGEMENT**

We would like to avail this opportunity to express our gratitude to some of the people who have been instrumental to us in making of this Project. The success of this project largely depended upon the extremely helpful guidelines of some key people.

Our heartfelt thanks to Mrs. Jayanti Ganguly, H.O.D of Bachelor of Computer Applications at the CAGC for providing us the opportunity to develop the project at our college and for being cooperative at some key stages of developing this project.

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Words are inadequate in offering our thanks to the other trainees, project assistants and other members at The Calcutta Anglo Gujarati College for their encouragement and cooperation in carrying out this project work. The guidance and support received from all the members and who are contributing to this project, was vital for the success of this project.

## TABLE OF CONTENTS

S.NO.	Name of the Topic	Page No.
<b>1.</b>	<b>Introduction</b>	<b>11</b>
<b>2.</b>	<b>Objective</b>	<b>12-13</b>
2.1	Aim	12
2.2	Scope	13
<b>3.</b>	<b>System Analysis</b>	<b>14-20</b>
3.1	Identification of Need	15
3.2	Feasibility Study	16
3.3	Functional Requirements	17
3.4	Non-Functional Requirements	18
3.5	Hardware and Software Requirements	19-20
<b>4.</b>	<b>System Design</b>	<b>21-59</b>
4.1	Data Flow Diagram(DFD)	22
4.2	Entity-Relationship Diagram	33-36
4.3	Modularization Details	37-38
4.4	Database Design	39-41
4.5	User Interface Design	42-59
<b>5.</b>	<b>Implementation and Testing</b>	<b>61-73</b>



5.1	Introduction	62
5.2	Objectives of Testing	63-64
5.3	Test Cases	65-68
5.4	White Box Testing	69
5.5	Black Box Testing	70
5.6	Output Testing	71
5.7	User Acceptance Testing	72
5.8	Integration Testing	73
<b>7.</b>	<b>System Security Attributes</b>	<b>74-76</b>
7.1	Database Security	75
7.2	System Security	75
7.3	Limitations	76
<b>8.</b>	<b>Conclusion</b>	<b>77</b>
<b>9.</b>	<b>Future Scope &amp; Further Enhancements</b>	<b>78</b>
<b>10.</b>	<b>Bibliography/References</b>	<b>79</b>

# METALIFE

(HOSPITAL MANAGEMENT system)

# 1. INTRODUCTION

The project Hospital Management 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 Hospital Management 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.

Hospital Management System is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals.

Hospital Management System is designed for multispeciality hospitals, to cover a wide range of hospital administration and management processes. It is an integrated end-to-end Hospital Management 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.

Hospital Management System is a software product suite designed to improve the quality and management of hospital management in the areas of clinical process analysis and activity-based costing. Hospital Management 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

## 2.1 AIM

The purpose of the project entitled as “METALIFE(HOSPITAL MANAGEMENT SYSTEM)” 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 to register and store patient’s 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 Hospital Management 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.

## 2.2 SCOPE

- 1) Information about patients is done by just writing the Patient's name, age and gender. Whenever the Patient comes up his information is stored freshly.
- 2) Bills are generated by assigning the 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.

# System Analysis

### 3.1 IDENTIFICATION OF NEED

System analysis is a process of gathering and interpreting facts, diagnosing problems and the information to recommend improvements on the system. It is a problem solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is studied to the minutest detail and analyzed. The system analyst plays the role of the interrogator and dwells deep into the working of the present system. The system is viewed as a whole and the input to the system are identified. The outputs from the organization are traced to the various processes. System analysis is concerned with becoming aware of the problem, identifying the relevant and decisional variables, analysis and synthesizing the various factors and determining an optimal or at least a satisfactory solution or program of action.

A detailed study of the process must be made by various techniques like interviews, questionnaires etc. The data collected by these sources must be scrutinized to arrive to a conclusion. The conclusion is an understanding of how the system functions. This system is called the existing system. Now the existing system is subjected to close study and problem areas are identified. The designer now functions as a problem solver and tries to sort out the difficulties that the enterprise faces. The solutions are given as proposals. The proposal is then weighed with the existing system analytically and the best one is selected. The proposal is presented to the user for an endorsement by the user. The proposal is reviewed on user request and suitable changes are made. This is a loop that ends as soon as the user is satisfied with the proposal.

## **3.2 FEASIBILITY STUDY**

Feasibility study is made to see if the project on completion will serve the purpose the organization for the amount of work , the effort and the time that spend on it. Feasibility study lets the developer foresee the future of the project and the usefulness. A feasibility study of a system proposal is according to its workability, which is the impact on the organization, ability to meet their user needs and effective use of resources. Thus when a new application is proposed it normally goes through a feasibility study before it is approved for development.

The document provide the feasibility of the project that is being designed and lists various area that were considered very carefully during the feasibility study of this project such as Technical, Economic and operational feasibilities.



### 3.3 FUNCTIONAL REQUIREMENTS

The modules used in this software are as follows:

- **Registration:** This page contains the information of the employees who can access the database.
- **Login:** This module is for registered users to login. The **ADMIN** has the authority to Add, Delete, and Update etc.
- **Home:** This page contains an overview of our main page.
- **Appointment:** The data related to the patients like, the name, blood group are entered.
- **Bed Assignment:** The admin assigns bed number to the patients.
- **Discharge:** The admin access this page and it shows the bill of the patients' stay.

### 3.4 NON-FUNCTIONAL REQUIREMENTS

- **Usability Requirement:** The system shall allow the users to access the system from any browsers, no special training is required. The system user friendly and the system is written in simple English.
- **Availability Requirement:** The system is available 100% for the user and is used by 24 hours a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week.
- **Accuracy:** The system should accurately provide real time information taking into consideration various issues. The system shall provide 100% access reliability.
- **Performance Requirement:** The information is refreshed at regular intervals depending upon whether some updates have occurred or not. The system shall respond the member in less than 2 seconds.
- **Security Requirement:** System will use a secured database and the system will have different users and each user has different types of constraints. Only admin has the rights to update database information of other users.
- **Reliability Requirement:** The system has to be 100% reliable due to the importance of data and the damages that can be caused by incorrect data. The system will run 7 days a week and 24 hours a day.

## **3.5 HARDWARE AND SOFTWARE REQUIREMENTS**

### **HARDWARE REQUIREMENTS**

- Computer that has a 1.6GHz or faster processor
- 1 GB (32 Bit) or 2 GB (64 Bit) RAM (Add 512 MB if running in a virtual machine)
- HDD 20 GB Hard Disk Space and Above Hardware Requirements5400 RPM hard disk drive
- DirectX 9 capable video card running at 1024 x 768 or higher-resolution display
- DVD-ROM Drive

## **SOFTWARE REQUIREMENTS**

- WINDOWS OS (XP/2000/200 Server/2003 Server/Vista or7)
- Microsoft Visual Studio Ultimate 2010 Edition
- .Net Framework 4.0
- SQL Server Express Edition

# System design

## **4.1 DATA FLOW DIAGRAM**

A Data Flow Diagram (DFD) is a diagram that describes the flow of data and the processes that change data throughout a system. A structured analysis and design tool that can be used for flowcharting in place of or in association with information. Oriented and process oriented system flowcharts. When analysts prepare the Data Flow Diagram, they specify the user needs at a level of detail that virtually determines the information flow into and out of the system and the required data resources. This network is constructed by using a set of symbols that do not imply physical implementations. The Data Flow Diagram reviews the current physical system, prepares input and output specification, specifies the implementation plan etc.

Four basic symbols are used to construct data flow diagrams. They are symbols that represent data source, data flows, and data transformations and data storage. The points at which data are transformed are represented by enclosed figures, usually circles, which are called nodes.

## DATA FLOW DIAGRAM SYMBOLS



Source or Destination of Data



Data Flow



Process

## **Steps to Construct Data Flow Diagram**

Four Steps are generally used to construct a DFD.

- Process should be named and referred for easy reference. Each name should be representative of the reference.
- The destination of flow is from top to bottom and from left to right.
- When a process is distributed into lower level details they are numbered.
- The names of data stores, sources and destinations are written in capital letters.

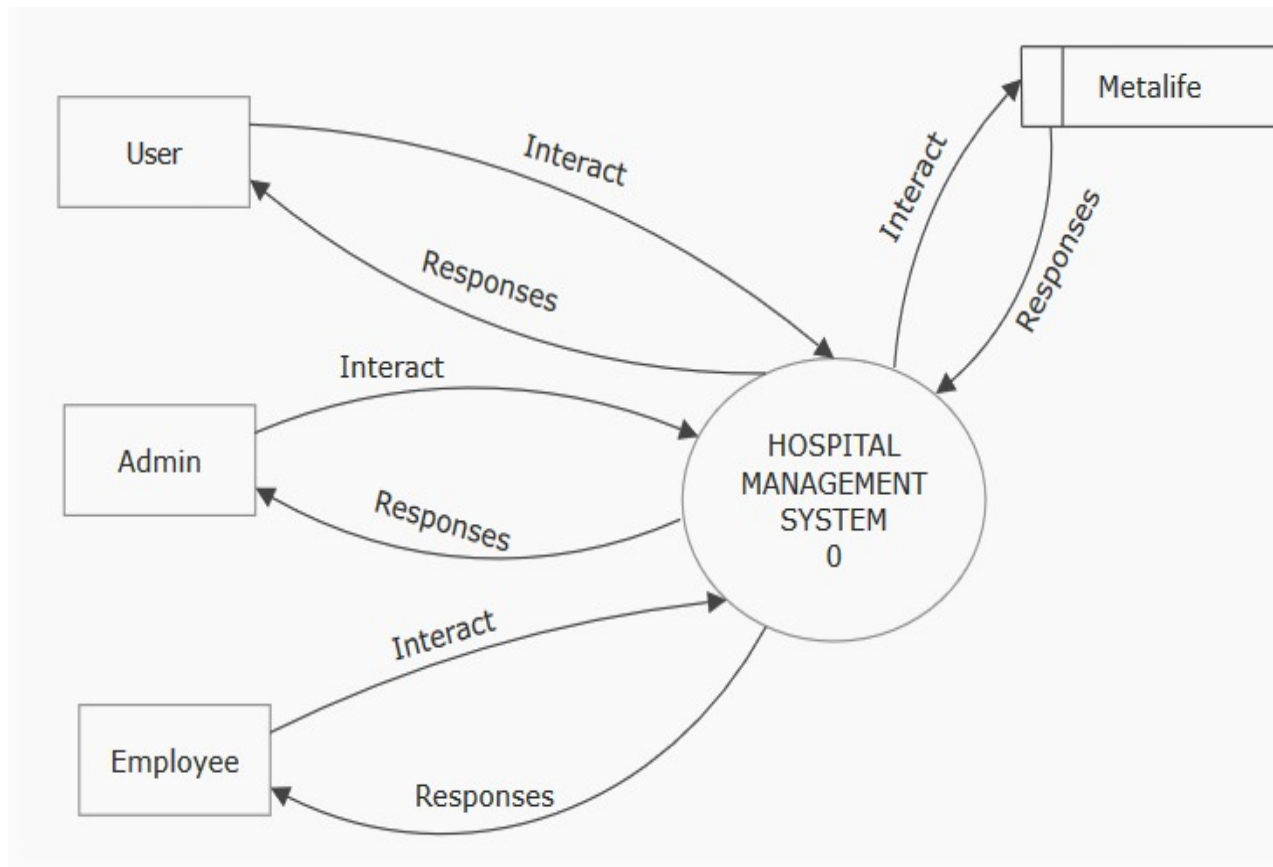
Rules for constructing a Data Flow Diagram-

- Arrows should not cross each other.
- Squares, Circles, Files must bear a name.
- Decomposed data flow squares and circles can have same names.
- Draw all data flow around the outside of the diagram.

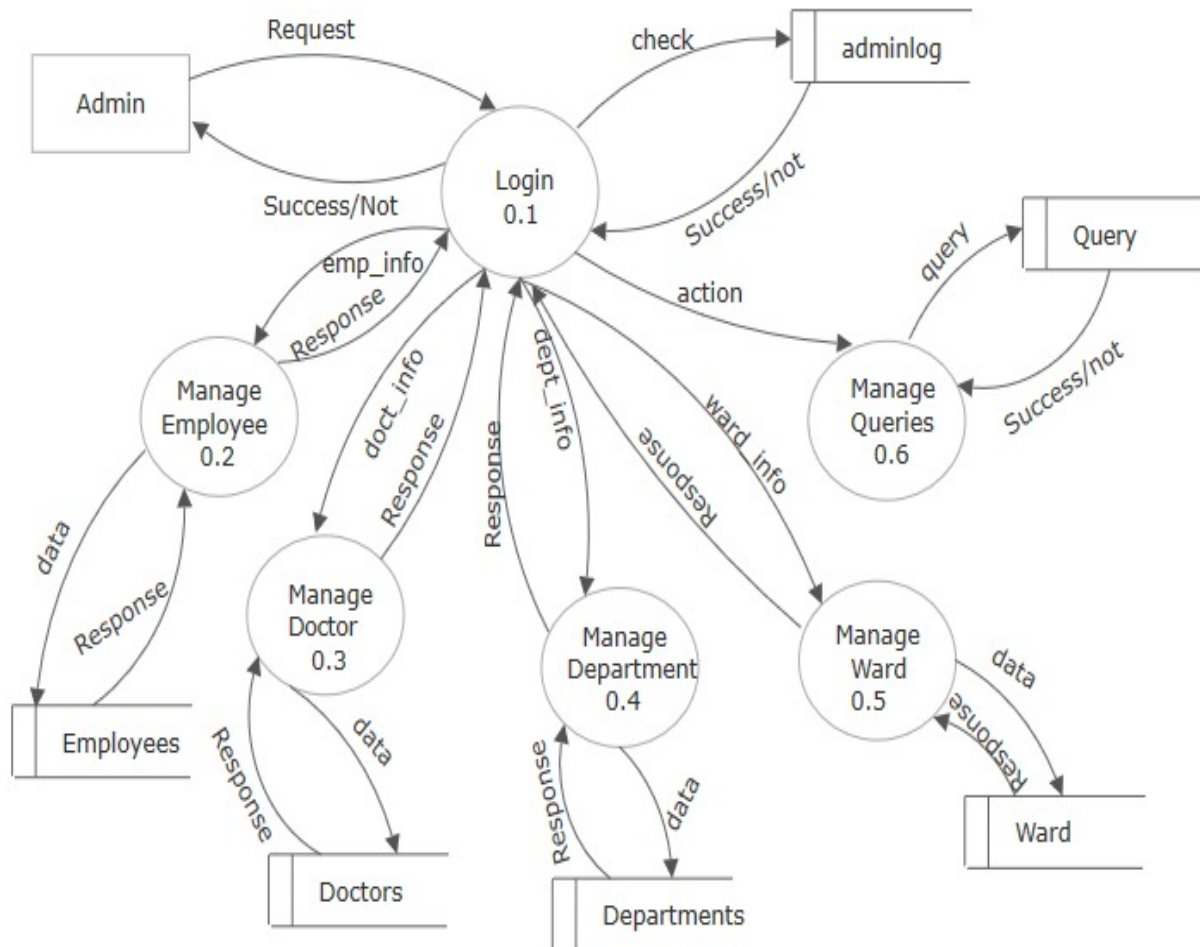


# DATA FLOW DIAGRAM

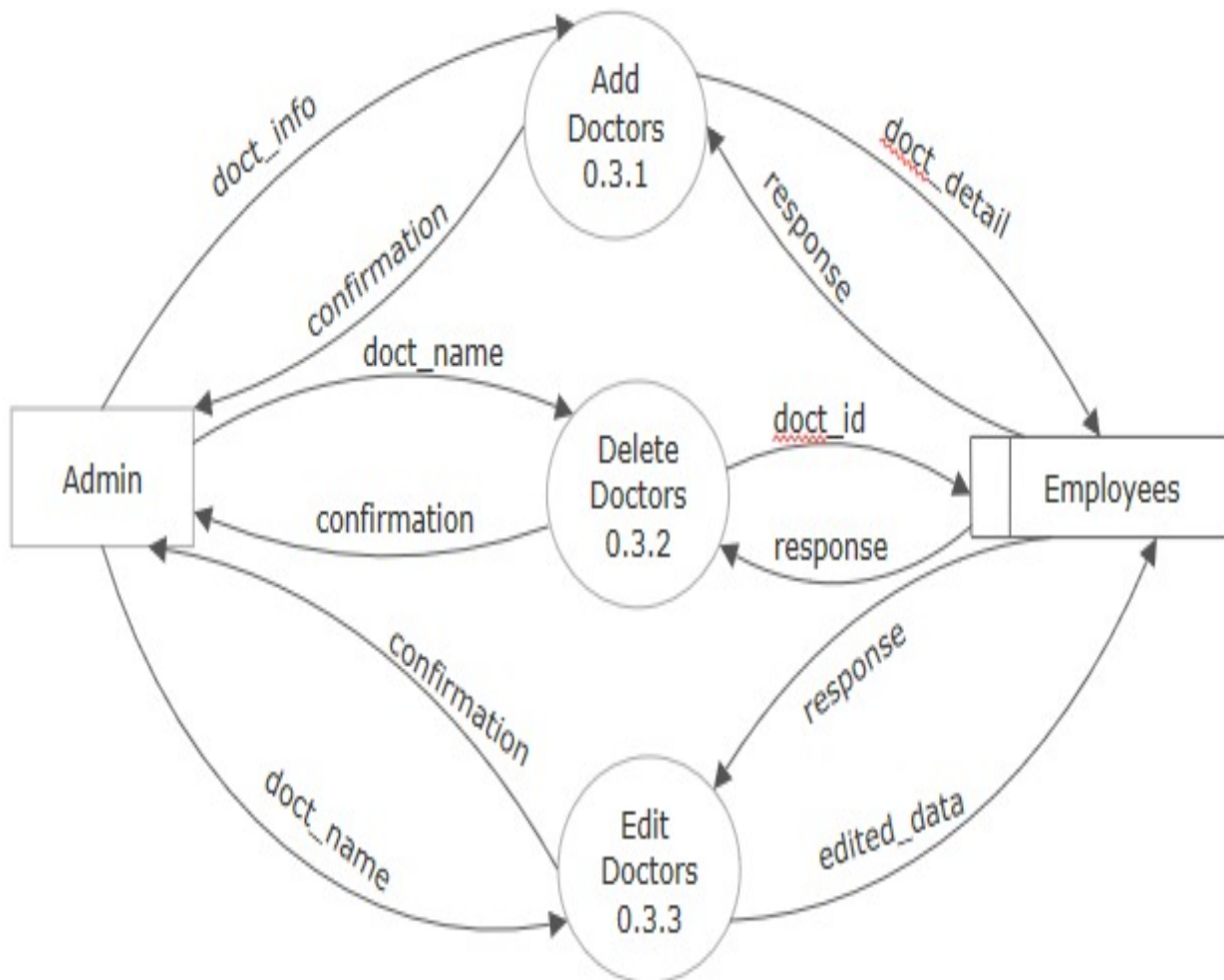
## ZERO LEVEL DFD:



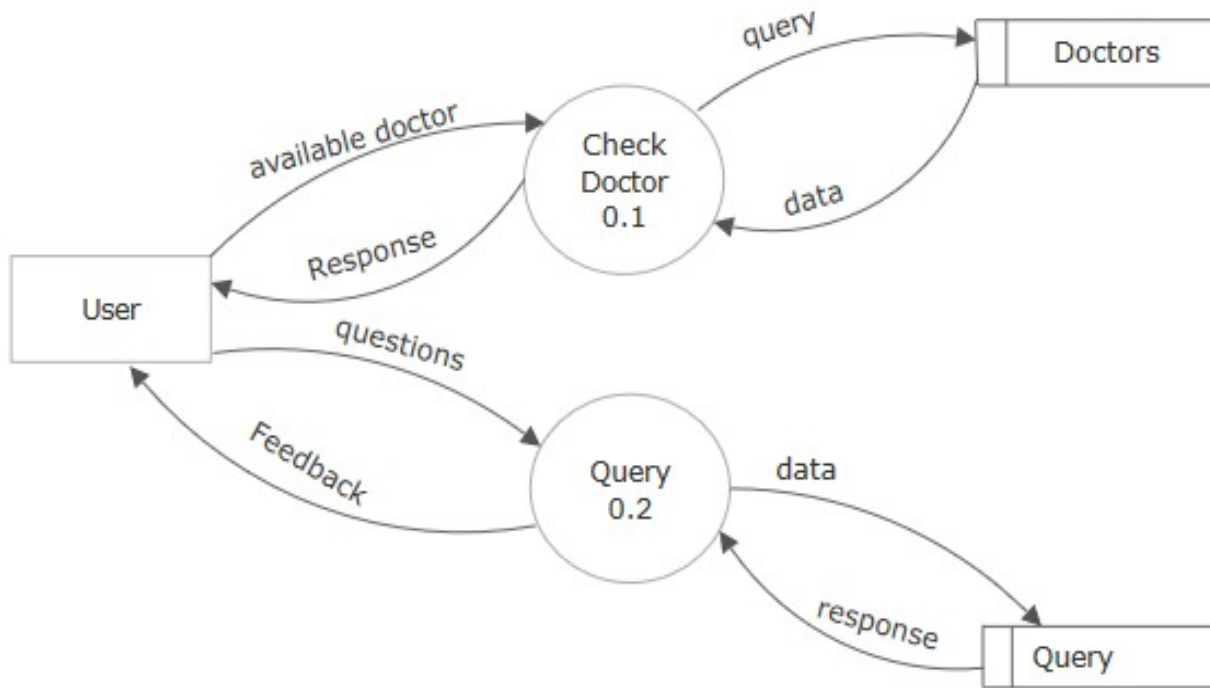
## ADMIN 1 LEVEL DFD:



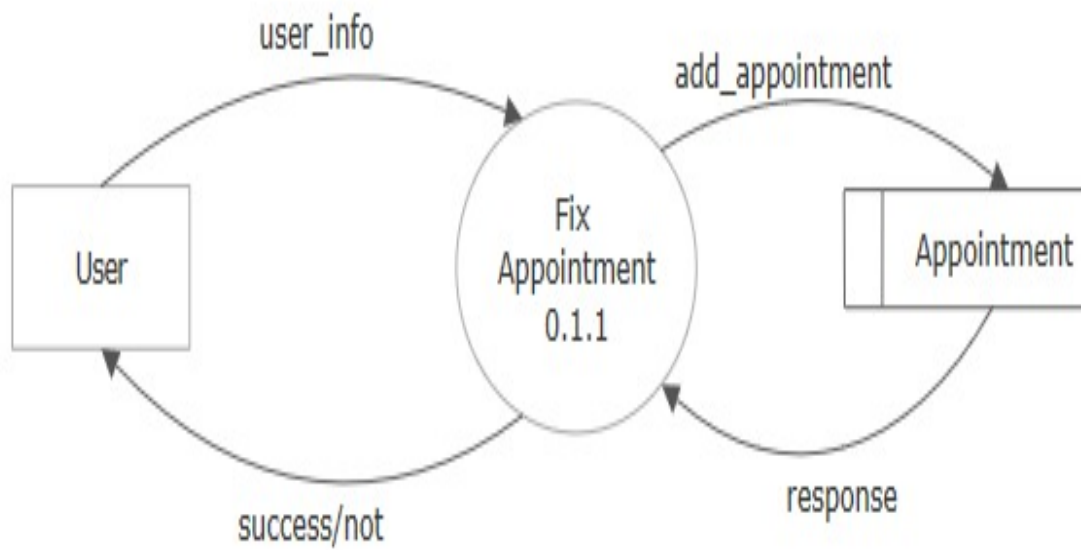
## ADMIN 2 LEVEL DFD



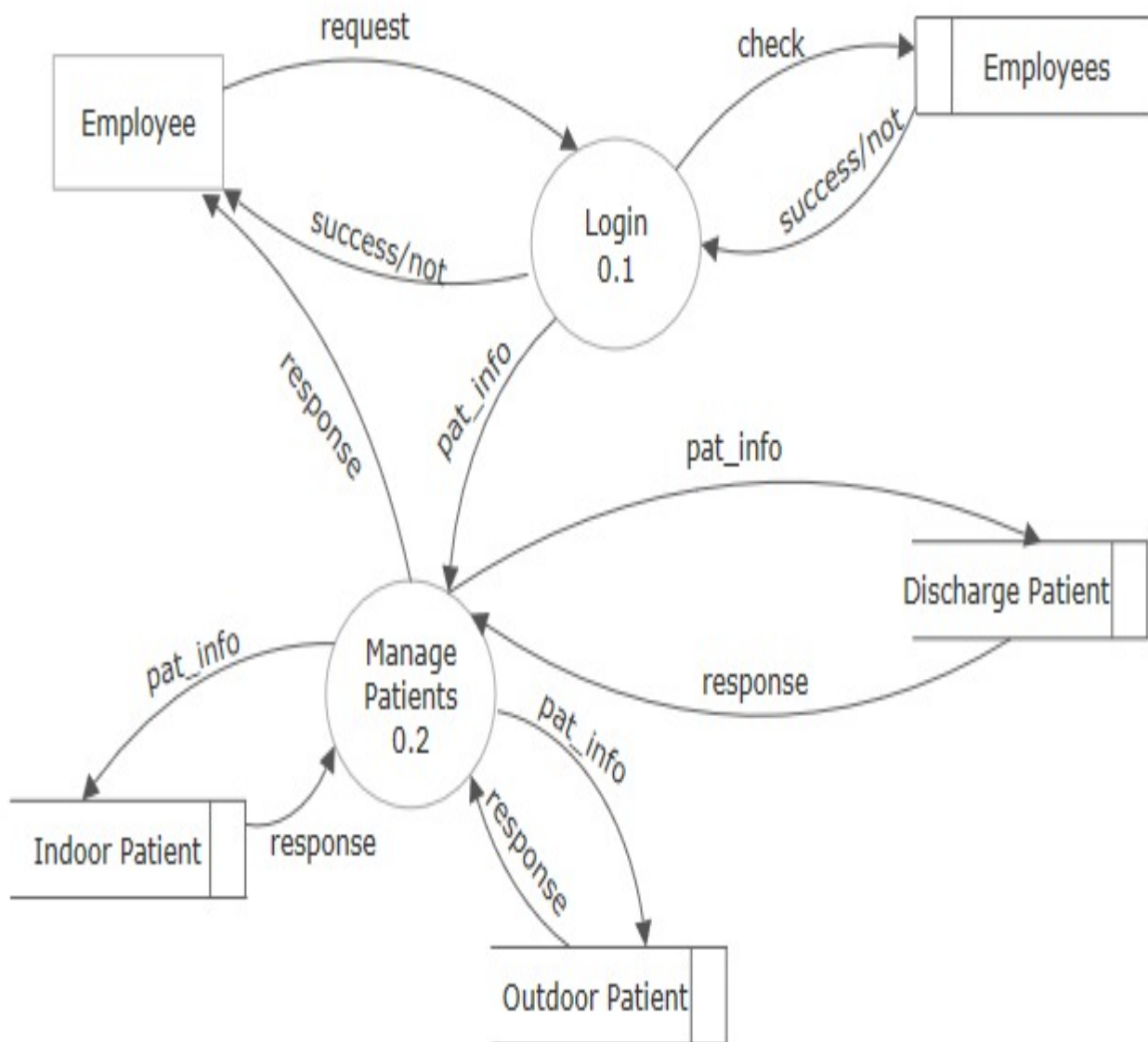
## USER 1 LEVEL DFD:



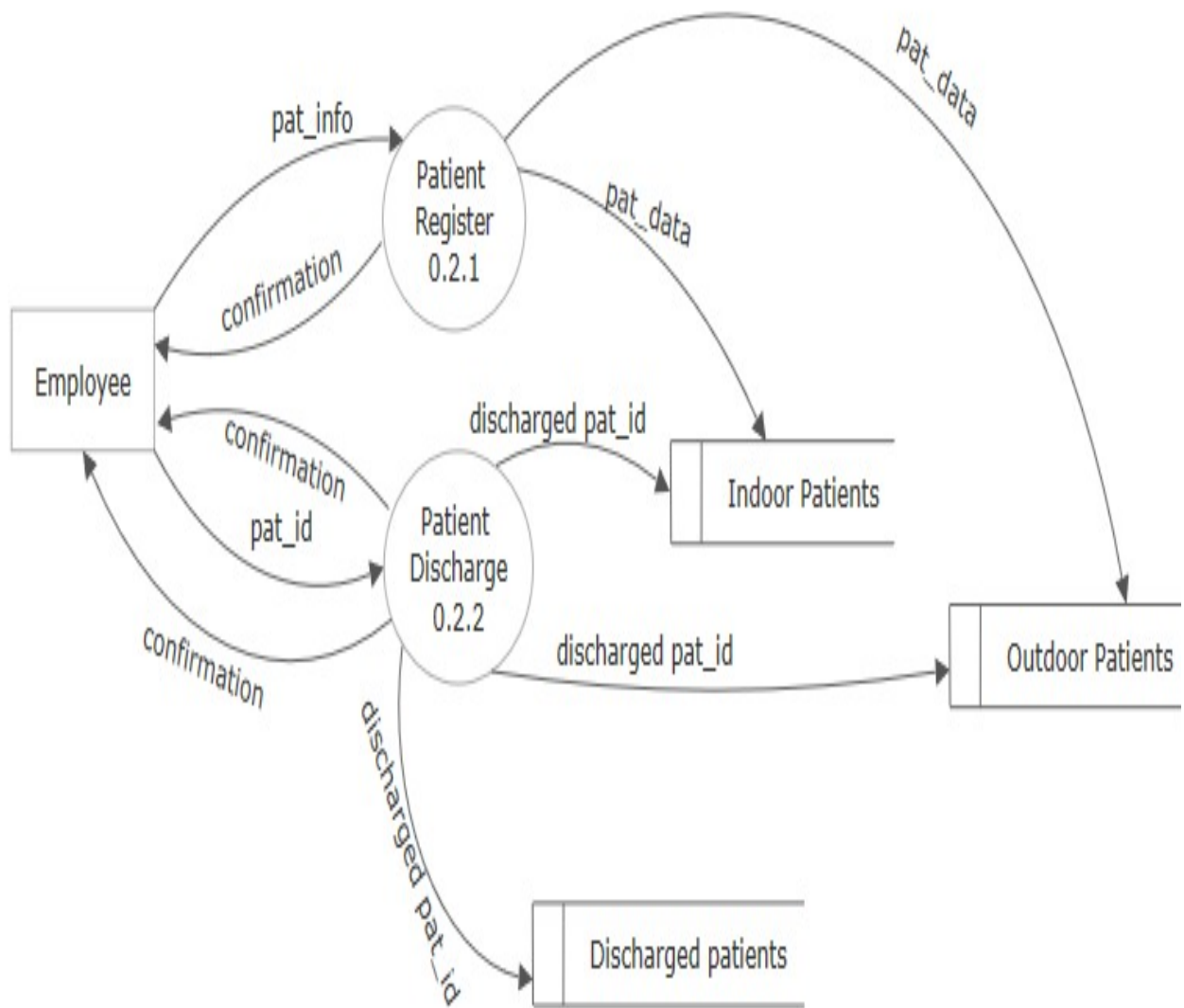
### USER 2 LEVEL DFD:



### EMPLOYEE 1 LEVEL DFD:



### **EMPLOYEE 2 LEVEL DFD:**







## 4.2 ENTITY RELATIONSHIP DIAGRAM

In [software engineering](#), an **entity–relationship model (ER model)** is a [data model](#) for describing the data or information aspects of a business domain or its process requirements, in an abstract way that lends itself to ultimately being implemented in a [database](#) such as a [relational database](#). The main components of ER models are [entities](#) (things) and the relationships that can exist among them.

However, variants of the idea existed previously, and have been devised subsequently such as super type and subtype data entities and commonality relationships.

An entity–relationship model is a systematic way of describing and defining a business process. The process is modeled as components (*entities*) that are linked with each other by *relationships* that express the dependencies and requirements between them, such as: *one building may be divided into zero or more apartments, but one apartment can only be located in one building*. Entities may have various properties (*attributes* that characterize them. Diagrams created to represent these entities, attributes, and relationships graphically are called entity–relationship diagrams.

An ER model is typically implemented as a [database](#). In the case of a [relational database](#), which stores data in tables, every row of each table represents one instance of an entity. Some data fields in these tables point to indexes in other tables; such pointers represent the relationships.

The [three schema approach](#) to [software engineering](#) uses three levels of ER models that may be developed.

An **entity** may be defined as a thing capable of an independent existence that can be uniquely identified. An entity is an abstraction from the complexities of a domain.

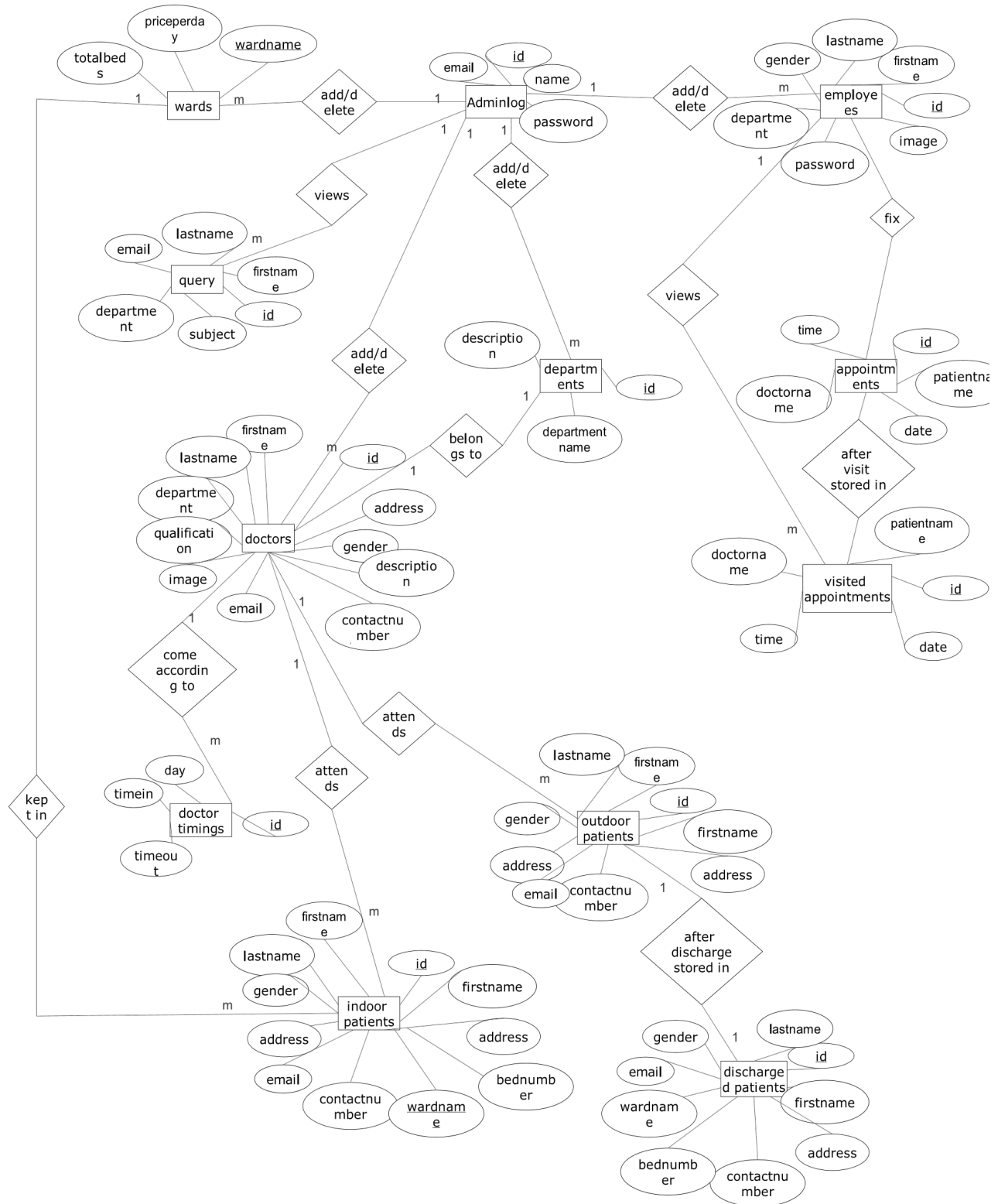
When we speak of an entity, we normally speak of some aspect of the real world that can be distinguished from other aspects of the real world.

A relationship captures how entities are related to one another. Relationships can be thought of as verbs, linking two or more nouns.

Cardinality constraints are expressed as follows:

- a double line indicates a *participation constraint*, [totality](#) or [subjectivity](#) : all entities in the entity set must participate in *at least one* relationship in the relationship set;
- an arrow from entity set to relationship set indicates a [key constraint](#) i.e. [injectivity](#): each entity of the entity set can participate in *at most one* relationship in the relationship set;
- A thick line indicates both, i.e. [bijectivity](#): each entity in the entity set is involved in *exactly one* relationship.
- An underlined name of an attribute indicates that it is a [key](#): two different entities or relationships with this attribute always have different values for this attribute.

**Figure: Entity-Relationship diagram**



## **4.3 MODULARIZATION DETAILS**

As Modularization has gained increasing focus from companies outside its traditional industries of aircraft and automotive, more and more companies turn to it as strategy and product development tool. I intend to explain the importance aspects of modularization and how it should be initiated within a company. After determining the theoretical steps of modularization success described in literature, I intend to conduct a multiple case study of companies who have implemented modularization in order to find how real world modularization was initiated and used to improve the company's competitiveness. By combining theory and practical approach to modularization I will derive at convergence and divergence between theoretical implementation to modularization and real world implementation to modularization. This gives a valuable input for both implantations in companies as well as new aspects to be further.

## DATA INTEGRITY AND CONSTRAINTS

Data integrity is normally enforced in a [database system](#) by a series of [integrity constraints](#) or rules. Three types of integrity constraints are an inherent part of the relational data model: entity integrity, referential integrity and domain integrity:

- [Entity integrity](#) concerns the concept of a [primary key](#). Entity integrity is an integrity rule which states that every table must have a primary key and that the column or columns chosen to be the primary key should be unique and not null.
- Concerns the concept of a [foreign key](#). The referential integrity rule states that any foreign-key value can only be in one of two states. The usual state of affairs is that the foreign-key value refers to a primary key value of some table in the database. Occasionally, and this will depend on the rules of the data owner, a foreign-key value can be [null](#). In this case we are explicitly saying that either there is no relationship between the objects represented in the database or that this relationship is unknown.
- *Domain integrity* specifies that all columns in a relational database must be declared upon a defined domain. The primary unit of data in the relational data model is the data item. Such data items are said to be non-decomposable or atomic. A domain is a set of values of the same type.

- 

## **4.4 DATABASE DESIGN**

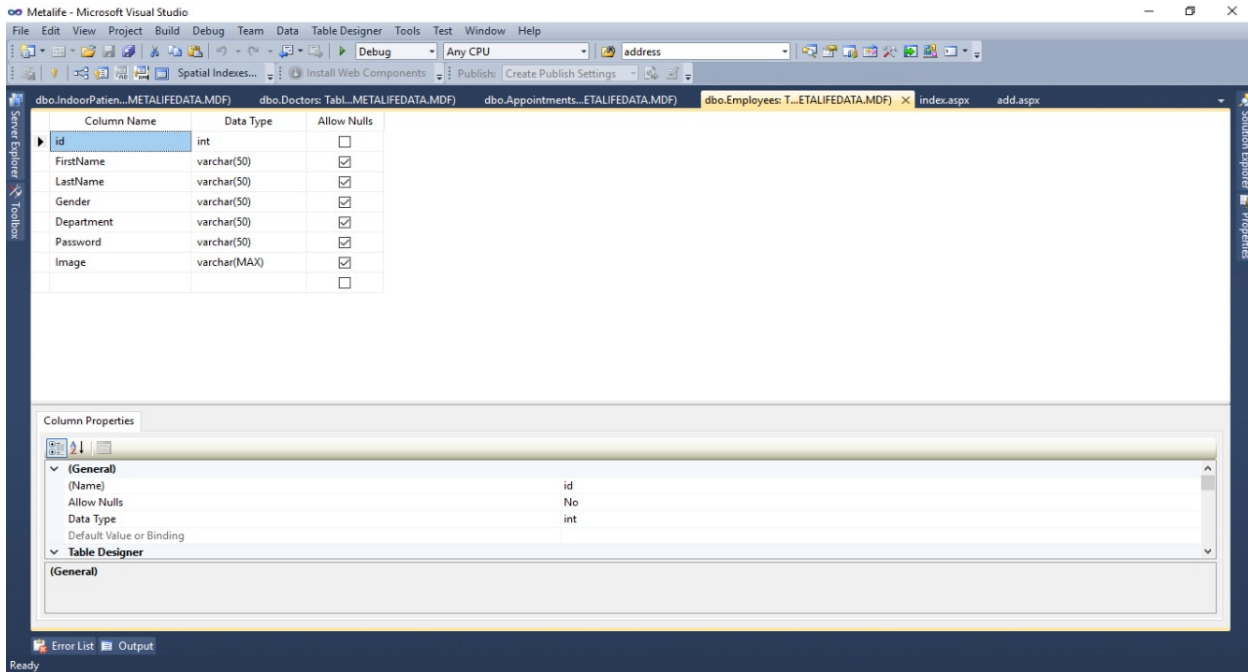
A database is an organized mechanism that has capability of storing information through which a user can retrieve stored information in an effective and efficient manner. The data is the purpose of any database and must be protected.

The database design is two level processes. In the first step, user requirements are gathered together and a database is designed which will meet these requirements as clearly as possible. This step is called information Level design and it is taken independent of any individual DBMS.

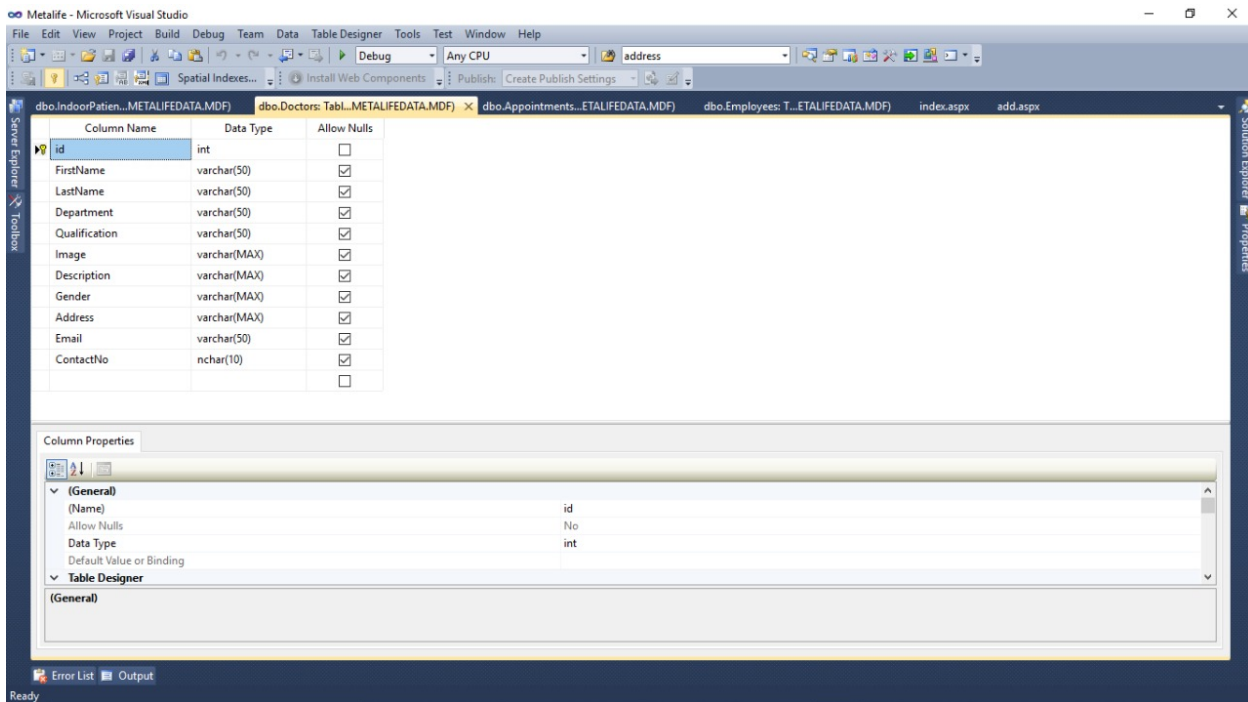
In the following snapshots we display the way we have used SQL Server as the back-end RDBMS for our project and the various entities that have been used along with their table definition and table data.

# DATA DICTIONARY

## EMPLOYEE'S TABLE:

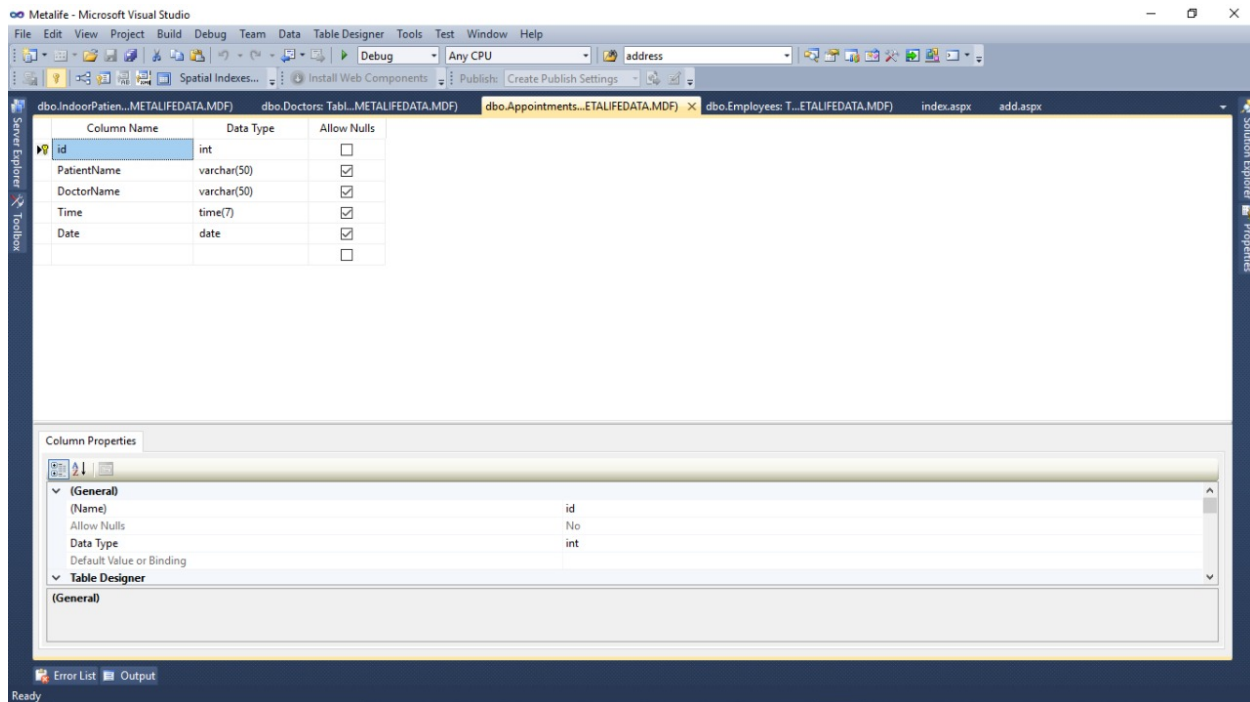


## DOCTOR'S TABLE:

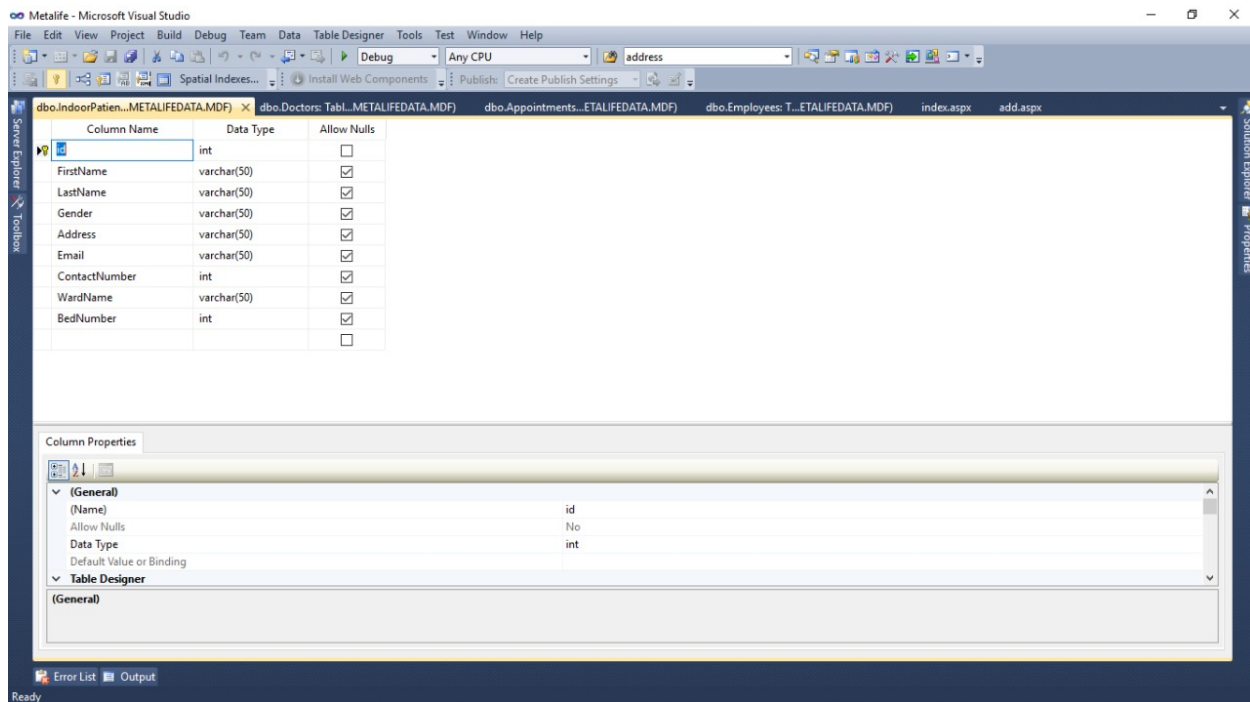




## PATIENT'S APPOINTMENT DETAILS:



## INDOOR PATIENT'S DETAILS:



## 4.5 USER INTERFACE DESIGN

**User interface design (UID)** or **user interface engineering** is the [design](#) of [user interfaces](#) for [machines](#) and [software](#), such as computers, [home appliances](#), [mobile devices](#), and other [electronic devices](#), with the focus on maximizing the [user experience](#). The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals ([user-centered design](#)).

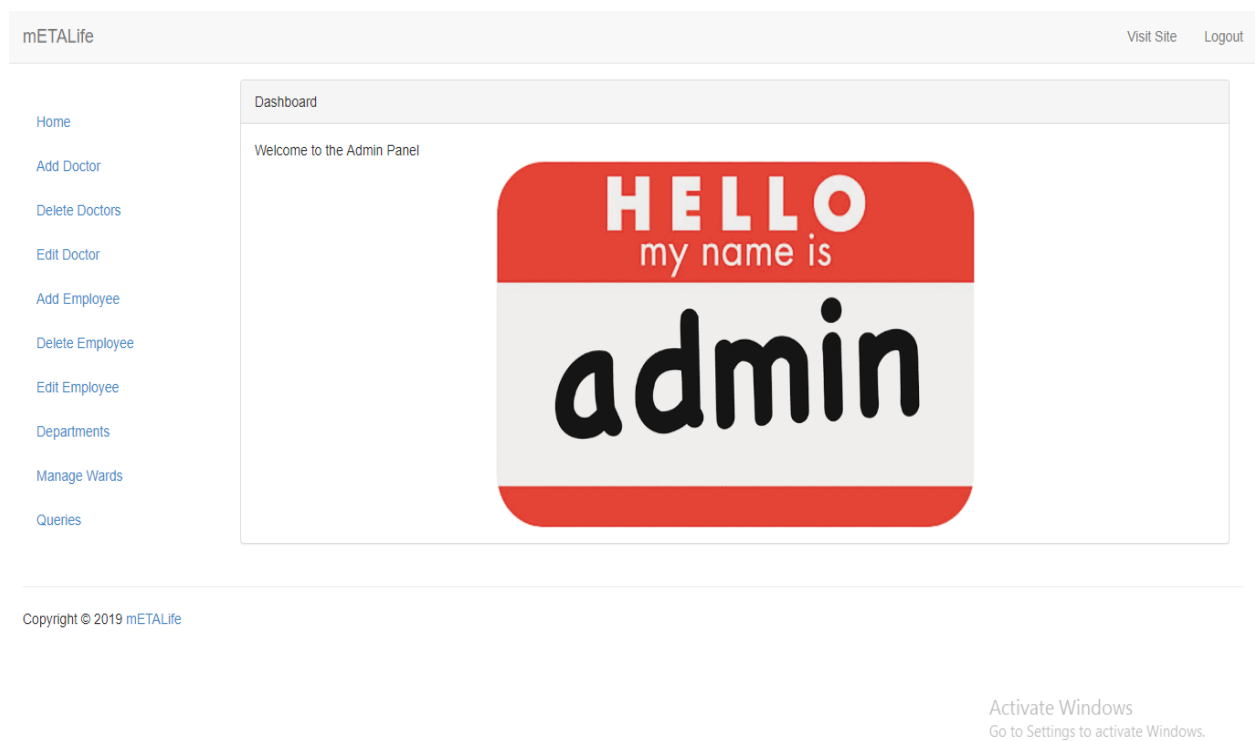
Good user interface design facilitates finishing the task at hand without drawing unnecessary attention to it. [Graphic design](#) and typography are utilized to support its [usability](#), influencing how the user performs certain interactions and improving the aesthetic appeal of the design; design aesthetics may enhance or detract from the ability of users to use the functions of the interface. The design process must balance technical functionality and visual elements (e.g., [mental model](#)) to create a system that is not only operational but also usable and adaptable to changing user needs.

Interface design is involved in a wide range of projects from computer systems, to cars, to commercial planes; all of these projects involve much of the same basic human interactions yet also require some unique skills and knowledge. As a result, designers tend to specialize in certain types of projects and have skills centered on their expertise, whether that be [software design](#), user research, [web design](#), or [industrial design](#).

## SNAPSHOTS

### HOME PAGE

#### Admin panel home page:



## Add doctor by admin:

mETALife

Visit SiteLogout

Home

Add Doctor

Delete Doctors

Edit Doctor

Add Employee


Delete Employee

Edit Employee

Departments

Manage Wards

Queries



Dashboard

First Name:

Krishna

Last Name:

Bose

Address:

12, Elgin Road, kolkata-72

Gender

☐Male☒Female

Contact Number:

1234567890

E-mail:

bosekrishna@gmail.com

Department

Psychology

Qualification:

MD(Psychiatry)

Image:

Choose FileNo file chosen

Upload

image uploaded successfully

Days:

☒monday

12:12

13:13

☐tuesday

☐wednesday

☐thursday

☐friday

☒saturday

20:20

21:20

☐sunday

Description:

specialist in psychiatric treatments

submit

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Page 44

## Edit doctor by admin:

mETALife

Visit SiteLogout

Home

Add Doctor

Delete Doctors

Edit Doctor

Add Employee

Delete Employee

Edit Employee

Departments

Manage Wards

Queries

Dashboard

Shivam	Choudhary	Psychology	Edit	
Satyam	Chowdhury	ENT	Edit	
Sundram	Choudhary	ENT	Edit	
Minmoy	Saha	Surgery	Edit	
Asssss	Asssss	Endocrinology	Edit	

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## Edit doctor form:

mETALife

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Home

Add Doctor

Delete Doctors

Edit Doctor

Add Employee


Delete Employee

Edit Employee

Departments

Manage Wards

Queries



Dashboard

First Name:

Shivam

Last Name:

Choudhary

Address:

Howrah

Gender

☒male☐female

Contact Number:

9062330628

E-mail:

abcd@gmail.com

Department

Psychology

Qualification:

MD

Image:

Choose File

No file chosen

Upload

Days:

☐monday

☐tuesday

☐wednesday

☐thursday

☒friday

☐saturday

☐sunday

12:30

13:30

Description:

Good

submit

## Delete doctors by admin:

mETALife

Visit SiteLogout

Home

Add Doctor

Delete Doctors

Edit Doctor

Add Employee

Delete Employee

Edit Employee

Departments

Manage Wards

Queries

Dashboard

Shivam	Choudhary	Psychology		Remove	
Satyam	Chowdhury	ENT		Remove	
Sundram	Choudhary	ENT		Remove	
Mrinmoy	Saha	Surgery		Remove	
Asssss	Asssss	Endocrinology		Remove	

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Activate Windows

Go to Settings to activate Windows.

localhost:56990/Admin/edit\_doctor\_list.aspx

## Add employee by admin:

mETALife

Visit SiteLogout

Home

Add Doctor

Delete Doctors

Edit Doctor

Add Employee


Delete Employee

Edit Employee

Departments

Manage Wards

Queries



Dashboard

First Name:

Mrinmoy

Last Name:

Saha

Gender

☒ male ☐ female

Department

Non-Technical

Image:

Choose File

No file chosen

image uploaded successfully

Set password:

RoA1MCYuk

submit

Upload

Generate

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## Delete employee by admin:

mETALife

Visit SiteLogout

Home

Add Doctor

Delete Doctors

Edit Doctor

Add Employee

Delete Employee

Edit Employee

Departments

Manage Wards

Queries

Dashboard

DMMM	DFBDFBDFB	female	Non-Technical		Remove
Pshivam	Leku	female	Non-Technical		Remove
zcxczc	zcxczcxc	female	Technical		Remove
rita	saha	female	Non-Technical		Remove
Lkkkj	Lnknkn	female	Technical		Remove
Laaa	Laaa	female	Technical		Remove

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## Edit employee by admin:

mETALife

Visit SiteLogout

[Home](#)  
[Add Doctor](#)  
[Delete Doctors](#)  
[Edit Doctor](#)  
[Add Employee](#)  
[Delete Employee](#)  
[Edit Employee](#)  
[Departments](#)  
[Manage Wards](#)  
[Queries](#)

Dashboard

DMMM	DFBDFBDFB	Non-Technical	Edit
Pshivam	Leku	Non-Technical	Edit
zcxczc	ZXCZXCZXC	Technical	Edit
rita	saha	Non-Technical	Edit
Lkkkj	Lnknkn	Technical	Edit
Laaa	Laaa	Technical	Edit

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## Edit employee form by admin:

mETALife

Visit SiteLogout

[Home](#)  
[Add Doctor](#)  
[Delete Doctors](#)  
[Edit Doctor](#)  
[Add Employee](#)  
[Delete Employee](#)  
[Edit Employee](#)  
[Departments](#)  
[Manage Wards](#)  
[Queries](#)

Dashboard

First Name:

DMMM

Last Name:

DFBDFBDFB

Gender

☐ male ☒ female

Department

Non-Technical

Image:

Choose File

No file chosen

image uploaded successfully

Upload

Set password:

7wleUqD4P

Generate

submit

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## Add or delete department by admin:

mETALife

Visit SiteLogout

[Home](#)  
[Add Doctor](#)  
[Delete Doctors](#)  
[Edit Doctor](#)  
[Add Employee](#)  
[Delete Employee](#)  
[Edit Employee](#)  
[Departments](#)  
[Manage Wards](#)  
[Queries](#)

Dashboard

Departments List

2	Psychology		Remove
3	ENT		Remove
4	Surgery		Remove
5	Endocrinology		Remove
9	cardiology		Remove
22	gastroenterology		Remove

Add Department

Description

Add

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## Edit or delete wards:

mETALife

Visit SiteLogout

[Home](#)  
[Add Doctor](#)  
[Delete Doctors](#)  
[Edit Doctor](#)  
[Add Employee](#)  
[Delete Employee](#)  
[Edit Employee](#)  
[Departments](#)  
[Manage Wards](#)  
[Queries](#)

Dashboard

ADD NEW WARD:

WardName	
PricePerDay	
TotalBeds	
<a href="#">Insert</a> <a href="#">Cancel</a>	

WARDS:

WardName	PricePerDay	TotalBeds	OccupiedBeds	
general	500.0000	50		<a href="#">Edit</a> <a href="#">Delete</a>
Luxury	1000.0000	20		<a href="#">Edit</a> <a href="#">Delete</a>
semi-luxury	700.0000	30		<a href="#">Edit</a> <a href="#">Delete</a>

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## Query section:

mETALife

Visit SiteLogout

Home

Add Doctor

Delete Doctors

Edit Doctor

Add Employee

Delete Employee

Edit Employee

Departments

Manage Wards

Queries

Dashboard

minmoy2 saha2

sahaminmoy1996@gmail.com

cardiology

what is the cost of a test?

delete query

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## Employee login page:

mETALife

Visit Site

Employee Login Here

Username

Enter Username

Password

Enter Password

Login

Forget Password Jump to User Page

## Employee panel home page:

The screenshot shows the 'Employee Panel: mETALife' interface. The top navigation bar includes a back arrow, the text 'Employee Panel: mETALife', the user 'Administrator', and a 'LOG OUT' link. The left sidebar contains the mETALife logo and a menu with 'Home' (highlighted in red), 'Patients Register', 'Patients Discharge', 'Fix Appointment', 'Check Doctors', and 'View Appointment'. The main content area is titled 'Home Dashboard' and features a 'Search By Name:' section with a text input field labeled 'Enter patient's name', a blue 'Search' button, and radio buttons for 'indoor' and 'outdoor' (the latter is selected). The footer contains the copyright notice '© 2019 mETALife. All Rights Reserved ®' and the slogan 'Care for the perfect life'.

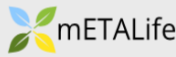
## Patient registration by employee:

The screenshot shows the 'Patients register' page in the mETALife system. The top navigation bar is identical to the previous page. The left sidebar menu is the same, but 'Patients Register' is now highlighted in red. The main content area is titled 'Patients register' and contains a 'Patient registration' form. The form fields include 'First Name', 'Last Name', 'E-mail', 'Mobile Number', and 'Address'. Below these are two rows of radio buttons: the first row has 'Male' (selected) and 'Female'; the second row has 'indoor' (selected) and 'outdoor'. A large blue 'Register' button is at the bottom of the form. The footer is the same as the previous page.

## Patient discharge by employee:

Employee Panel: mETALife

User: Administrator → LOG OUT



Home  
Patients Register  
**Patients Discharge**  
Fix Appointment  
Check Doctors  
View Appointment

Patients Discharge

List of Patients

5555	ttttttt	Male	ffffff	Discharge
ttttyyy	yyyyy	Male	ffffff	Discharge
aaaaaaa	aaaaaaa	Female	333	Discharge
rahul	bhatnagar	Male	fsdfsdfsdf	Discharge
rahul	bhatnagar	Male	fsdfsdfsdf	Discharge

List of discharged patients

	kkkkkkkkkk	Male	mmmmmmmmmmmmmm
minmoy	saha	Male	dddddddddddddddd
qqqqqqqqqq	qqqqqqqqqqqq	Male	ssssssssssssssss
wwwwwwwww	wwwwwwwwwwww	Male	eeeeeeeee
ttttyyyhhhhhh	yyyyyyhhhhhh	Male	ffffff

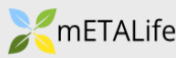
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## Fix appointment by employee:

Employee Panel: mETALife

User: Administrator → LOG OUT



Home  
Patients Register  
Patients Discharge  
**Fix Appointment**  
Check Doctors  
View Appointment

Fix Appointment

Patient Name  
Enter patient's name

☐ indoor ☒ outdoor

Doctor name  
Shivam Choudhary

Date  
dd - mm - yyyy

Time

Make appointment

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Care for the perfect life

## Check doctors by employee:

781790800810820

Employee Panel: mETALife User: Administrator → LOG OUT

mETALife

Home  
Patients Register  
Patients Discharge  
Fix Appointment  
**Check Doctors**  
View Appointment

### Check Doctors

Shivam	Choudhary
Psychology	
friday	12:30 13:30
<a href="#">book appointment</a>	
Satyam	Chowdhury
ENT	
<a href="#">book appointment</a>	
Sundram	Choudhary
ENT	
<a href="#">book appointment</a>	
Mrinmoy	Saha
Surgery	
<a href="#">book appointment</a>	
Asssss	Asssss
Endocrinology	
<a href="#">book appointment</a>	

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## View appointments by employee:

Employee Panel: mETALife User: Administrator → LOG OUT

mETALife

Home  
Patients Register  
Patients Discharge  
Fix Appointment  
Check Doctors  
**View Appointment**

### View Appointment

#### List of Appointments

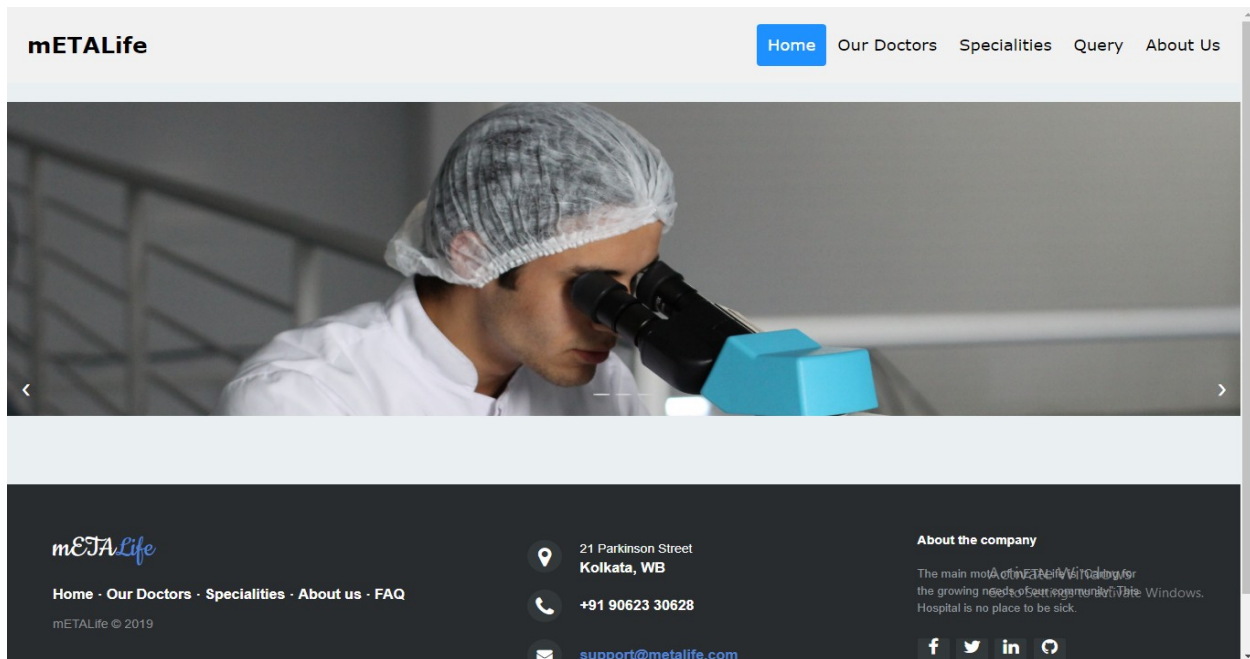
vivek1234	Juli	00:00:00	01-01-1900 00:00:00	<a href="#">Visited</a>
mrinmoy	Satyam Chowdhury	14:26:25	24-04-2019 00:00:00	<a href="#">Visited</a>
dved	Shivam Choudhary	14:29:25	24-04-2019 00:00:00	<a href="#">Visited</a>
shiva	Sundram Choudhary	14:34:30	24-04-2019 00:00:00	<a href="#">Visited</a>
mrinmoy saha	Shivam Choudhary	12:30:00	09-05-2019 00:00:00	<a href="#">Visited</a>
	Shivam Choudhary	00:00:00	01-01-1900 00:00:00	<a href="#">Visited</a>

#### Appointments History

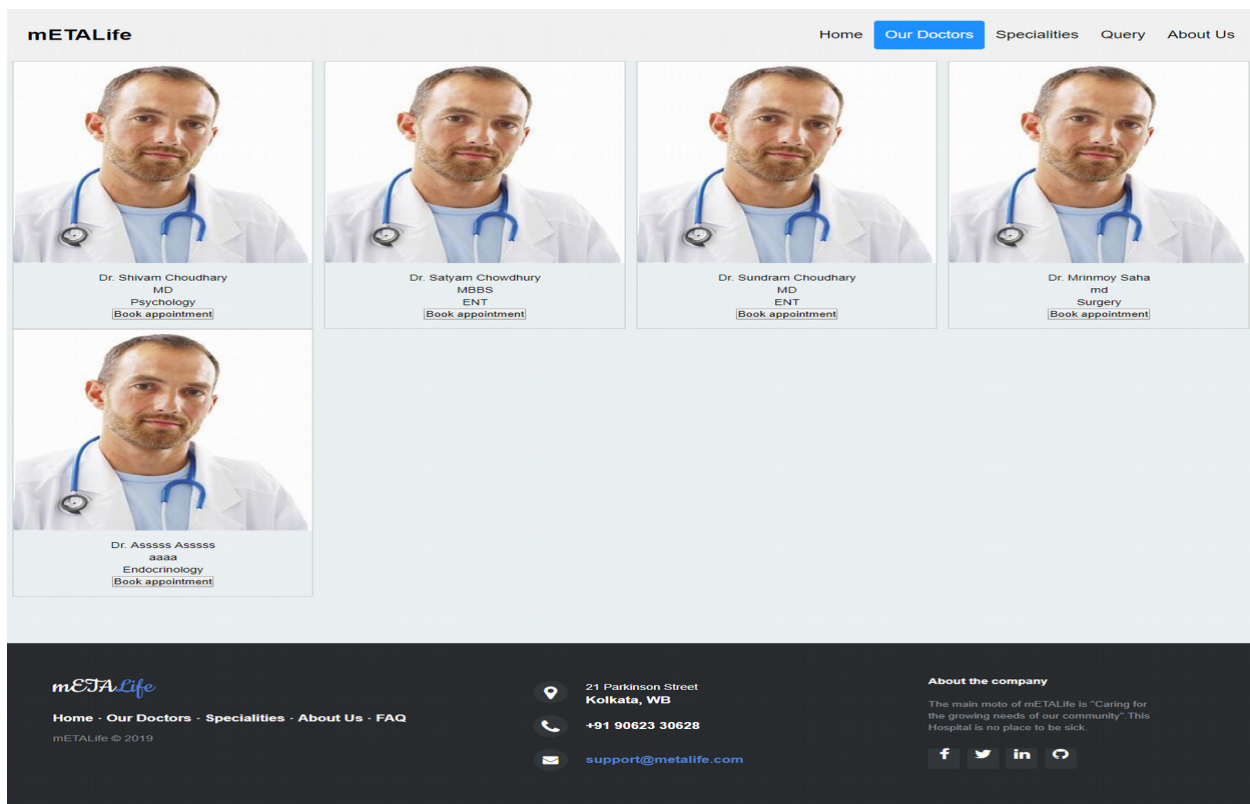
1	ads	sdadad	01:00:00	03-10-2019 00:00:00
2	mrinmoy	asdasd	01:01:00	03-05-2019 00:00:00
3	puka	asdasd	00:00:00	01-01-1900 00:00:00
4	sddssd	asdasd	00:00:00	01-01-1900 00:00:00
5	sdsfd	asdasd	00:00:00	01-01-1900 00:00:00
9	vivek1234	asdasd	00:00:00	01-01-1900 00:00:00
10	ghfghf	asdasd	00:00:00	01-01-1900 00:00:00
8	sdsfd	asdasd	00:00:00	01-01-1900 00:00:00
7	puka	asdasd	00:00:00	01-01-1900 00:00:00
15	shiva	Sundram Choudhary	14:34:42	24-04-2019 00:00:00
17	aaaaaaaa aaaaaa	Shivam Choudhary	12:30:00	05-09-2019 00:00:00
6	ghfghf	asdasd	00:00:00	01-01-1900 00:00:00

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## User home page:



## View Doctors by user:



## Appointment form for user:

**mETALife**[Home](#)[Our Doctors](#)[Specialities](#)[Query](#)[About Us](#)

### Appointment Form

**Name:**

**Address:**

**Contact Number:**

**E-mail:**

**Gender:**  
☒ Male ☐ Female

☐ Remember me



[Home](#) · [Our Doctors](#) · [Specialities](#) · [Contact us](#) · [FAQ](#)

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Kolkata, WB

 +91 90623 30628

 [support@metalife.com](mailto:support@metalife.com)

**About the company**

The main moto of mETALife is "Caring for the growing needs of our community". This Hospital is no place to be sick.



## View specialities by user:

**mETALife**[Home](#)[Our Doctors](#)[Specialities](#)[Query](#)[About Us](#)

**Psychology**

An emergency department (ED), also known as an accident & emergency department (A&E), emergency room (ER), emergency ward (EW) or casualty department, is a medical treatment facility specializing in emergency medicine, the acute care of patients who present without prior appointment; either by their own means or by that of an ambulance. The emergency department is usually found in a hospital or other primary care center. .

**ENT**

An emergency department (ED), also known as an accident & emergency department (A&E), emergency room (ER), emergency ward (EW) or casualty department, is a medical treatment facility specializing in emergency medicine, the acute care of patients who present without prior appointment; either by their own means or by that of an ambulance. The emergency department is usually found in a hospital or other primary care center. .

**Surgery**

An emergency department (ED), also known as an accident & emergency department (A&E), emergency room (ER), emergency ward (EW) or casualty department, is a medical treatment facility specializing in emergency medicine, the acute care of patients who present without prior appointment; either by their own means or by that of an ambulance. The emergency department is usually found in a hospital or other primary care center. .

**Endocrinology**

An emergency department (ED), also known as an accident & emergency department (A&E), emergency room (ER), emergency ward (EW) or casualty department, is a medical treatment facility specializing in emergency medicine, the acute care of patients who present without prior appointment; either by their own means or by that of an ambulance. The emergency department is usually found in a hospital or other primary care center. .

**cardiology**

An emergency department (ED), also known as an accident & emergency department (A&E), emergency room (ER), emergency ward (EW) or casualty department, is a medical treatment facility specializing in emergency medicine, the acute care of patients who present without prior appointment; either by their own means or by that of an ambulance. The emergency department is usually found in a hospital or other primary care center. .

**gastroenterology**

lorem ipsum

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[f](#) [t](#) [in](#) [g](#)

## Query form for user:

**mETALife**[Home](#)[Our Doctors](#)[Specialities](#)[Query](#)[About Us](#)

First Name

Your name

Last Name

Your name

E-Mail

Your e-mail

Department


Psychology


Subject


Your Subject

Submit

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Home - Our Doctors - Specialities - About us - mETALife © 2019





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## About us as seen by outside user:

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**About Us**

mETALife is a multi-speciality medical centre located at Pimpri-Chinchwad in the west Indian state of Maharashtra. The hospital is named for the late Mr. Aditya Birla. Mrs. Rajashree Birla, chairperson of the Aditya Birla Foundation which is funding the medical centre, is steering this project. It is Maharashtra's First Joint Commission International (JCI) and National Accreditation Board for Hospital (NABH) accredited hospital, and also India's First HACCP and ISO: 22000:2005 certified hospital


**Address**


21, Parkinson Street  
Kolkata, West Bengal


**Emergencies Number**

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+91 8240805244

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



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# IMPLEMENTATION AND TESTING

## **IMPLEMENTATION AND TESTING**

A software system test plan is a document that describes the objectives, scope, approach and focus of software testing effort. The process of preparing a test plan is a usual way to think the efforts needed to validate the acceptability of a software product. The complete document will help people outside the test group understand the "WHY" and "HOW" product validation. It should be through enough to be useful but not so through that no one outside the test group will read it.

## 5.1 INTRODUCTION

Testing is the process of running a system with the intention of finding errors. Testing enhances the integrity of a system by detecting deviations in design and errors in the system. Testing aims at detecting error-prone areas. This helps in the prevention of errors in a system. Testing also adds value to the product by conforming to the user requirements.

The main purpose of testing is to detect errors and error-prone areas in a system. Testing must be thorough and well-planned. A partially tested system is as bad as an untested system. And the price of an untested and under-tested system is high.

The implementation is the final and important phase. It involves user-training, system testing in order to ensure successful running of the proposed system. The user tests the system and changes are made according to their needs. The testing involves the testing of the developed system using various kinds of data. While testing, errors are noted and correctness is the mode.

## 5.2 OBJECTIVES OF TESTING

The objective our test plan is to find and report as many bugs as possible to improve the integrity of our program. .Although exhaustive testing is not possible, we will exercise a broad range of tests to achieve our goal. Our user interface to utilize these functions is designed to be user-friendly and provide easy manipulation of the tree. The application will only be used as a demonstration tool, but we would like to ensure that it could be run from a variety of platforms with little impact on performance or usability.

### **Process Overview**

The following represents the overall flow of the testing process:

1. Identify the requirements to be tested. All test cases shall be derived using the current Program Specification.
2. Identify which particular test(s) will be used to test each module.
3. Review the test data and test cases to ensure that the unit has been thoroughly verified and that the test data and test cases are adequate to verify proper operation of the unit.

4. Identify the expected results for each test.
5. Document the test case configuration, test data, and expected results.
6. Perform the test(s).
7. Document the test data, test cases, and test configuration used during the testing process. This information shall be submitted via the Unit/System Test Report (STR).
8. Successful unit testing is required before the unit is eligible for component integration/system testing.
9. Unsuccessful testing requires a Bug Report Form to be generated. This document shall describe the test case, the problem encountered, its possible cause, and the sequence of events that led to the problem. It shall be used as a basis for later technical analysis.
10. Test documents and reports shall be submitted. Any specifications to be reviewed, revised, or updated shall be handled immediately.

## 5.3 TEST CASES

A test case is a document that describe an input, action or event and expected response to determine if a feature of an application is working correctly. A test case should contain particular such as test case identifier, test condition, input data Requirement expected results. The process of developing test cases can help find problems in the requirement or design of an application, since it requires completely thinking through the operation of the application.

### TESTING STEPS

#### UNIT TESTING

Unit testing focuses efforts on the smallest unit of software design. This is known as module testing. The modules are tested separately. The test is carried out during programming stage itself. In this step, each module is found to be working satisfactory as regards to the expected output from the module.

#### INTEGRATION TESTING

---



Data can be lost across an interface. One module can have an adverse effect on another, sub functions, when combined, may not be linked in desired manner in major functions. Integration testing is a systematic approach for constructing the program structure, while at the same time conducting test to uncover errors associated within the interface. The objective is to take unit tested modules and builds program structure. All the modules are combined and tested as a whole.

## **VALIDATION**

At the culmination of the integration testing, Software is completely assembled as a package. Interfacing errors have been uncovered and corrected and a final series of software test begin in validation testing. Validation testing can be defined in many ways, but a simple definition is that the validation succeeds when the software functions in a manner that is expected by the customer. After validation test has been conducted, one of the three possible conditions exists.

- a) The function or performance characteristics confirm to specification and are accepted.
- b) A deviation from specification is uncovered and a deficiency lists is created.
- c) Proposed system under consideration has been tested by using validation test and found to be working satisfactory.

<b>Tested By:</b>	Shivam Choudhary
<b>Test Type</b>	Unit Testing
<b>Test Case Number</b>	1
<b>Test Case Name</b>	User Identification
<b>Test Case Description</b>	The user should enter his/ her accurate userid and password so that he/she can able to go for the further options. The test case will check the application for the same since a user can only login with the correct user id and password.
<b>Item(s) to be tested</b>	
1	Verification of the user id and password with the record in the database.
<b>Specifications</b>	
<b>Input</b>	<b>Expected Output/Result</b>
1)Correct User id and password 2)Incorrect Id or Password	1)Successful login 2)Failure Message

<b>Tested By:</b>	Mrinmoy Saha
<b>Test Type</b>	Unit Testing
<b>Test Case Number</b>	2
<b>Test Case Name</b>	User Registration
<b>Test Case Description</b>	A new user will enter his details in the registration form and the credentials will be checked by the validators used in the form. After all the credentials are validated then only the form will be submitted and data will be stored in the database
<b>Item(s) to be tested</b>	
1	Required fields in the form are not empty, validation of proper credentials
<b>Specifications</b>	
<b>Input</b>	<b>Expected Output/Result</b>
1) User id, name, password, phone, address, email. 2) Empty field, Invalid entry	1) Successful registration 2) Failure Message

## 5.4 WHITE BOX TESTING

In white box testing, the UI is bypassed. Inputs and outputs are tested directly at the code level and the results are compared against specifications. This form of testing ignores the function of the program under test and will focus only on its code and the structure of that code. Test case designers shall generate cases that not only cause each condition to take on all possible values at least once, but that cause each such condition to be executed at least once. To ensure this happens, we will be applying Branch Testing. Because the functionality of the program is relatively simple, this method will be feasible to apply.

Each function of the binary tree repository is executed independently; therefore, a program flow for each function has been derived from the code.

## 5.5 BLACK BOX TESTING

Black box testing typically involves running through every possible input to verify that it results in the right outputs using the software as an end-user would. We have decided to perform Equivalence Partitioning and Boundary Value Analysis testing on our application.

### System Testing

The goals of system testing are to detect faults that can only be exposed by testing the entire integrated system or some major part of it. Generally, system testing is mainly concerned with areas such as performance, security, validation, load/stress, and configuration sensitivity. But in our case we'll focus only on function validation and performance. And in both cases, we will use the black-box method of testing.

## **5.6 OUTPUT TESTING**

After performing the validation testing, the next step is output testing of the proposed system, since no system could be useful if it does not produce the required output in a specific format. The output format on the screen is found to be correct. The format was designed in the system design time according to the user needs. For the hardcopy also; the output comes as per the specified requirements by the user. Hence output testing did not result in any correction for the system.

## **5.7 USER ACCEPTANCE TESTING**

User acceptance of a system is the key factor for the success of any system. The system under consideration is tested for the user acceptance by constantly keeping in touch with the prospective system users at the time of developing and making changes whenever required.

This is done in regard to the following point:

- a) Input Screen Design
- b) Output Screen Design
- c) Format of reports and other outputs.

## 5.8 INTEGRATION TESTING

Software testing is always used in association with verification and validation. In the testing phase of this project our aim is to find the answer to following two questions.

- Whether the software matches with the specification (i.e. process base) to verify the product.
- Whether this software in one client what wants (i.e. product base) to validate the product.
- Unit testing and integration testing has been carried out to find the answer to above questions. In unit testing each individual module was test to find any unexpected behaviour if exists. Later all the module was integrated and flat file was generated.

## FUNCTIONAL TESTING

These are the points concerned during the stress test:

- Nominal input: character is in putted in the place of digits and the system has to flash the message "Data error"
- Boundary value analysis: exhaustive test cases have designed to create an output report that produces the maximum (and minimum) allowable number of table entries.





# SOFTWARE SYTEM attributes

em  
reliable and secured from unauthorized user may create threats to the system. So you should follow some security measures. We have used security levels in database level at system level.

## 6.2 SYSTEM SECURITY

If we talk about the system security in our proposed system we have implemented with the help of maintained session throughout the system's use. Once a user has logged out than he/she will not be able to perform any task before signing back again.

A high level of authentic login is given to the system, so this is a very tedious task to enter without authorization and authentication.

## 6.3 LIMITATIONS

- Since it is an online project, customers need internet connection to use it.
- The size of the database increases day-by-day, increasing the load on the database back up and data maintenance activity.
- Training for simple computer operations is necessary for the users working on the system.
- People who are not familiar with computers can't use this software.

## **7. CONCLUSION**

This project has been appreciated by all the users in the organization. It is easy to use, since it uses the GUI provided in the user dialog. User friendly screens are provided. The usage of software increases the efficiency, decreases the effort. It has been efficiently employed as a Site management mechanism. It has been thoroughly tested and implemented.

The software provides a reliable platform for keeping all sensitive information. For this kind of online business, the special software must be installed on the server which host the site, or on a secure server which receives all sensitive data.

## **8. FUTURE SCOPE AND FURTHER ENHANCEMENTS**

In future, we would like to keep working on this project and make new additions to provide users with more advanced features and more detailed information. The proposed system is Hospital Management System. We can enhance this system by including more facilities like pharmacy system for the stock details of medicines in the pharmacy.

■

## 9. REFERENCES

1. <https://www.w3schools.com>
2. <https://www.slideshare.com>
3. <https://www.scribd.com>
4. <https://www.tutorialspoint.com>
5. <https://www.youtube.com>

THANK YOU