
AR Learn

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

BACHELOR DEGREE
In
Computer Application
From
University of Calicut



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Carried out at



Department of Computer Application

Safa College of Arts & Science
POOKKATTIRI
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POOKKATTIRI



This is to certify that the project report entitled “AR Learn” is a record of the work done by SHAHALA KP (SFAWBCA001), KEERTHANA T(SFAWBCA036), NANDANA M P (SFAWBCA037), YASINA KK(SFAWBCA038) under our supervision and guidance. The report has been submitted in partial fulfillment of the requirement for the award of the Bachelor Degree in Computer Application from the University of Calicut for the year 2025.

Submitted for the University Exam on:

Head of the department:

Mrs. Asia. P

Project coordinator:

Mrs. Asia. P

Submitted to the project and viva-voce examination held on -----/-----/-----



(AN ISO 9001 : 2008 CERTIFIED COMPANY)

Date: 11/03/2025

CERTIFICATE

This is to certify that **NANDANA M P (Reg. No: SFAWBCA037)** student of **SAFA COLLEGE OF ARTS AND SCIENCE** has successfully completed her academic project entitled **“AR LEARNING SYSTEM”** in **PYTHON with FLUTTER** under the guidance of our senior developers during the period **JUNE 2024 to FEBRUARY 2025**.

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

For RISS TECHNOLOGIES

A handwritten signature in green ink, appearing to read "Lennert".

Project Manager



Declaration

I hereby declare that the project report entitled “AR Learn” was carried out by me as the Bachelor Degree Project in Computer Application under the guidance and supervision of Mrs. ASIA.P 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

NANDANA MP SFAWBCA037

Acknowledgement

The success of the project depends upon the effort invested. At this pleasurable moment of having successfully completed our project. It's our duty to acknowledge and thank the individuals who have contributed to the successful completion of the project.

I wish to express our heartfelt gratitude to Mrs. ASIA P, SAFA COLLEGE OF ARTS AND SCIENCE for her encouragement and inspiring guidance throughout the preparation of the project.

I also thankful to our department faculties for their continuous motivation for the successful completion of our project.

I wish to express our love and respect to our parents, for their support, contribution and encouragement which helped us a lot to complete the project successfully.

I am very thankful to our friends for their support and contribution to complete this project successfully.

Abstract

The field of medicine demands comprehensive, hands-on learning and an in-depth understanding of complex human anatomy, physiology, and pathology. Traditional methods, while effective, have limitations in providing students with real-time, immersive, and interactive learning experiences. Augmented Reality (AR) has the potential to revolutionize medical education by offering immersive, interactive, and intuitive learning tools for medical students.

This proposed AR-based platform aims to enhance medical education by providing students with real-time, 3D visualizations of the human body, medical procedures, and diagnostic processes. Through AR technology, students can view and interact with life-like, holographic representations of anatomical structures, allowing them to gain a deeper understanding of complex systems in a manner not possible with textbooks or traditional learning media.

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INTRODUCTION

Augmented Reality (AR) in education represents a groundbreaking shift in how teaching and learning are conducted. By blending real-world environments with digital content, AR offers students immersive, interactive, and engaging learning experiences. This project focuses on leveraging AR technologies to enhance educational outcomes, aiming to improve student engagement, comprehension, and retention across various subjects. The project will create AR-based educational modules, conduct a comparative study between traditional and AR-based learning, and develop virtual field trip experiences for students.

The primary objective is to evaluate the effectiveness of AR in promoting active learning and to establish best practices for its integration into diverse educational contexts.

For this purpose, we are introducing “AR LEARNING SYSTEM” our project. This project is a connected system between admin, teachers, students. These mentioned users shall have advantages using our application. We used basic and understanding language for application because we are fully aware that our users may technology illiterate. With our survey we understood that now days everyone is capable of understanding little but technology also everyone wants to know about technology.

SYSTEM ANALYSIS

System study is done in order to understand the problem and emphasize what is needed from the 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 a computer. It is the most essential part of the project development. It is the process of gathering and interpreting facts, diagnosing problems and using the information to recommend 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 current educational landscape, traditional teaching methods are predominantly in today's education, traditional teaching mostly uses textbooks, lectures, and 2D visuals like charts, images, and videos. While these methods work to some degree, they often lack the engagement and interactivity needed for deeper learning. Key problems include limited student involvement and difficulty in understanding complex ideas.

DRAWBACKS OF THE EXISTING SYSTEM

Students often receive information passively, which limits their ability to fully grasp and retain complex concepts. Conventional teaching materials like textbooks and slides provide limited interactive content, making it difficult to engage students effectively. Subject like medical science often involve abstract concepts that are hard to visualize through traditional methods, which can lead to confusion and lack of comprehension. Traditional educational materials do not offer personalized learning experiences. Students with different learning speeds or preferences often find it hard to keep up or get bored.

PROPOSED SYSTEM

The proposed system incorporates Augmented Reality (AR) into the educational framework, offering an immersive, interactive, and visually rich learning experience. This system is designed to enhance the engagement, comprehension, and retention of knowledge by allowing students to actively participate in learning processes through digital interaction with real-world.

Objects and environments.

EXTRA FEATURES: -

- Immersive Learning: AR allows students to experience subjects in a more tangible way, making abstract concepts easy to understand. For example, students can explore 3D models of human anatomy, historical artifacts, or planetary systems in real-time.
- Interactivity: Students will actively engage with 3D models, animations, and quizzes in AR, providing a hands-on learning experience. This interactivity encourages critical thinking and problem-solving skills.
- Personalized Learning: The AR system can adapt content based on individual student needs, offering customized quizzes, interactive lessons, and real-time feedback to ensure comprehension at a pace suitable for each learner.
- Enhanced Engagement: The visual appeal of AR, along with gamified content like quizzes and interactive exercises, significantly increases student engagement, making learning enjoyable and motivating students to explore further.
- AR-Based Field Trips: Virtual field trips allow students to explore locations like the Great Wall of China or deep-sea ecosystems from the classroom. These trips remove the geographical and logistical constraints of traditional field trips, offering students access to a world of learning without leaving their seats.

MODULE DESCRIPTION

Main Modules: -

- ADMIN
- TEACHER
- STUDENT

ADMIN:

- Login
- Manage students
- Manage teachers
- Manage subject
- View complaints send reply
- Change password
- View app review
- AR object view

TEACHER

- Login

- View profile
- View students
- View Subjects
- Sent Complaints and view reply
- change password
- Sent app review
- AR object view

STUDENT

- Login
- View Profile
- View Subjects
- AR object view
- Sent Complaints and view reply
- Change Password

FUNCTIONS OF DESKTOP APPLICATION

- Add expert and manage them, Add important news for reference of students by admin.
- The college can manage their page like, handling the booked seats, give latest updates to the students through adding news, manage the course fee infrastructures, display the facilities to the users chat with the users for clearing their doubts or to solve their problems that they are facing in their admission process. The expert section, that expert can handle the test questions for the users and clear the doubt through giving replays to them.

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.

1.Techical Feasibility

proposed system is technically feasible. Because This system is basically developed using python and android, for which the development kit is easily available and free of cost. 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.

2.Economic Feasibility

This project is economically feasible. Because there is no need for any external equipment to run or work the project. This system is cost effective as well as time effective, thereby making it economically feasible.

3.Operational Feasibility

The project is operationally feasible because, Operational feasibility is a measure of how well a proposed system solves the problems. This reviews the willingness of the organization to support the proposed system.

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 that starts with the software system being conceptualized.

AGILE MODEL

The Agile methodology is a project management approach that involves breaking the project into phases and emphasizing continuous collaboration and improvement. Teams follow a cycle of planning, executing, and evaluating.



ADVANTAGES

1. Software is produced early in the software life cycle.
2. Risk handling is one of important advantages of the agile model, it is best Development model to follow due to the risk analysis and risk handling at the whole phase.

3. It is good for large and complex projects.
4. Strong approval and documentation control.
5. Break down the project into multiple, manageable units

In this project we used agile model for mainly handling the risks when the project is done. Due to this model, we can complete every single unit fully. This is a simple and advanced model in software development. It is very effective in the case of large and complicated projects.

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 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

- Processor : AMD Ryzen 5 5600H with Radeon.
- System Bus : 32Bit or 64Bit
- RAM : 8 GB or Above
- Storage : 20 GB or Above Hard Disk
- Monitor : 14" LCD or Above
- Keyboard : 108 Keys
- Mouse : Any Type of mouse

Software Requirements

- Operating System : Windows 10 Any 32 bit or 64-bit platform
- IDE : PyCharm, android studio
- Framework : Django, Flutter
- Database : MySQL Server
- Languages : Dart , Python

SYSTEM DESIGN

System design is the first in the development phase for many engineered products 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. Blueprint 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 groups 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 for 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 multivalued 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 R ‘is atomic’.

Second Normal Form

The 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 An 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 attributes 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 database is a collection of interrelated data stores with minimum redundancy to serve many users quickly and efficiently. The general objectives are to make information access easy, quick, inexpensive and flexible for the user. In a database environment, common data is available in which several users can use. The concept behind a database is an integrated collection of data and provides a centralized access to the data from the program. The following tables are used in this project.

Login table

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment	Virtuality	Expression	Check Constraint
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
username	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
password	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
type	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
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Teacher

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id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
name	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
email	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
contact	bigint	20		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
gender	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
photo	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
Qualification	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
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Student

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment	Virtuality	Expression	Check Constraint
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name	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
email	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
contact	bigint	20		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
gender	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
photo	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
sem	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
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course

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment	Virtuality	Expression	Check Constraint
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DEPARTMENT_id	int	11		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
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Department

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department	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
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Subject

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name	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
semester	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
COURSE_id	int	11		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Subject allocation

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SUBJECT_id	int	11		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
TEACHER_id	int	11		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Study materials

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment	Virtuality	Expression	Check Constraint
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material	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
date	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
SUBALLO_id	int	11		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
title	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)		
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Google Meet

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment	Virtuality	Expression	Check Constraint
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
link	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
fromtime	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
totime	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
date	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
SUBALLO_id	int	11		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="button" value="▼"/>		

Complaint

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment	Virtuality	Expression	Check Constraint
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
complaint	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
date	date			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
status	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
reply	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
STUDENT_id	int	11		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="button" value="▼"/>		

Staff Complaint

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment	Virtuality	Expression	Check Constraint
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
complaint	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
date	date			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
status	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
reply	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
TEACHER_id	int	11		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="button" value="▼"/>		

App review

Column Name	Data Type	Length	Default	PK?	Not Null?	Unsigned?	Auto Incr?	Zerofill?	On Update	Comment	Virtuality	Expression	Check Constraint
id	int	11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
review	varchar	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
date	date			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
LOGIN_id	int	11		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		(none)	<input type="button" value="▼"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="button" value="▼"/>		

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 tools used 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



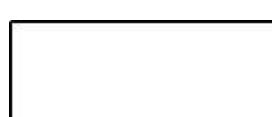
2. Arrow: which shows data flow



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

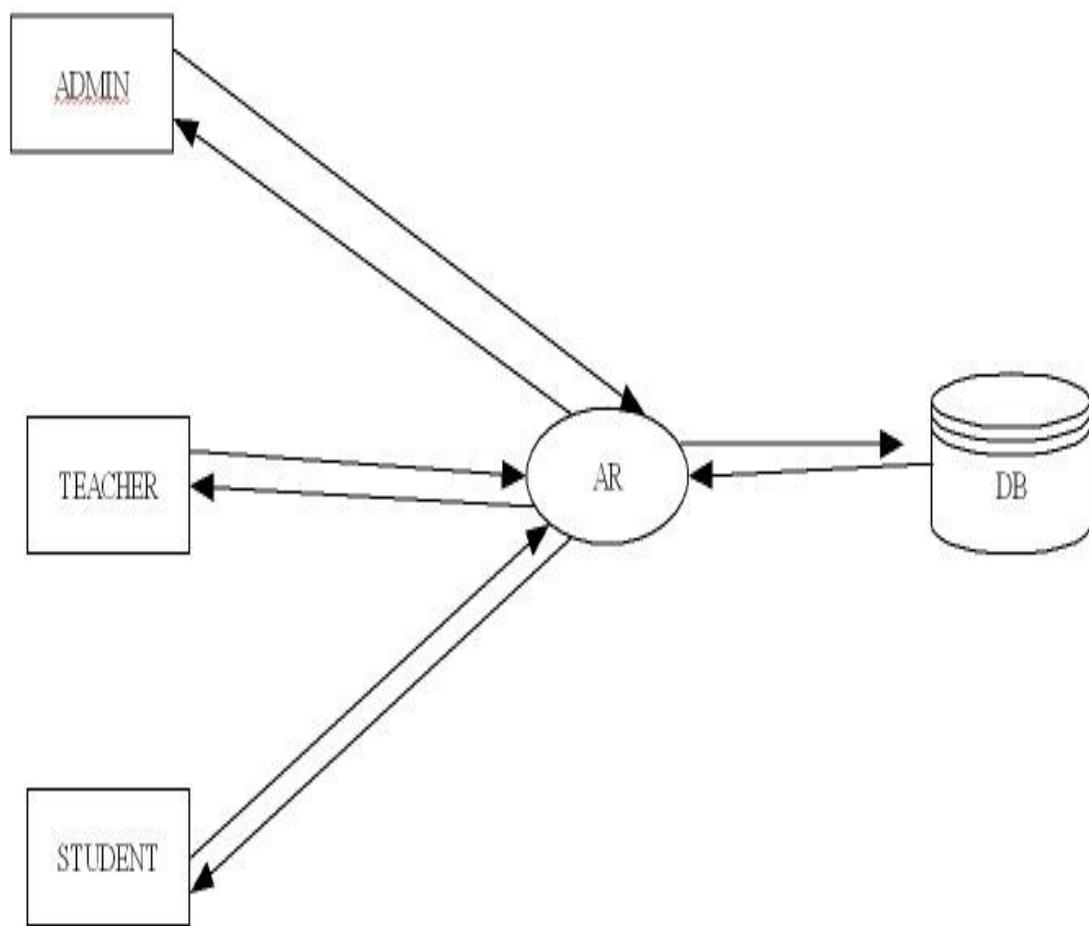


4. Open rectangle: which shows data store.

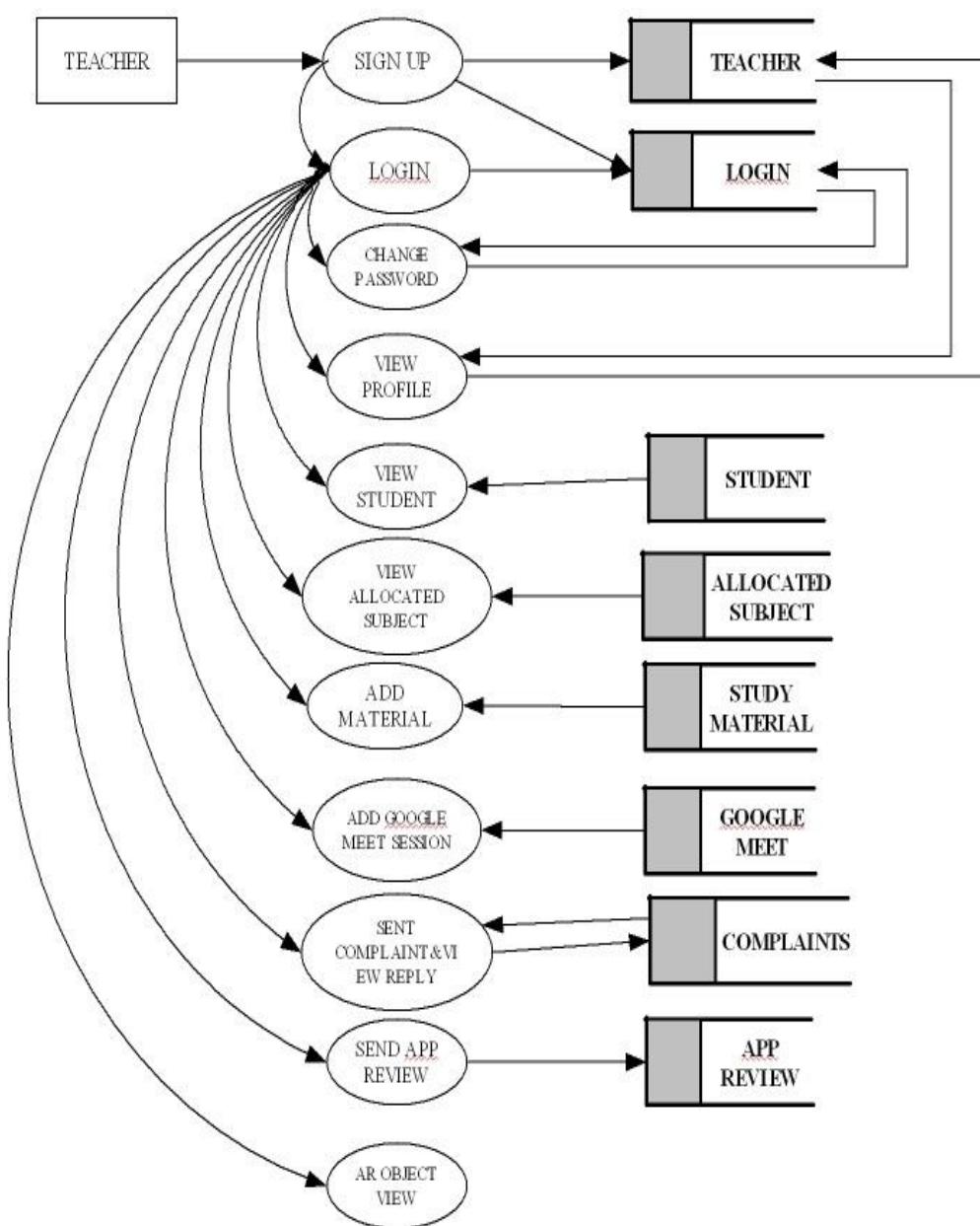


DATA FLOW DIAGRAM

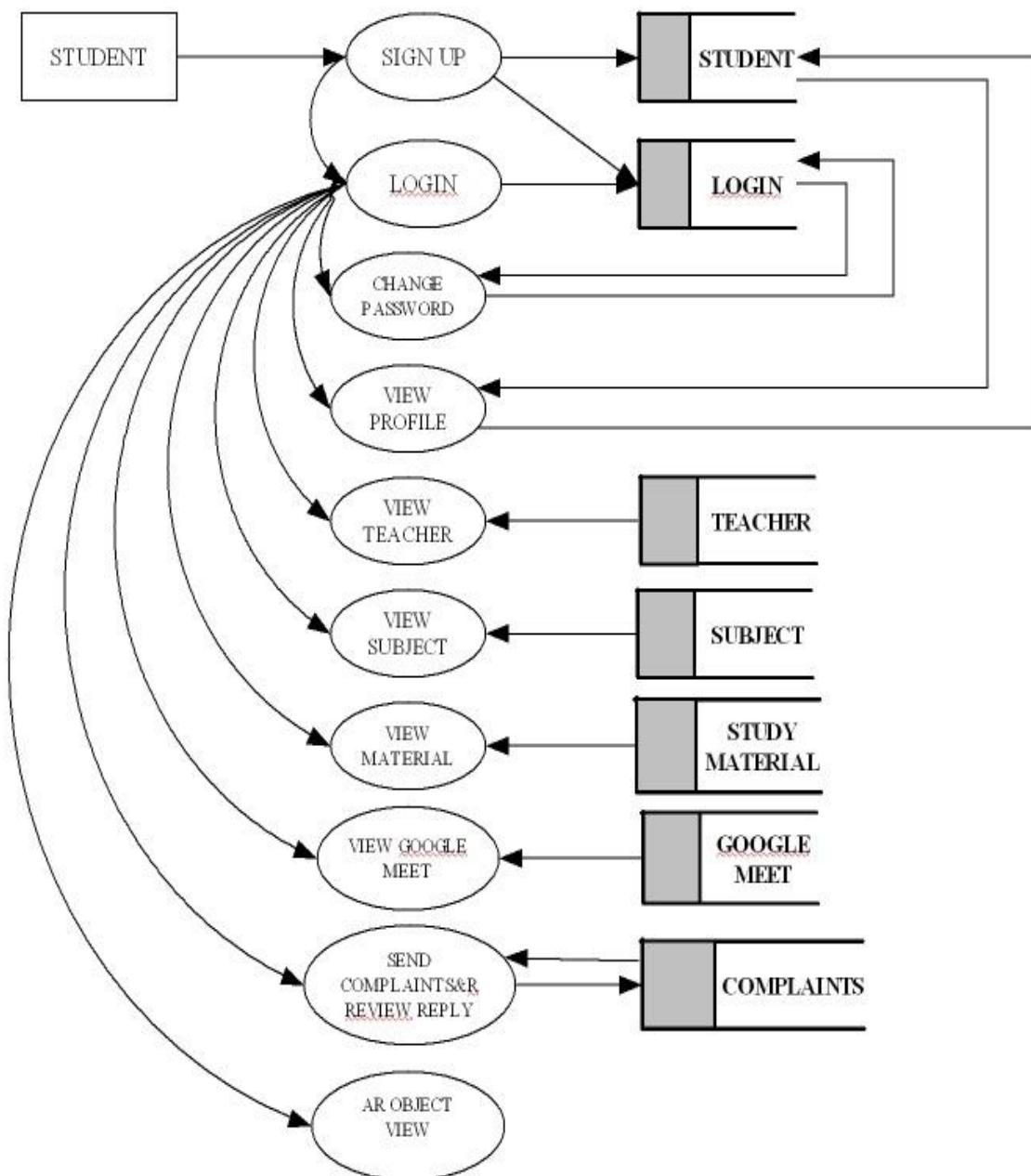
Level 0



Level 1



Level 2



SYSTEM DEVELOPMENT

System development is a 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 shows 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.

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 into four major categories depending on their functionality.

- Data Definition Language (DDL)

These SQL commands are used for creating, modifying, and dropping the structure of database 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 the 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:

✓ 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 the 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 program's 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 teste

IMPLEMENTATION

Implementation is the stage of project, when theoretical design is turned into 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.

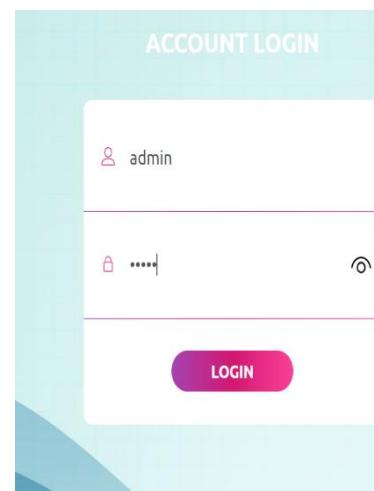
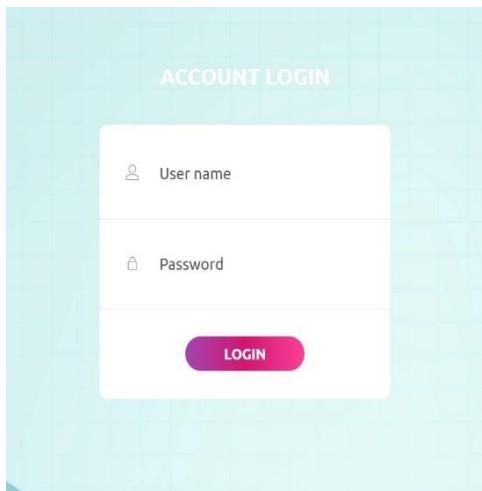
There are several activities involved while implementing a project:

- Careful planning.
- Investigating the current system and its constraints on implementation.
- Design 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, which is deciding on methods to be adopted. After the system was implemented successfully, training of the user was one of the most important sub tasks of the developer.

APPENDIX

WEB APPLICATION SCREEN SAMPLES



A screenshot of the ARLearn website homepage. The header includes navigation links for HOME, DEPARTMENT, COURSE, SUBJECT, STUDENT, TEACHER, Allocation, and OTHERS. Social media icons for Twitter, Facebook, LinkedIn, Instagram, and YouTube are also present. The main visual is a dark blue banner featuring two medical professionals wearing VR headsets, with the text 'Small Steps Lead To Big Achievements' overlaid. The footer contains contact information and a copyright notice.

A screenshot of the ARLearn website footer. It is divided into four sections: 'Get In Touch' (with address, email, phone, and social media icons), 'Quick Links' (with links to Home, About Us, Our Services, and Contact Us), 'Popular Links' (with links to Home, About Us, Our Services, and Contact Us), and a copyright notice at the bottom. A small upward arrow icon is located in the bottom right corner of the footer area.

		Search	
Sino	Department Name	Action	
1	Medical	Edit	Delete
2	CS	Edit	Delete

		Search	
Sino	Department Name	Action	
1	Medical	Edit	Delete
2	CS	Edit	Delete

Course Name	<input type="text"/>
Department	Medical
add	

		Search		
Sino	Department Name	Course Name	Action	
1	Medical	course med	Edit	Delete
2	Medical	course medtwo	Edit	Delete

		Search			
Sino	Sem	Department Name	Course Name	Subject Name	Action
1	1	Medical	course med	anatomy	Edit
					Delete
2	2	Medical	course med	physiology	Edit
					Delete
3	3	Medical	course med	physiology	Edit
					Delete
4	1	Medical	course med	biochemistry	Edit
					Delete
5	6	Medical	course med	microbiology & immunology	Edit
					Delete
6	5	Medical	course med	Pathology	Edit
					Delete
7	7	Medical	course med	Behavioral Science & Medical Ethics	Edit
					Delete
8	4	Medical	course med	Pharmacology	Edit
					Delete
9	8	Medical	course med	Introduction to Clinical Skills	Edit
					Delete

Name	<input type="text"/>
Email	<input type="text"/>
Contact	<input type="text"/>
Department	<input type="text" value="select"/>
Gender	<input type="radio"/> Male <input type="radio"/> Female
Photo	<input type="file" value="Choose File"/> No file chosen
Qualification	<input type="text"/>
	<input type="button" value="Add"/>

Search

Sno:	Name	Email	Contact	Gender	Photo	Semester	DOB	Course	Action
1	Nandana M P	nandana@gmail.com	9847881808	Female		sem 1	March 8, 2004	course med	<input type="button" value="Edit"/> <input type="button" value="delete"/>
2	Keerthana T	keerthana@gmail.com	8089883370	Female		sem 1	May 24, 2004	course med	<input type="button" value="Edit"/> <input type="button" value="delete"/>

dd-mm-yyyy

dd-mm-yyyy

Search

Sno	Student Name	Complaint	Date	Reply	Status
1	Nandana M. p	ggf	0000-00-00		

Name	<input type="text"/>
Email	<input type="text"/>
Contact	<input type="text"/>
Department	<input type="text" value="select"/>
Gender	<input type="radio"/> Male <input type="radio"/> Female
Photo	<input type="button" value="Choose File"/> No file chosen
Qualification	<input type="text"/>
<input type="button" value="Add"/>	

Select

Sino:	Name	photo	Email	Contact	Department	Gender	Qualification	Action
1	asia		asia@gmail.com	1234567890	Medical	Female	pg	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
2	irfanath V		irfu@gmail.com	9847771209	Medical	Female	pg	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

dd-mm-yyyy

dd-mm-yyyy

Search

Sino	Staff Name	Complaint	Date	Reply	Status

Subject Name	<input type="text"/>
Semester	<input type="text"/>
Course	course med
	add

Staff	asia
Subject	anatomy
	add

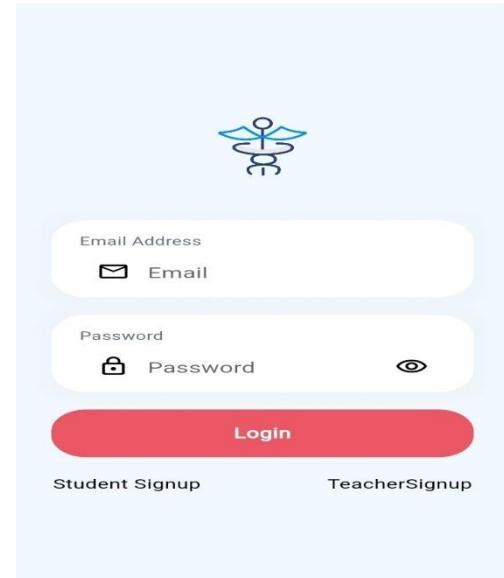
		Search	
SIno	Please fill out this field. me	Staff Name	Action
1	biochemistry	asia	Edit Delete
2	physiology	irfanath V	Edit Delete

ANDROID APPLICATION SCREEN SAMPLE

Enter IP Address —————

192.168.250.172

Connect



← TeacherSignup

Select Profile Image

Full Name

Email

Contact Number

Dob

Gender

Male

Female

← StudentSignup

Select Profile Image

Full Name

Email

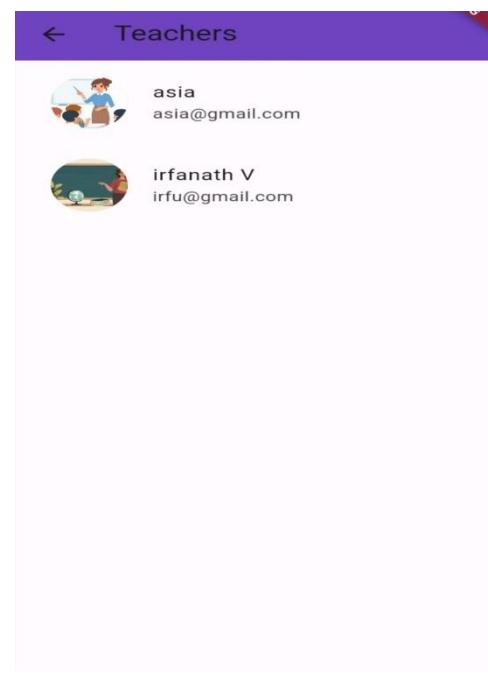
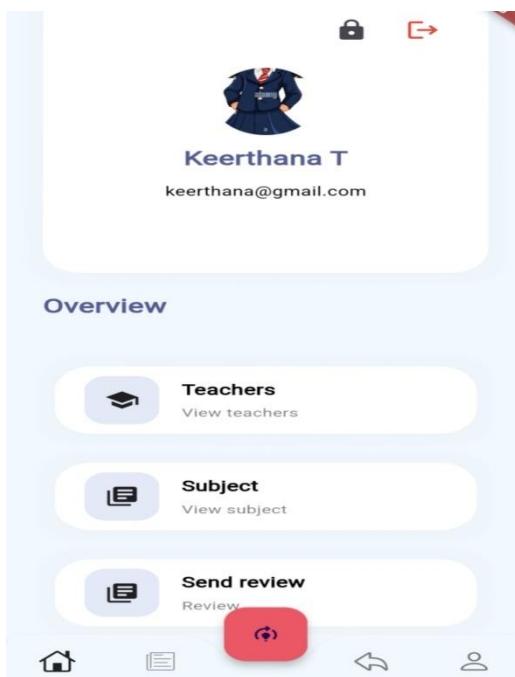
Contact Number

Dob

Gender

Male

Female



This screenshot shows a list of subjects. It includes three main sections: "anatomy" (Semester: 1, Course: course med) with buttons for "Ar view", "Meet", and "Mate"; "physiology" (Semester: 2, Course: course med) with buttons for "Ar view", "Meet", and "Mate"; and "biochemistry" (Semester: 1, Course: course med) with buttons for "Meet" and "Materials". Each section has a yellow warning bar on the right stating "RIGHT OVERFLOWED BY 24 PIXELS".

This screenshot shows a detailed view of a subject. It displays the date "2025-03-11", the subject name "Organ System", and a "Download" button. At the bottom, there is a "Review" section with a "Review" button and a "Send" button.

The screenshot shows a mobile application interface. At the top right, there is a purple header bar with the text "Students" and a back arrow icon. Below this, there are two student profiles:

- asia**: An icon of a person writing on a board, with the email "asia@gmail.com". There are lock and unlock icons above the profile.
- Nandana M P**: An icon of a girl in a red dress, with the email "nandana@gmail.com".
- Keerthana T**: An icon of a girl in a blue uniform, with the email "keerthana@gmail.com".

Below the profiles, there is a section titled "Overview" containing two buttons:

- Students**: An icon of a graduation cap, with the text "View students".
- Subject**: An icon of a book, with the text "View subject".

At the bottom of the screen are several navigation icons: a house icon, a document icon, a red circular icon with a white arrow, a back arrow, and a person icon.

The screenshot shows a mobile application interface. On the left, there is a section titled "AR View" with a back arrow icon. It displays a grid of icons representing various subjects:

Blood Cell	eco
Brain	Skeleton
Skull	mouth
eye	ear

On the right, there is a purple header bar with the text "Subjects" and a back arrow icon. Below it, there is a card for the subject "biochemistry":

- biochemistry**: Represented by a blue square icon.
- Semester: 1**: Represented by a green calendar icon.
- Course: course med**: Represented by an orange graduation cap icon.

At the bottom of the card are two buttons: "Meet" and "Material".

FUTURE ENHANCEMENT

Technology is updating day by day so it sure that we add more features or enhance software and user experience. There are some ideas which we had in our mind but couldn't do (required more hardwires).

1. AI Personalization: Use AI to adapt learning content to each student's needs, ensuring a tailored learning experience. A feature which can sense fire issue and update about it parents.
2. Multisensory Learning: Include sound, smell, or even taste in simulations to enhance the immersive learning experience.
3. Medical Data Integration: Link AR to real-world patient data (e.g., scans) for a more practical learning experience.
4. Global Database Access: Connect AR to a global medical knowledge base for access to up-to-date research, case studies, and clinical trials.

These are the option which we had in our mind but we couldn't add we are planning add it in feature.

CONCLUSION

The integration of Augmented Reality (AR) into medical education represents a significant advancement in how we approach learning in the field of medicine. By providing medical students with immersive, interactive, and hands-on experiences, AR enhances their understanding of complex anatomical structures, medical procedures, and diagnostic processes. This technology not only makes abstract concepts more tangible but also offers students the opportunity to practice skills in a safe, controlled environment before applying them in real-world clinical settings. The ability to visualize 3D models of the human body, simulate surgeries, and interact with virtual patients can help students develop a deeper understanding of medical science and improve their preparedness for professional practice. Furthermore, AR enables real-time collaboration, peer learning, and immediate feedback, making it a versatile tool for both individual and group study.

As medical education continues to evolve, AR has the potential to become an indispensable tool, transforming traditional methods of teaching and fostering a more effective, engaging, and comprehensive learning experience. By embracing AR, we can ensure that medical students are better equipped to meet the challenges of an ever-changing healthcare landscape.

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- <https://dribble.com>