

STROKE PREDICTION AND HOSPITAL MANAGEMENT

A project Report
Submitted in partial fulfilment of
The requirements for the award of the

BACHELOR DEGREE
In
Computer Application
From
University of Calicut



Submitted By

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Carried out at



Department of Computer Application

Safa College of Arts & Science

POOKKATTIRI

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Department of Computer Application
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Certificate

This is to certify that the project report entitled "Stroke Prediction And Hospital Management App" is a record of the work done by **SHAHALA.KP (SFATBCA005)** under our supervision and guidance. The report has been submitted in partial fulfillment of the requirement for award of the Bachelor Degree in Computer Application from the University of Calicut for the year 2022.

Submitted for the University Exam on

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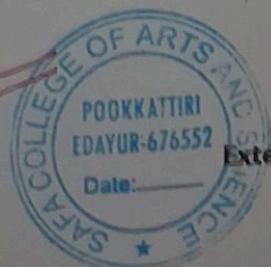
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Date: 23/04/2022

CERTIFICATE

This is to certify that Ms. SHAHALA K P (Reg. No: SFATBCA005) had successfully completed her academic project entitled "**STROKE PREDICTION AND HOSPITAL MANAGEMENT**" in PYTHON & ANDROID under the guidance of our senior developers during the period December 2021 to March 2022.

During this period she was found hardworking, punctual & efficient. We wish her a successful future.

For REGIONAL TECHNOLOGIES

Chief Executive Officer



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Declaration

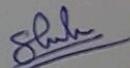
I hereby declare that the project report entitled "Stroke Prediction And Hospital Management" was carried out by me as the Bachelor Degree Project in Computer Application under the guidance and supervision of Mrs. Irfanath.V, Head of Department of Computer Application, Safa College of Arts & Science and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgement has been made in the text.

Date:

Signature:

Place:

SHAHALA.KP (SFATBCA005)



Acknowledgement

I am obediently thankful to God Almighty, praise and glory be to him, for all his uncountable bounties and guidance, without which, this work would have never been a reality.

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My sincere thanks to project co-ordinator **Mrs. Irfanath.V** Head of the department in Computer Application for guiding me and giving timely advices, suggestions and whole hearted moral support in the successful completion of this project.

Last but not least, I would like to thank all the teaching and non-teaching staff and my friends who have helped me in every possible way in the completion of my project.

Abstract

A stroke occurs when the blood supply to part of the brain is interrupted or reduced, preventing brain tissue from getting oxygen and nutrients. Brain cells begin to die in minutes. In our project, "Stroke prediction and Hospital Management" we mainly focus on how we can know about we occur stroke in future based on our current health conditions, like glucose level, Blood pressure etc, If a person suffers stroke in future the application give so many tips to prevent stroke and it help to us.

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INTRODUCTION

we have provide an application based on the hospital facilities for patients. The Patients can view the available list of doctors and their schedules, Doctors can update changes in their schedules, Patients can book their appointments for doctors. In this system, we solve this problem by proposing a new web-based system through that the doctor can manage his/her appointments from anywhere. In addition to this the patient who is unable to go to the clinic and take the appointment can also book his/her appointment from a mobile phone within 2-3 min. Our solution is to build a system that will help the needful people or every person who wants to save their precious time. And It contain an additional feature "Stroke Prediction". By using health details, a patient can check whether the meet stroke in future life or not in prediction. And can take remedies for that. It helps everyone to make a good healthy life and save life from stroke and other similar problems.

SYSTEM ANALYSIS

System study is done in order to understand the problem and emphasize what is needed from system. The information requirements of the user for their competitive world require such system. The various techniques used in this phase are Observations, Interviews and Discussions.

A complete understanding of software requirements is essential to the success of a software development effort. System Analysis refers to an orderly structured process for identifying and solving problems using computer. It is the most essential part of the project development. It is the process of the gathering and interpreting facts, diagnosing problems and using the information to recommended improvements to the system. Training, experience and common sense are required for the collection of the information needed to do the analysis.

Existing system

- ❖ In the existing system, a person decides to check stroke ,he must want to go a hospital and check his current health conditions by lab reports.
- ❖ It is more time consuming method for peoples. Everyone's must wait more time
- ❖ In the existing system, a person need to take an appointment for doctor he must go to hospital for booking and also for collecting his lab reports

Proposed System

- ❖ In the proposed system, we provide more addition futures in a user friendly application for stroke prediction and also provide online booking for doctors and lab centers and also the registered persons

can get their lab results via the application.

- ❖ It take very less time to operate. And every person can easy to use ad a person can check whether he occur stroke in future by a prediction method by giving his current health status based on the given symptom details in the application.
- ❖ If they suffers stroke it give more helpful tips for avoid stroke in future life.

MODULE DESCRIPTION

Main Modules of the system are:

Admin:

- Login
- Add and Manage doctors
- Add lab
- View feedback
- Add tips
- View user
- View booking details

Doctor:

- Login
- Add and Update schedule
- View booking details
- Request for test
- View result
- View profile

Lab:

- Login
- View Request
- View and send report

User:

- User Registration
- Login
- Doctor booking
- View result
- Send feedback
- View tips

Conceptual feasibility

This involves questions such as whether the technology needed for the system exists, how difficult it will be to build, and whether the firm has enough experience using that technology. This assessment is based on an outline design of system requirements in terms of Input, Output, Fields, Programs, and Procedure. This can be qualified in terms of volumes of data, trends, frequency of updating etc. in order to give an introduction to the technical system.

The system requires no real configuration computer system that is commonly available. This system is basically developed using python, for which the development kit is easily available and use of cost. Thus, proposed system is technically feasible.

1. Economic Feasibility

The economic analysis is done to determine the benefits and savings that can be derived from candidate system and compare them with costs. Thus, costing is a consideration that makes the system is economically feasible or not. Thus, system is cost effective as well as more effective, thereby making it economically feasible. This study presents tangible and intangible benefits of the proposed system by comparing the developments and operational costs.

FEASIBILITY STUDY

A feasibility study is a preliminary study undertaken to determine and document a project's viability. The results of this study are used to make a decision whether to proceed with the project. If it indeed leads to a project being approved, it will - before the real work of the proposed project starts - be used to ascertain the likelihood of the project's success. It is an analysis of possible alternative solutions to a problem and a recommendation on the best alternative. It, for example, can decide whether an order processing be carried out by a new system more efficiently than the previous one. The feasibility study proposes one or more conceptual solutions to the problem set for the project. The conceptual solution gives an idea of what the new system will look like. They define what will be done on the computer and what will remain manual. It also indicates what input will be needed by the system and what outputs will be produced. These solutions should be proven feasible and a preferred solution is accepted.

Technical feasibility

This involves questions such as whether the technology needed for the system exists, how difficult it will be to build, and whether the firm has enough experience using that technology. The assessment is based on an outline design of system requirements in terms of Input, Output, Fields, Programs, and Procedures. This can be qualified in terms of volumes of data, trends, frequency of updating etc. in order to give an introduction to the technical system.

The system requires normal configuration computer system that is commonly available. This system is basically developed using python, for which the development kit is easily available and free of cost. Thus, proposed system is technically feasible.

1. Economic Feasibility

The economic analysis is done to determine the benefits and savings that are expected from candidate system and compare them with costs. Thus, coming to a conclusion that weather the system is economically feasible or not. This system is cost effective as well as time effective, thereby making it economically feasible. This study presents tangible and intangible benefits from the project by comparing the developments and

The technique of cost benefit analysis is often used as a basis for assessing economic feasibility. This system needs some more initial investment than the existing system, but it can be justifiable that it will improve the quality of service.

2. Operational Feasibility

The system operation is the longest phase in the development life cycle of a system. So, operational feasibility should be given much importance. The users of the system don't need through training on the system. All they are expected to know to operate the system is the basic net surfing knowledge.

Operational feasibility is dependent on human resources available for the project and involves projecting whether the system will be used if it is developed and implemented. Operational feasibility is a measure of how well a proposed system solves the problems, and takes advantage of the opportunities identified and how it satisfies the requirements identified in the requirements analysis phase of system development. operational feasibility reviews the willingness of the organization to support the proposed system.

3. Behavioural Feasibility

This analysis involves how it will work when it is installed and the assessment of political and managerial environment in which it is implemented. People are inherently resistant to change and computers have been known to facilitate change. The new proposed system is very much useful to the users and there for it will accept broad audience.

4. Software Feasibility

Even though our application is developed in very high software environment, it is also supported by many other environments with minimum changes. The system is fully feasible to be executed on any kind of operating systems and browsers.

5. Hardware Feasibility

Software can be developed with the existing resources. But the existing resources may or may not be used to produce hardware. If no hardware is newly bought for project, then software is said to achieve hardware feasibility. The system is hardware wise feasible because it needs absolutely no new hardware.

SOFTWARE ENGINEERING PARADIGM

The software engineering paradigm which is also referred to as a software process model or Software Development Life Cycle (SDLC) model is the development strategy that encompasses the process, methods and tools. SDLC describes the period of time that starts with the software system being conceptualized.

1. Spiral model

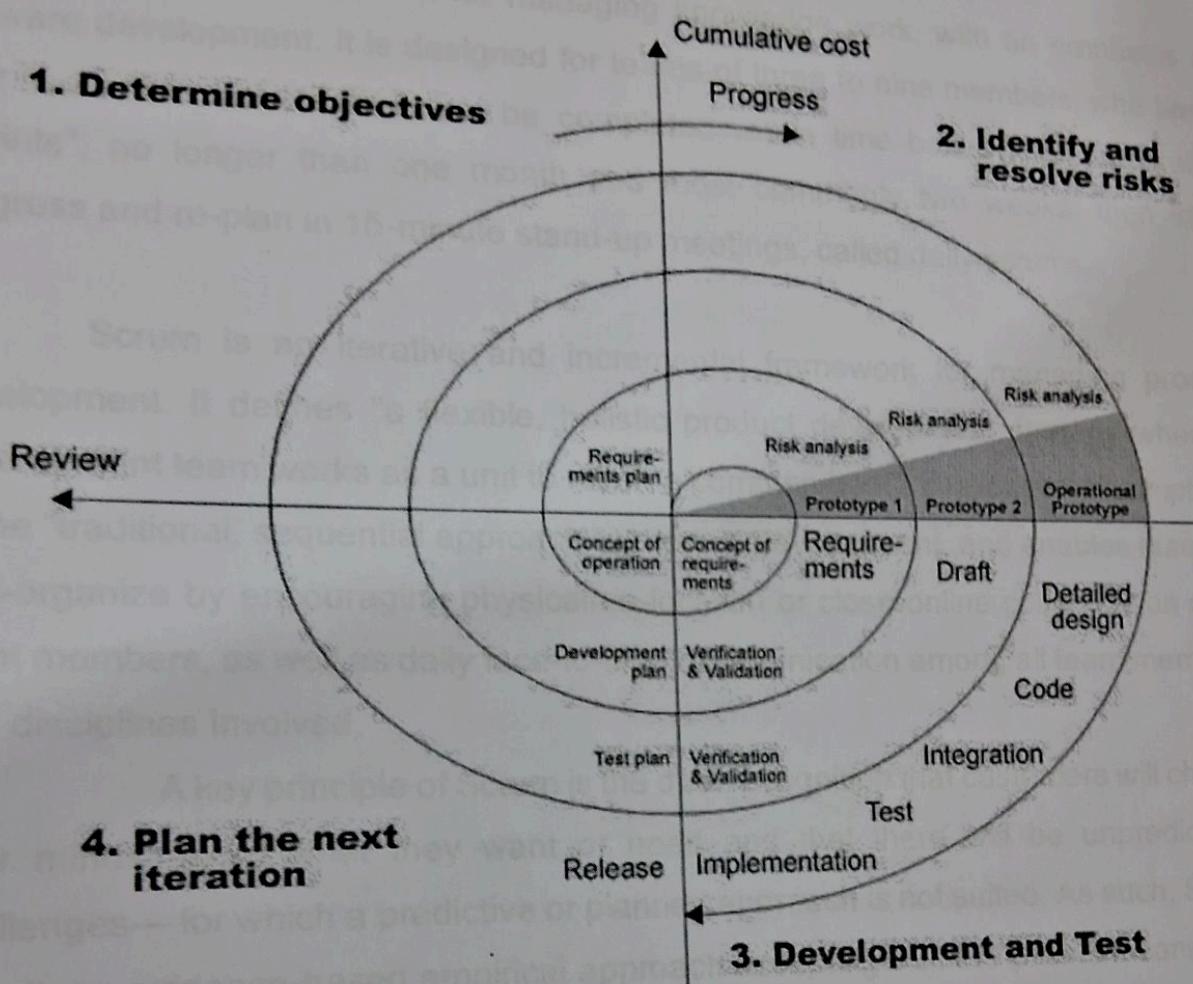
The spiral model is a systems development lifecycle (SDLC) method used for risk management that combines the iterative development process model with elements of the Waterfall model. The spiral model is used by software engineers and is favored for large, expensive and complicated projects.

Every iteration involves cross functional teams working simultaneously on various areas like:

- Planning
- Design
- Construct
- Evaluation and risk analysis

Based on the customer evaluation, the software development process enters the next iteration and subsequently follows the linear approach to implement the feedback suggested by the customer. The process of iterations along the spiral continues throughout the life of the software.

Graphical illustration of the spiral model:



Scrum

Scrum is an agile framework for managing knowledge work, with an emphasis on software development. It is designed for teams of three to nine members, who break their work into actions that can be completed within time boxed iterations, called "sprints", no longer than one month and most commonly two weeks, then track progress and re-plan in 15-minute stand-up meetings, called daily scrums.

Scrum is an iterative and incremental framework for managing product development. It defines "a flexible, holistic product development strategy where a development team works as a unit to reach a common goal", challenges assumptions of the "traditional, sequential approach to product development, and enables teams to self-organize by encouraging physical co-location or close online collaboration of all team members, as well as daily face-to-face communication among all team members and disciplines involved.

A key principle of Scrum is the dual recognition that customers will change their minds about what they want or need and that there will be unpredictable challenges—for which a predictive or planned approach is not suited. As such, Scrum adopts an evidence-based empirical approach accepting that the problem cannot be fully understood or defined up front, and instead focusing on how to maximize the team's ability to deliver quickly, to respond to emerging requirements, and to adapt to evolving technologies and changes in market conditions.

Many of the terms used in Scrum (e.g., scrum master) are typically written with leading capitals (e.g., Scrum Master) or as conjoint words written in camel case (e.g., Scrum Master). To maintain an encyclopedic tone, however, this article uses normal sentence case for these terms unless they are recognized marks (such as Certified Scrum Master). This is occasionally seen written in all-caps, as SCRUM. The word is not an acronym, so this is not correct; however, it likely arose due to an early paper by Ken Schwaber which capitalized SCRUM in its title.

SYSTEM REQUIREMENTS SPECIFICATION

System Specification

Hardware and software requirements for the installation and smooth functioning of this product could be configured based on the requirements needed by the component of the operating environment that works as front-end system here we suggest minimum configuration for the both hardware and software components. Working off with this software is requirements concrete on system environments. It includes two phases.

- Hardware Specification
- Software Specification

Hardware Requirements

The selection of hardware is very important in the existence and proper working of any of the software. When selecting hardware, the size and capacity requirements are also important. The hardware must suit all application developments.

- Processor : intel i3 or above.
- System Bus : 32Bit or 64Bit
- RAM : 4 GB or Above
- Storage : 500 GB or Above Hard Disk
- Monitor : 14" LCD or Above
- Key Board : 108 Keys
- Mouse : Any Type of mouse
- Mobile : Android Version 9
- Other : Accelerometer, Ultrasonic Sensor, Buzzer

Software Requirements

One of the most difficult tasks is selecting software, once the system requirement is found out then we have to determine whether a particular software package fits for those system requirements. This section summarizes the application requirement.

- Operating System : Windows 10 Any 32 bit or 64-bit platform
- Front End : PyCharm, Android Studio
- Back End : MySQL Server
- IDE : Eclipse or Android studio
- Frame work : Flask

SYSTEM DESIGN

System design is the first in the development phase for many engineered product or system. It may define the process of applying various techniques and principles for the purpose of defining a device, a process or system in sufficient detail to permit its physical realization. This phase is the first step in moving from the problem domain to the solution domain. It is an iterative process through which requirements are transmitted into —blue print for constructing the software initially. Blue print depicts holistic new software. Some properties for the system design are:

- Verifiability
- Completeness
- Efficiency
- Traceability

1. Input Design

The decisions made during the input design are:

- To provide cost effective method of input
- To achieve the highest possible level of accuracy

Input design is the process of converting user-designated inputs to a computerized format. The input data are collected and organized in to group of similar data.

2. Output Design

Output design generally refers to the results and information that are generated by the system. The results are of in interactive mode. A common user can also use the application. In output design the emphasis is given to the design of the hard copy and a soft copy of the information needed to the user.

3. Database Design

Database design is the process of producing a detailed data model of a database. This logical data model contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a data definition language, which can then be used to create a database. The term database design can be used to describe many different parts of the design of an overall database system. Principally, and most correctly, it can be thought of as the logical design of the base data structures used to store the data. In the relational model these are the tables and views. In an object database the entities and relationships map directly to object classes and named relationships. However, the term database design could also be used to apply to the overall process of designing, not just the base data structures, but also the forms and queries used as part of the overall database application within the database management system. The process of doing database design generally consists of a number of steps which will be carried out by the database designer. Usually, the designer must: Determine the relationships between the different data elements and superimpose a logical structure upon the data on the basis of these relationships.

Normalization

Normalization is the process of decomposing a set of relations with anomalies to produce smaller and well-structured relations that contain minimum redundancy. It is a formal process of deciding which attributes should be grouped together in a relation.

First Normal Form

First Normal form (1NF) is now considered to be part of the formal definition of relational model. 1NF is designed to disallow multivalve attribute, composite attributes, and their combinations. It states that the domain of an attribute must include only atomic values. A domain is atomic, if elements of the domain are considered to be indivisible units. We say that a relational schema R is in 1NF if the domain of all attributes of \underline{R} 'is atomic.

Second Normal Form

Second Normal form (2NF) is based on the concept of functional dependency. A relation R is in 2NF if it is in 1NF and every non key attribute A of R is fully dependent on the primary key. That is, relation is said to be in 2NF if each attribute A_n in R meets one of the following criteria:

- (a) It appears in the primary key.
- (b) It is fully functionally dependent on the primary key.

The tables designed in the proposed system, contain a primary key for uniquely identifying each user.

Third Normal Form

Third Normal form (3NF) is based on the concept of transitive dependency. A relation is said to be in 3NF if it is in 2NF and has no transitive dependencies. That is all the non key attribute should be functionally determined by the primary key. In the proposed system all attributes of tables are fully depends on the primary key only that is all non-key attributes are mutually independent.

TABLES

A data base is a collection of inter related data store with minimum redundancy to serve many users quickly and efficiently. The general objectives is to make information access easy, quick, inexpensive and flexible for the user. In a database environment, common data are available in which several users can use. The concept behind a database is an integrated collection of a data and provides a centralized access to the data from the program.

TABLE NAME: Book_Img

TABLE NAME: Tip

TABLE NAME: Feedback

TABLENAME: Doctor

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
fname	varchar	50		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
lname	varchar	50		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
place	varchar	50		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
gender	varchar	50		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
phone	varchar	50		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
email	varchar	50		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
specialisation	varchar	50		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
lid	int	11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TABLE NAME: Login

TABLE NAME: Book_ing

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
pid	int	11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
did	int	11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
shid	int	11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
date	date			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TABLE NAME: Tip

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
tip	varchar	45		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
description	varchar	45		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TABLE NAME: Feedback

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
pid	int	11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
feedback	varchar	45		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
date	date			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TABLE NAME: Lab

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment
lid	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
name	varchar	45								
description	varchar	45								
place	varchar	45								
phone	bigint	45								
email	varchar	45								

TABLE NAME: Login

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
username	varchar	100								
password	varchar	100								
type	varchar	100								

TABLE NAME: Patient

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment
lid	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
fname	varchar	100								
lname	varchar	100								
place	varchar	100								
gender	varchar	100								
phone	varchar	100								
email	varchar	100								
age	varchar	100								

TABLE NAME: Schedule

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
did	int	11								
day	varchar	45								
from	time									
tot	time									

Data flow diagram used

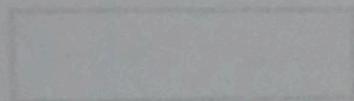
TABLE NAME: Test

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
bkid	int	11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
labid	int	11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
test	varchar	45		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
result	varchar	45		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

In the normal convention,

a Data flow diagram has four major symbols

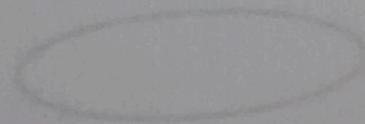
1. Square: This defines source or destination of data



2. Arrow: which shows data flow



3. Circle: which represent a process that transforms incoming data in to output data



4. Open rectangle: which shows data stores

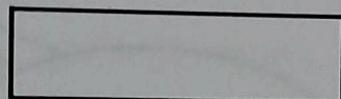


ARCHITECTURE DIAGRAMS/DFD

Data flow diagram issued to define the flow of the system audits resources such as information. Data flow diagrams represent one of the most ingenious tool soused for structured analysis. A Dataflow diagram or DFD as it is shortly called is also known as a bubble chart. It is the major starting point in the design phase that functionally decomposes the requirement specifications down to the lowest level of details. In the normal convention,

a Data flow diagram has four major symbols.

1. Square: This defines source or destination of data



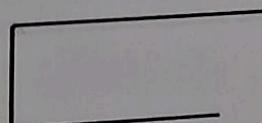
2. Arrow: which shows data flow



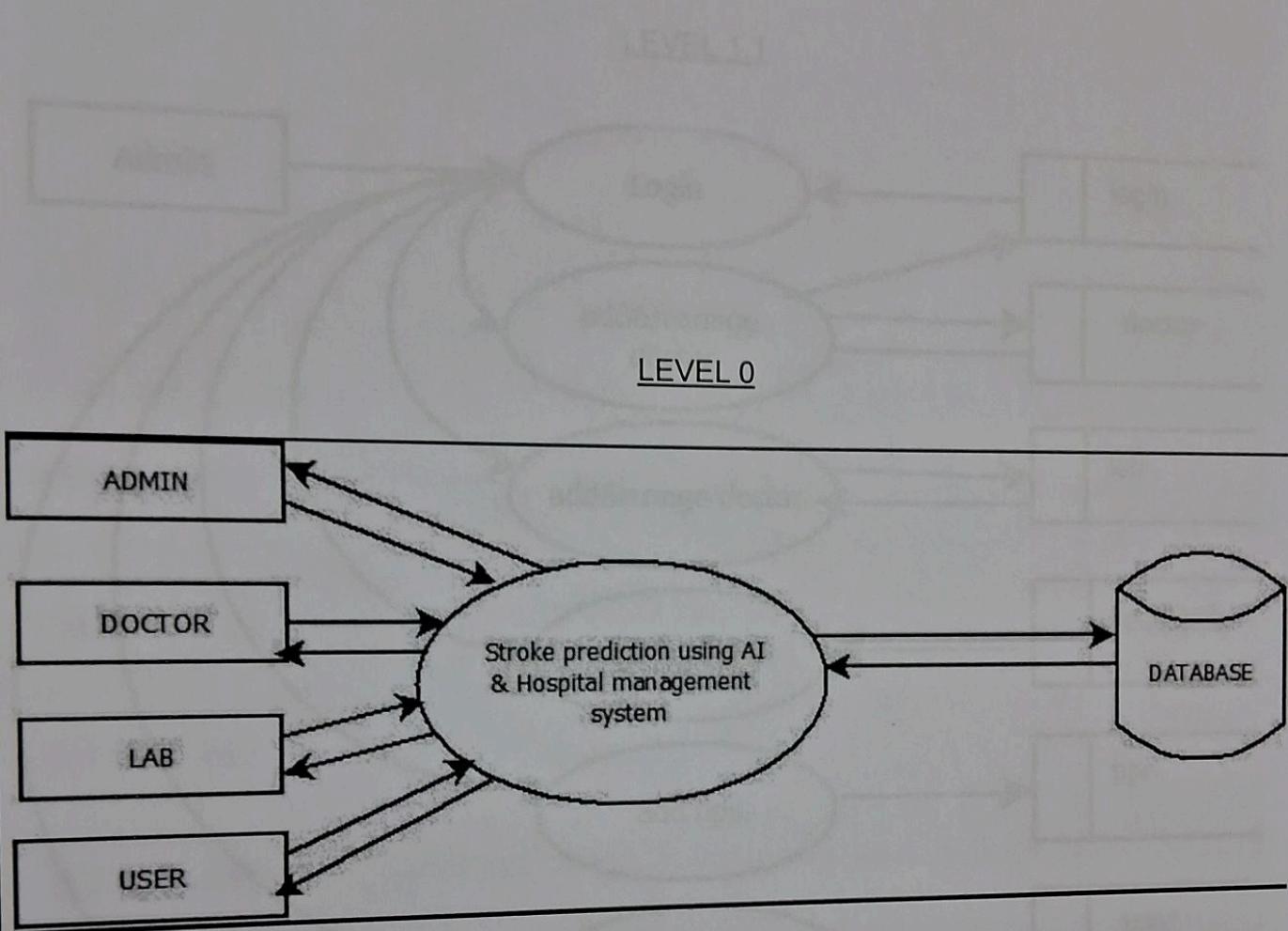
3. Circle: which represent a process that transforms incoming data in to outgoing flow

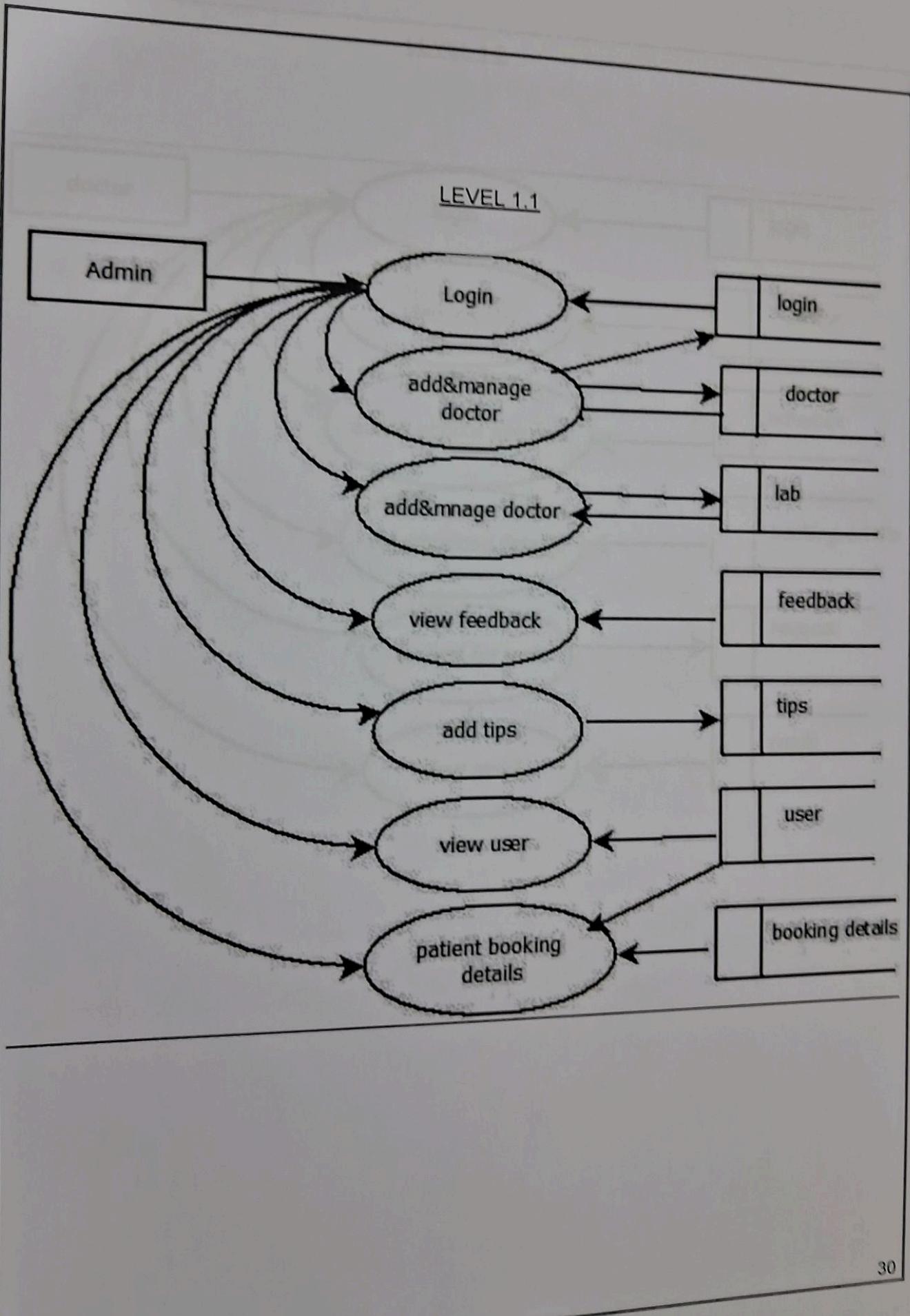


4. Open rectangle: which shows data store

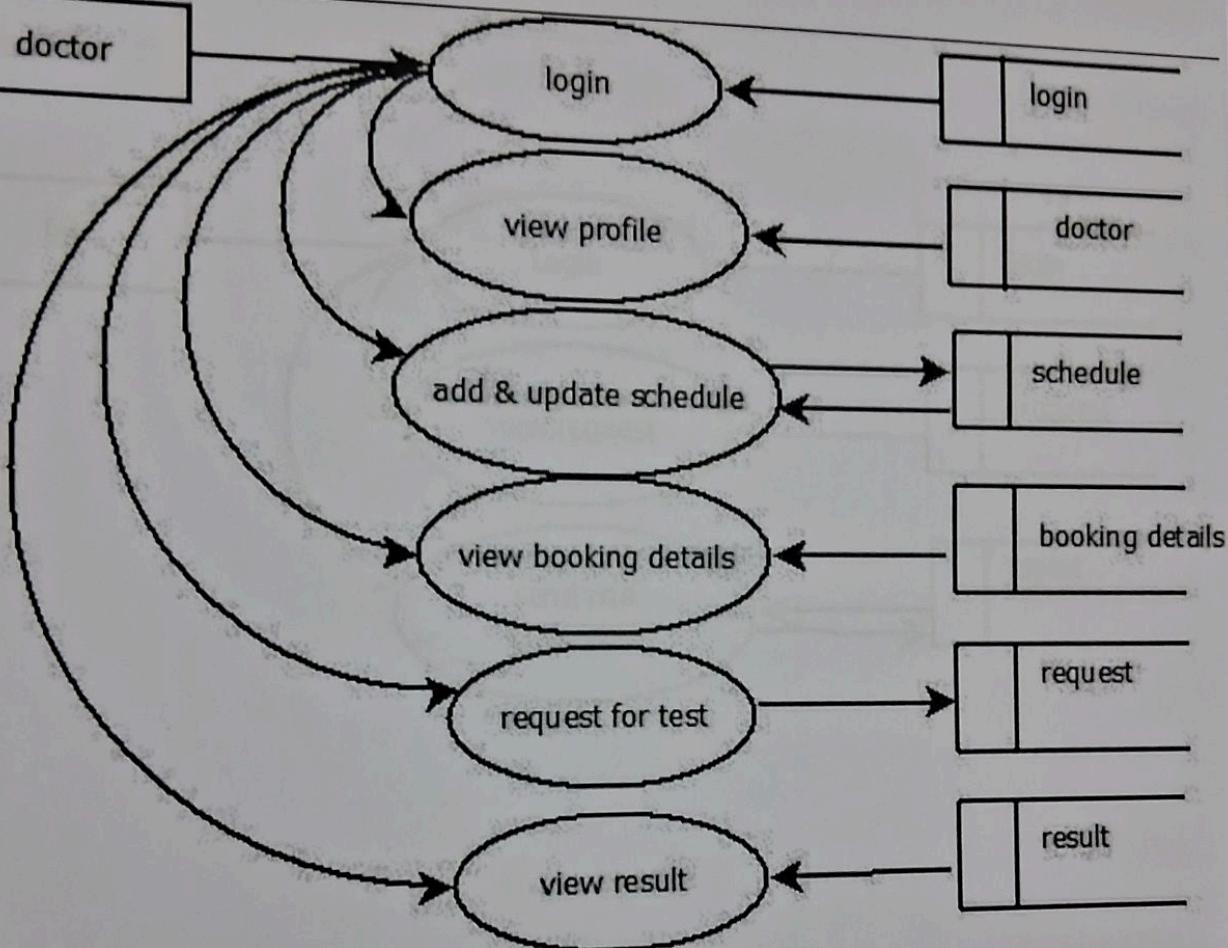


DATA FLOW DIAGRAM

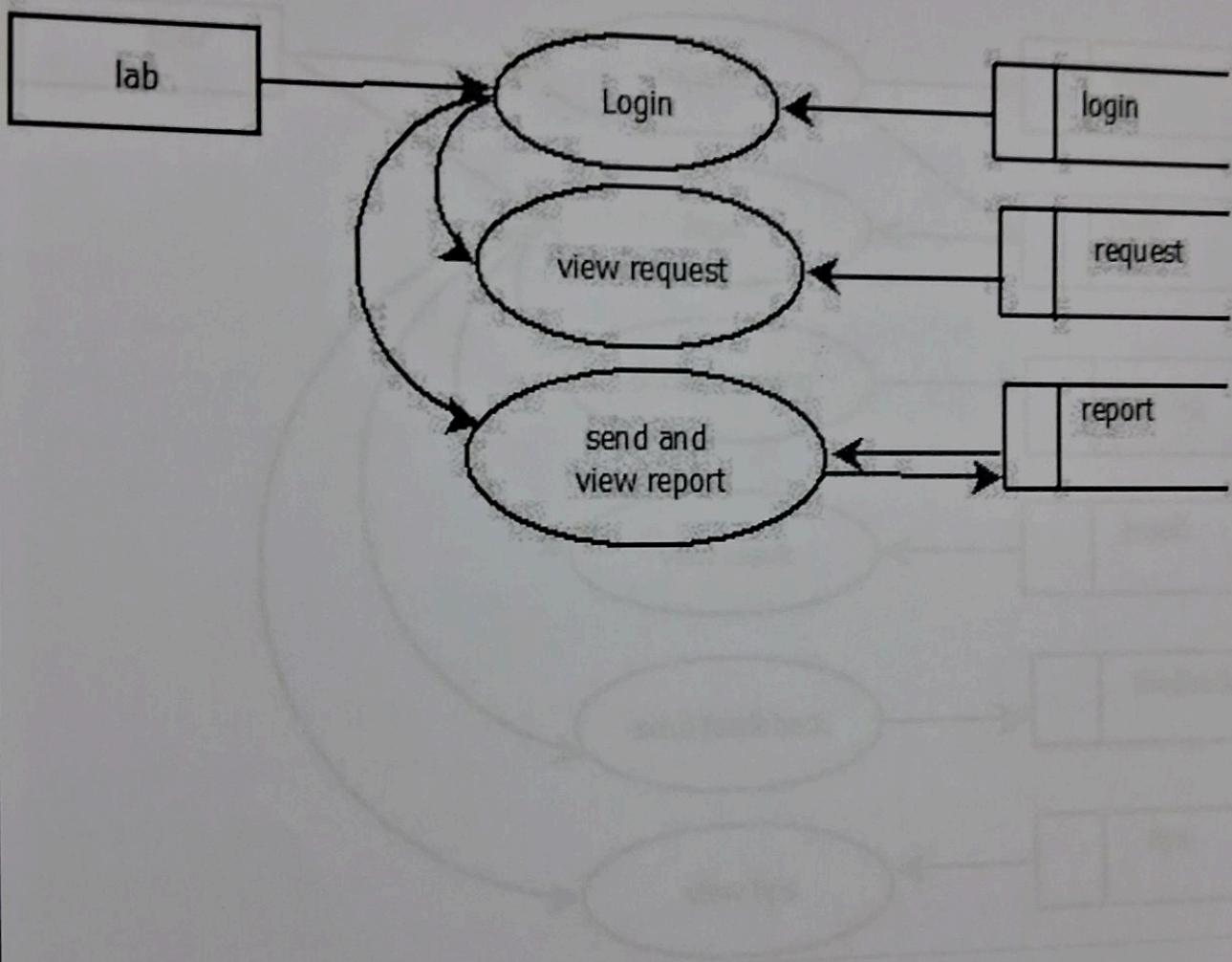




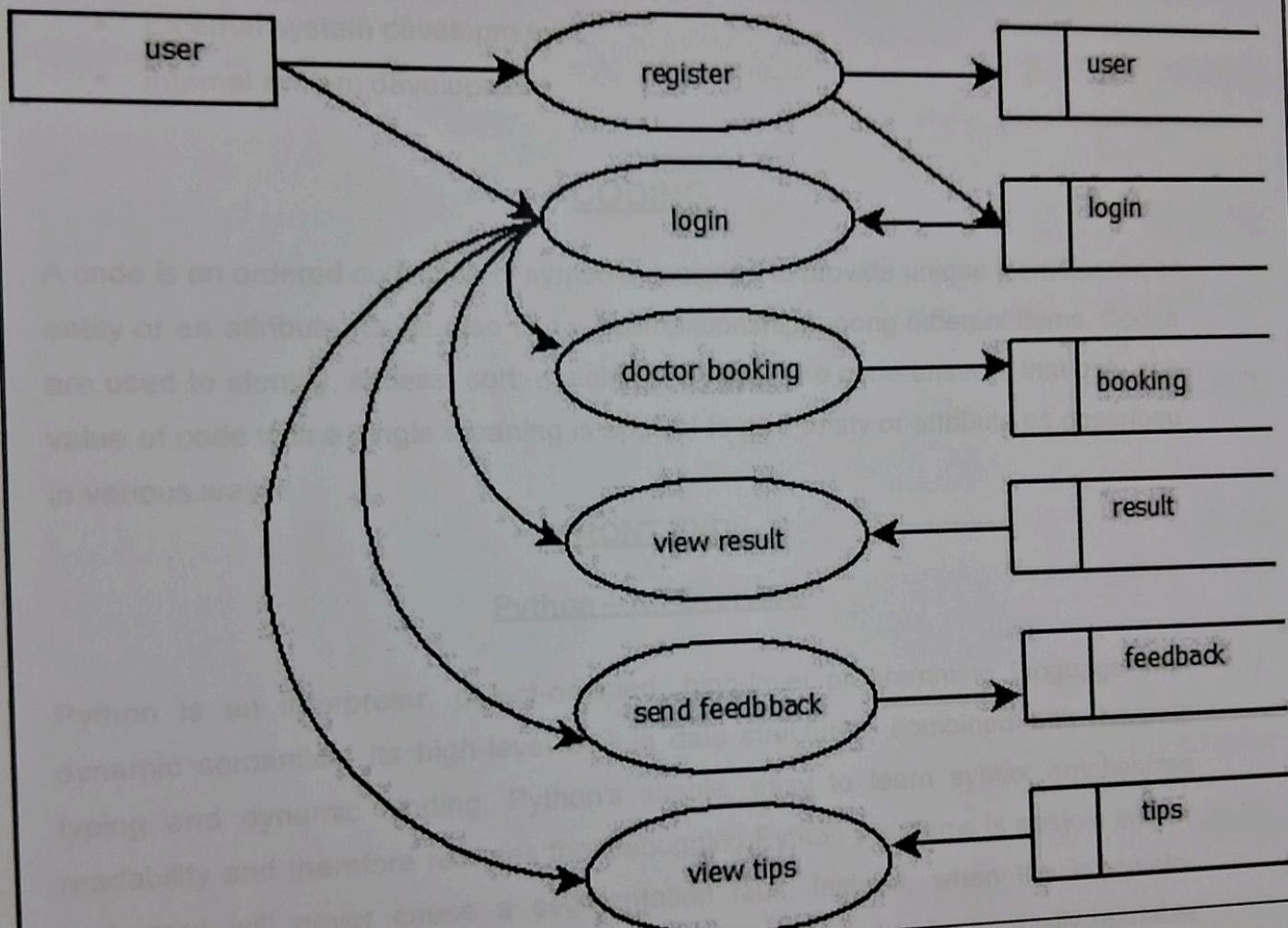
LEVEL 1.2



LEVEL 1.3



system development is a series of open **LEVEL 1.4** activities performed during the development phase can be divided into two major related sequences:



SYSTEM DEVELOPMENT

System development is series of operations to manipulate data to produce output from computer system. The Principles activities performed during the development phase can be divided into two major related sequences:

- External system development
- internal system development

CODING

A code is an ordered collection of symbols designed to provide unique identification of entity or an attribute. Code also show interrelationship among different items. Codes are used to identify, access, sort, matching records. The code ensures that only one value of code with a single meaning is applied to give entity or attribute as described in various ways.

FRONT END:

Python – An Overview

Python is an interpreter, object-oriented, high-level programming language with dynamic semantics. Its high-level built-in data structures, combined with dynamic typing and dynamic binding, Python's simple, easy to learn syntax emphasizes readability and therefore reduces the Debugging Python programs is easy: a bug or bad input will never cause a segmentation fault. Instead, when the interpreter discovers an error, it raises an exception. Python is meant to be an easily readable language

Android –An Overview

Android is a mobile operating system developed by Google, based on the Linux kernel and designed primarily for touchscreen mobile devices such as smartphones and tablets. Android's user interface is mainly based on direct manipulation, using touch gestures that loosely correspond to real-world actions, such as swiping, tapping and pinching, to manipulate on-screen objects, along with a virtual keyboard for text input.

In addition to touchscreen devices, Google has further developed Android TV for televisions, Android Auto for cars and Android Wear for wrist watches, each with a specialized user interface. Android is popular with technology companies that require a ready-made, low-cost and customizable operating system for high-tech devices.

BACK END:

MySQL Database

Microsoft SQL Server is a relational database management system developed by Microsoft. As a database server, it is a software product with the primary function of storing and retrieving data as requested by other software applications—which may run either on the same computer or on another computer across a network (including the Internet). Structured Query Language is a domain-specific language used in programming and designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS). The scope of SQL includes data insert, query, update and delete, schema creation and modification, and data access control.

SQL commands are grouped in to four major categories depending on their functionality.

• Data Definition Language (DDL)

These SQL commands are used for creating, modifying, and

Dropping the structure of data base objects. The commands are CREATE,

ALTER, DROP, RENAME and TRUNCATE.

• Data Manipulation Language (DML)

These SQL commands are used for storing, retrieving, modifying, and deleting data. These Data Manipulation Language commands are: SELECT, INSERT, DELETE AND UPDATE.

SYSTEM TESTING

Testing is an important step in the software engineering process that could view rather than constructive. Testing is the process of executing a program with the intent of finding an error. A good test is that has probability to find an as yet undiscovered error. Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding.

Testing Strategy:

- Careful planning
- Investigating the current system

Unit Testing

Unit testing focused verification efforts on the smallest unit of software design, the module. This is also known as —module testing. The modules are tested separately. This testing is carried out during programming stage itself. In this testing step each module is found to be working satisfactorily as regard to the expected output from the module.

Integration Testing

The integration testing is a systematic testing for constructing the programs structure, while at the same time conducting tests to uncover errors associated within the interface. The objective is to take unit tested modules and build a program structure. All the modules are combined and tested as a whole. Here correction is difficult because the vast expenses of the entire program complicate the isolation of causes.

System Testing

After performing the validation testing, the next step is output testing of the proposed system since no system could be useful if it doesn't produce the required data in the specific format. The output displayed or generated by the system under consideration is tested.

User Acceptance Testing

User acceptance testing of a system is the key factor for the success of any system. The system under consideration is tested for user acceptance by constantly keeping in touch with the prospective system users at the time of developing and making changes wherever required. This is done with regard to the following points

IMPLEMENTATION

Implementation is the stage of project, when theoretical design is turned in to a working system. The most crucial stage is achieving a successful system and confidence that the new system will work effectively. Implementation means converting a new or revised system design into an operational one.

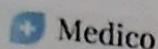
There are several activities involved while implementing a project:

- Careful planning.
- Investigating the current system and its constraints on implementation.
- Design of methods to achieve the changeover.
- Training of the staff in the changeover procedure and evaluation of change over

Method Implementation is the final stage and it is an important phase. The first task in implementation planning, that is deciding on methods to be adopted. After the system was implemented successfully, training of the user was one of the most important subtasks of the developer.

Best Care
Better Doctor

LOGIN PAGE



Medico

Home

We Are Here For Your Care

Best Care & Better Doctor

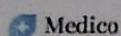
username

password

[login](#)



ADMIN HOME



Home Doctor Lab Patients Tips More ▾

We Are Here For Your Care

Best Care & Better Doctor

Lorem ipsum dolor sit amet, consectetur adipiscing elit sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Quis ipsum suspendisse ultrices gravida. Risus commodo viverra.

[MAKE AN APPOINTMENT](#)



DOCTOR

A screenshot of a web application titled "Medico". The main heading is "Our Doctors". Below it is a table listing two doctors:

Name	Place	Gender	Phone	Email	Specialisation	Action
Manoj Nar	calicut	male	9872940553	rrmopattayil@gmail.com	eye	Edit Delete
Safa Fabin	Tirur	female	9845113247	safa@gmail.com	Gynaecology	Edit Delete

[ADD](#)

LAB

A screenshot of a web application titled "Medico". The main heading is "Our Lab". Below it is a table listing two labs:

Lab	Description	Place	Phone	Email	Action
malabar	diabetic center	calicut	9872940550	agopalakshmi@gmail.com	Edit Delete
your care	all test	calicut	8987670767	yoc@gmail.com	Edit Delete

[ADD](#)

VIEW USER

The screenshot shows a web browser window with three tabs open, all titled "medical". The active tab displays a table of user data under the heading "View User". The table has columns for Name, Place, Gender, Age, Phone, and Email. The data is as follows:

Name	Place	Gender	Age	Phone	Email
anu jose	Kakkiodi	female	24	9447708774	anju123@gmail.com
abhishek k	Kozhikkode	male	24	9423168572	hhh@gmail.com
vishnu das	pmma	male	22	8946523147	vishnudas1@gmail.com
Shalaka Sherin	palakkad	female	20	8943023269	shalakasherin1417@gmail.com
ametha k	trissure	female	23	9946888233	ametha123@gmail.com

TIPS

The screenshot shows a web browser window with three tabs open, all titled "medical". The active tab displays a table of health tips under the heading "Our Tips". The table has columns for Tip and Description. The data is as follows:

Tips	Description	Action
stroke	Eat healthy diet	delete
stroke	Lower your blood pressure	delete
stroke	Manage your heart from tensions	delete
exercise	control your Diabetes	delete
walk	your cholesterol	delete

FEEDBACK

A screenshot of a web browser displaying the "Patients Feedback" section of a medical application. The page features a header with the Medico logo and navigation links for Home, Doctor, Lab, Patients, Tips, and More. Below the header is a large image of a stethoscope. The main content area is titled "Patients Feedback" and contains a table with three columns: Name, Feedback, and Date. The data in the table is as follows:

Name	Feedback	Date
[redacted]	iam satisfied	2020-03-26
abhishek k.	verygood treatments	2022-02-17
vishnu das	good treatments	2022-04-20
Shahzad hameed	Iam satisfied with your care	2022-04-22

SCHEDULE

DOCTOR HOME

A screenshot of a web browser displaying the "Doctor Home" section of the Medico application. The page includes a header with the Medico logo and navigation links for Home, Profile, SCD 10.12, Bookings, Test Request, Result, and Logout. The main content area features a large illustration of a female doctor standing next to a patient lying in a hospital bed. The text "We Are Here For Your Care" and "Best Care & Better Doctor" is displayed above the illustration. A small paragraph of placeholder text (Lorem ipsum dolor sit amet, consectetur adipiscing elit sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Duis gravida suspendisse ut tristique gravida. Risus cimoto viverra.) is present. At the bottom left is a blue button labeled "MAKE AN APPOINTMENT". The bottom right corner of the page has the number "41".

DOCTOR PROFILE

The screenshot shows the 'My Profile' section of the Medico application. The background features a medical-themed illustration of a stethoscope and a syringe. The profile information is displayed in a form:

Fname	Manoj
Lname	Nair
place	calicut
Gender	male
Phone	907940555
Specialisation	eye
Email	ninjusattayil@gmail.com

[update](#)

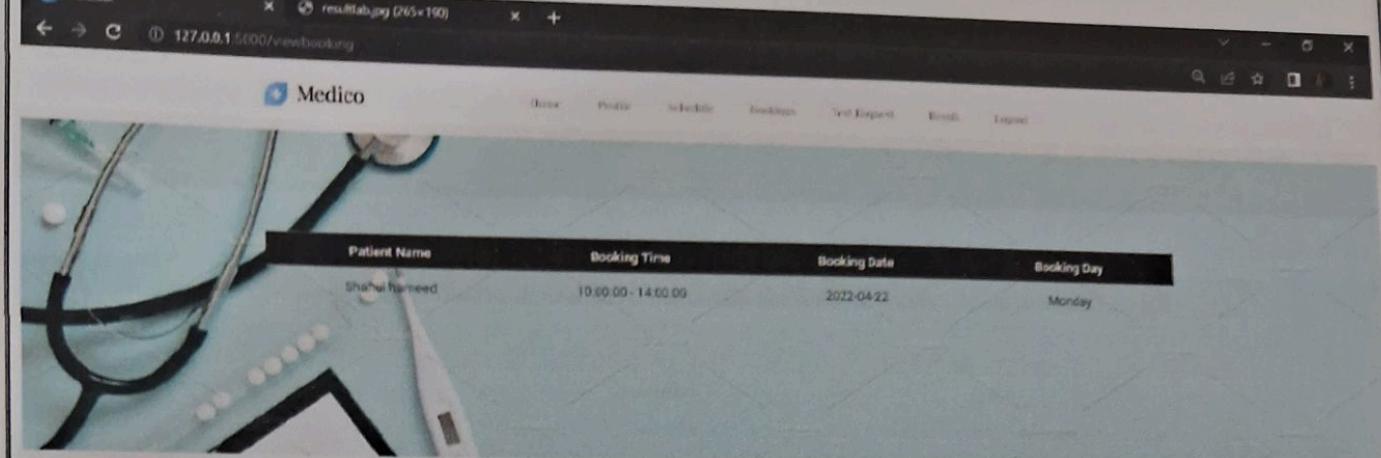
SCHEDULE

The screenshot shows the 'Our Schedule' section of the Medico application. The background features a medical-themed illustration of a stethoscope and a syringe. The schedule table includes columns for Day, Time, and actions (delete, edit). The data is as follows:

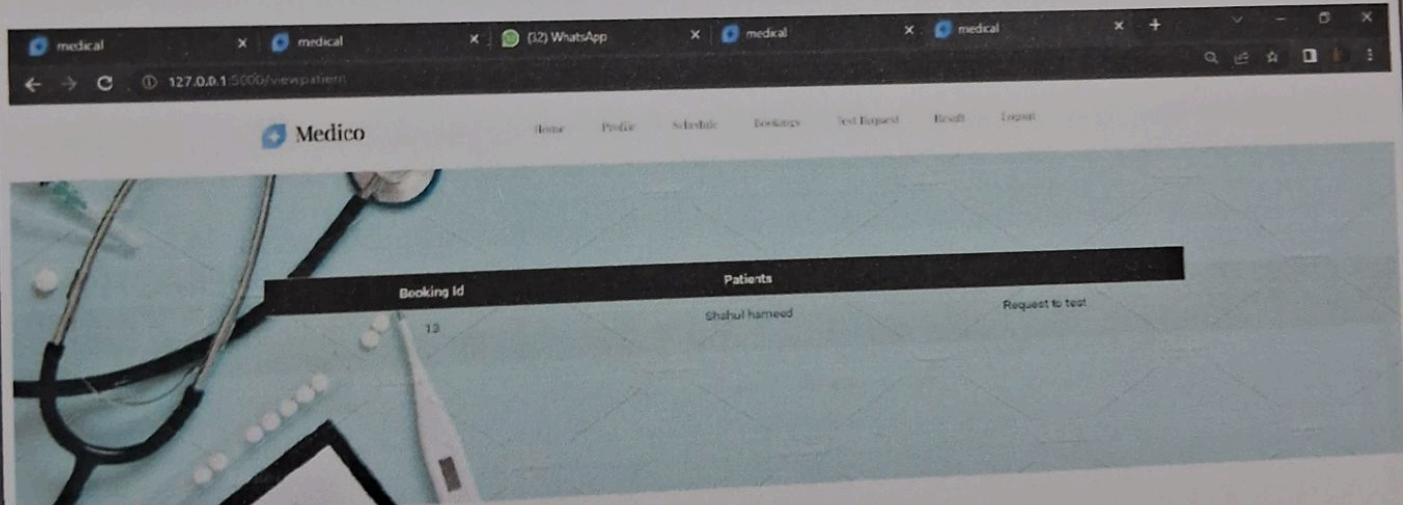
Day	Time	Action
Monday	From 10:00 AM To 02:00 PM	delete edit
Tuesday	From 11:00 AM To 01:00 PM	delete edit

[Add](#)

BOOKING



TEST REQUEST



RESULT



Booking id	Patients	Result
1	am Jose	Lighthouse.jpg
2	J P J	featured-image-64.jpg
3	abhishek	c.png
4	vishnu das	Premium_Photo__Medical_equipment_1.jpg
5	vishnu das	Premium_Photo__Medical_equipment.jpg
6	vishnu das	Premium_Photo__Medical_equipment.jpg
7	Shahul hameed	Free_Photo__Flat_lay_desk_with_laptop_and_g
8	Shahul hameed	Primavera_Prevencion_De_Efemenedades_Efemed
9	Shahul hameed	resultlab.jpg
10	Shahul hameed	images_2.jpg
11	Shahul hameed	Image_1.jpg
12	Muhammed Midraj	images_2.jpg

LAB HOME



We Are Here For Your Care

Best Care & Better Doctor

Lorum ipsum dolor sit amet, consectetur adipiscing elit sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Quis ipsum suspendisse ultrices gravida Risus orci odio viverra.

[MAKE AN APPOINTMENT](#)

TEST REQUEST

A screenshot of a web browser window titled "medical" showing the "Test Request" page of the Medico application. The URL is 127.0.0.1:5000/viewrequest. The page features a header with the Medico logo and navigation links for Home, Test Request, Result Upload, and Logout. Below the header is a decorative background image of medical equipment. A table displays a single row of test information:

Booking id	Patients	Test Description	Result
	Shahul Nameed	bp	upload result

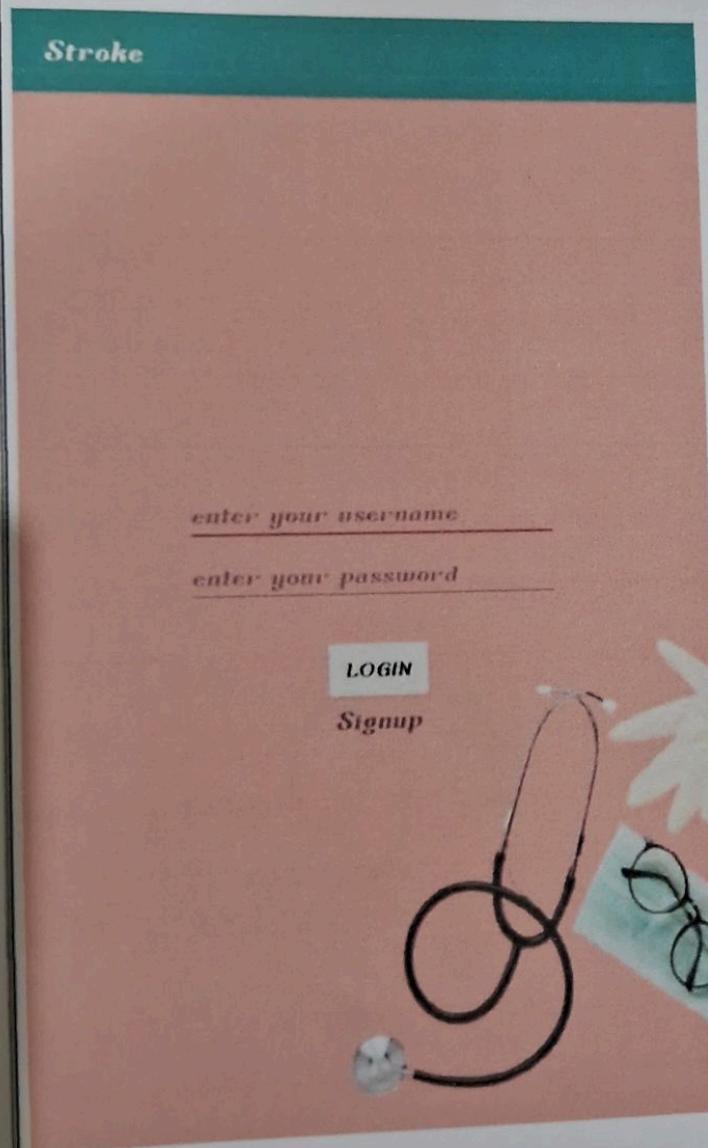
RESULT UPLOAD

A screenshot of a web browser window titled "medical" showing the "Result Upload" page of the Medico application. The URL is 127.0.0.1:5000/viewresult. The page features a header with the Medico logo and navigation links for Home, Test Request, Result Upload, and Logout. Below the header is a decorative background image of medical equipment. A table displays multiple rows of uploaded results:

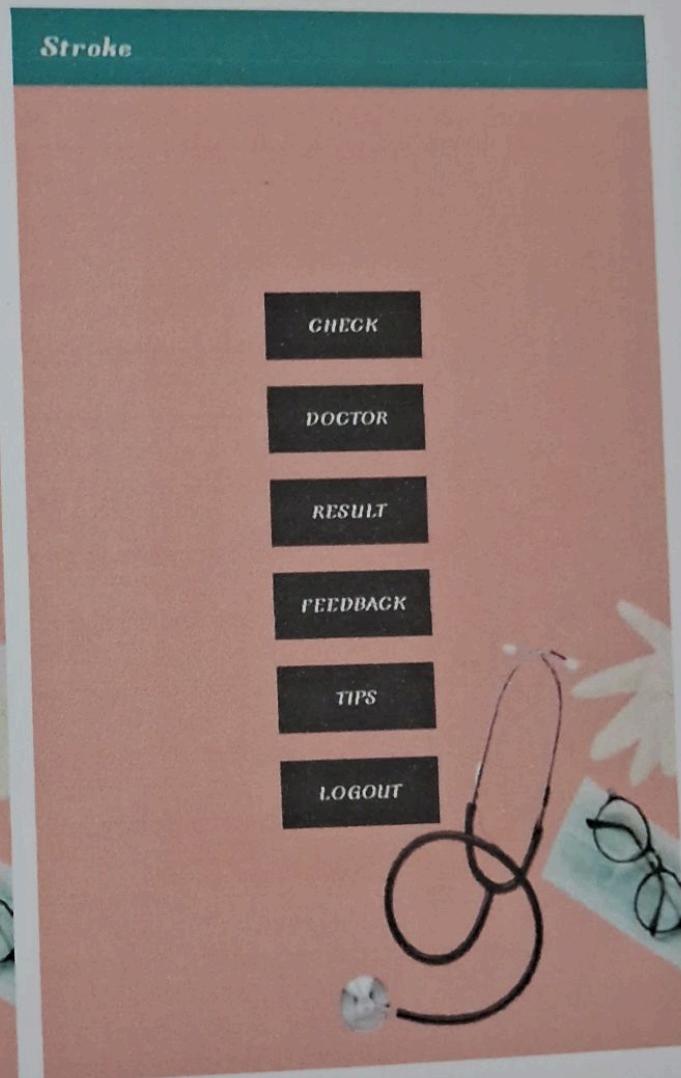
Booking id	patients	Test	Result
1	anu joshi	blood test	Lighthouse.jpg
2	RJ J	x-ray	featured-image-04.jpg
3	vishnu das	blood pressure	Premium_Photo_Medical_equipment.jpg
4	Shahul Nameed	thyroid	Primaria_Prevencion_De_Efemeridades_Efemend
5	Shahul Nameed	bp	resultab.jpg

ANDROID OUTPUTS

LOGIN PAGE



USER HOME



CHECKING PAGE

Stroke

Name Shahala

Gender Male

Female

other

Age 20

Hypertension No

Heart Disease No

Ever Married yes

Work Type children

Residence Type Rural

Avg Glucose Level 210

BMI 180

Smoking Status Never smoked

CHECK

RESULT PAGE

Stroke

blood test Lighthouse.jpg



FEEDBACK

Stroke

enter your feedback

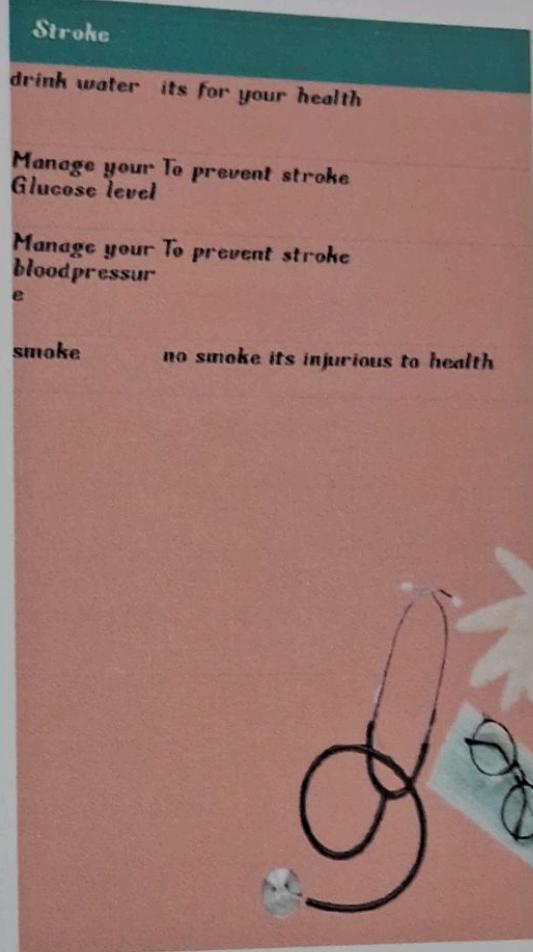
Feedback Date

I am Satisfied 2022-04-19
with your treatment

SEND



TIPS



DOCTOR



It is possible to more effectively increase the chance of getting help by publication by using one of the many online forums. And it is also possible to do that through social media online or through forums. And the same goes for the help through the app store.

CONCLUSION

Stroke prediction using an Android application is more effective for everyone. Because anybody can check the chance of occurring stroke by a prediction method present in the application by giving their lab reporting. Today all our systems are come to online. According to that everyone can like online mode techniques . So that by the hospital management system in our project provide online doctor booking facilities, lab facilities etc. for the peoples . And the administrator in a Hospital can easy do the control of the hospital through the application.

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- [2] <https://www.geeksforgeeks.org/>
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- [4] <https://github.com/>

Books

- [1] Software Engineering, R S Agarwal second edition
- [2] Agile development: The Cooperative Game, Addison Wesley
- [3] Agile Software Development with Scrum, Pearson
- [4] Beginning Software Engineering, Rod Stephens fifth edition
- [5] Core Python Applications Programming, Wesley J.Chun, 3rd EDITIO

