PEEKAY CICS ARTS AND SCIENCE COLLEGE

(Affiliated to University of Calicut)

Mathara, Calicut-673014

DEPARTMENT OF COMPUTER SCIENCE

Project Report

CoBook

Done By

VIMAL K MANOJ

(RRAUSCS028)

Submitted in partial fulfilment of the requirement

For the award of the degree of

BACHELOR OF COMPUTER SCIENCE

(University of Calicut)

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CERTIFICATE

This Project "**CoBook**" is hereby approved as a credible study of computer science subject carried out and presented in a satisfactory manner to warrant its acceptance as a prerequisite to the degree of **BACHELOR OF COMPUTER SCIENCE.**

External Examiner Internal Guide

Internal Examiner Head of the Department

GET INSPIRED

RISS technologies

(AN ISO 9001 : 2008 CERTIFIED COMPANY)

Date: 05/03/23

CERTIFICATE

This is to certify that **VIMAL K MANOJ (RRAUSCS028) ABDUL RAHMAN BIN ALI (RRAUSCS003), SAYANTH P KUMAR (RRAUSCS027), MUHAMMED ZENHAR M (RRAUSCS018)** students of **PEEKAY CICS ARTS AND SCIENCE COLLEGE, MATHARA** has successfully completed their academic project entitled **"COBOOK(COLLEGE MANAGEMENT APP)"** in **PYTHON with ANDROID** under the guidance of our senior developers during the period **AUGUST2022 to MARCH2023.**

During this period they were found hardworking, punctual & efficient. We wish them a successful future.

RISS TECHNOLOGIES MAVOOR ROAD CALICUT-1 C.C. CENTRE

For RISS TECHNOLOGIES

5/03/23

Project Manager

2nd Floor, CC Centre, Mavoor Road, Calicut - 673 001. Ph: 9847478944
Web: www.risstechnologies.com, E-mail: risstechnology@gmail.com

CoBook

ACKNOWLEDGEMENT

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

We wish to express our heartfelt gratitude to Prof. **A. Kuttialikutty** Principal, **PEEKAY CICS ARTS AND SCIENCE COLLEGE, MATHARA** for his encouragement and inspiring guidance throughout the preparation of the project.

We express our deep sense of gratitude and sincere thanks to head of the department **Mr. Jishad Bangalath**, for the valuable guidance to do the project successfully.

We most sincerely appreciate and thank **Ms. Shidhila C P**, our project co-ordinate who helped us in all way possible and her support and co-operation towards the fulfilment of the 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 much thankful to our friends for their support and contribution to complete this project successfully.

ABSTRACT

The era of mobile technology opens the window to android app. The websites are vanishing, and android applications are emerging at a faster pace. Nowadays Smart phones have become an irresistible part of everyone's life. With these smart phones the human life is changed for better. It's the time to change from conventional websites to android apps, which has become the part of our daily routine. Android applications can give us more comfort and better user interface.

The main objective of this app is to make advancement in education system and institutional activities. This application helps in adding mobility and automation in managing the institutional information. Here in this application using various technology, notes are prepared from live videos and hence it is easy for the students to learn.

The android application simplifies this process by giving instant notifications to the students or concerned staff. This application makes this process easier, faster, secure and less error prone. The proposed application will be a substitute for official website. Specifically, the application is designed to notify the updates from the college website. The faculties can add internal marks, notes, attendance, related to their subjects, to the system. Students can check their attendance, internal marks, notes, through this application. The application provides a chat section for better communication between faculties and students.

CONTENTS

INDRODUCTION

1. INTRODUCTION

1.1 PROBLEM DEFINITION

Managing a college involves handling a large amount of data related to students, faculties, courses, schedules, attendance, and various administrative tasks. Manually managing such large amounts of data can be a daunting task and can lead to errors and inconsistencies. The primary objective of the college management system is to provide a comprehensive solution for managing all aspects of the college. The system should be able to handle student and faculty information, course and curriculum management, scheduling, attendance tracking, grade tracking, and administrative tasks such as fee management. Additionally, the system should provide a platform for communication between students, faculty. It should also provide analytical reports and insights to help administration make data-driven decisions. The college management system should be user-friendly and accessible to all stakeholders, including students, faculty, and administration. It should be secure and able to handle a large volume of data. The aim of this project is to develop a robust, reliable, and scalable college management system that streamlines the management process, reduces manual intervention, and improves communication**.**

1.2 SCOPE OF THE PROJECT

A college management app that leverages modern AI technology would be a game-changer in the education industry. The app would provide several advanced features to improve the learning experience for students, teachers, and administrators. One of the key features of this app would be question-answer generation. With this feature, students could ask questions related to a topic or subject, and the AI-powered system would provide accurate answers. This would save time for students and teachers who would otherwise have to spend time researching the answers. Another important feature of this app would be emotion capture during tests. The app would use AI technology to capture the emotions of students during exams. This would help teachers to identify and understand the emotions of their students, and provide better support and guidance to those who need it. Overall, a college management app that uses modern AI technology would be a powerful tool to enhance the learning experience and improve student outcomes. It would revolutionize the way education is delivered and received, and pave the way for a brighter future in the field of education.

MODULE DESCRIPTION

The application contains mainly 5 modules

1. Admin Module
2. Administration Staff Module
3. HOD module
4. Staff module
5. Student Module

Admin Module Features

- Login
- College profile management
- Administration Staff management
- Department management
- Course Management
- Fee Management
- Hod assign each department
- Upload notifications
- View Behaviour of Students

Administration Staff Module Features

- Login
- View Profile
- Staff management
- View Departments
- View Courses
- Student enrolment
- Notification management

- Staff allocate department
- Manage notification

HOD module Features

- Login
- View Profile
- View staff in his department
- Subject Allocation
- Subject Management
- Timetable management
- Notification management
- Send feedback
- View Mental Stress of Student - Graph
- View behaviour of Student

Staff module Features

- Login
- View Profile
- Upload notes
- View Assigned Subject
- View timetable
- View Student
- Chat with student
- Send feedback
- View notification
- Create Test
- Create Questions
- Publishing of internal mark
- Attendance Management System
- Send app rating with new ideas

Student module Features

- Login
- Download notes
- View academic calendar
- View Profile
- View timetable
- Send feedback
- View result (Internal)
- View attendance report
- chat with staff
- Complaint sent to hod and view reply
- View notification
- Send app rating with new ideas

SYSTEM STUDY AND ANALYSIS

2.SYSTEM ANALYSIS

System analysis is a general term that refers to an orderly, structured process for identifying and solving a problem. The system analysis process is called the life cycle methodology, since it relates to four significant phases in the life cycle of all business information system: study, design, development and operation. The definition of system analysis includes not only the process but also the process of putting together to form a new system. A system analyst is an individual who performs system analysis during any or all of the life cycle phases of a business information system. The system analyst not only analyses business information system problems, but also synthesizes new systems to solve those problems or meet other information needs. The various techniques used in the study of the present system are:

• Observation

• Interviews

• Site visits

• Discussions

Preliminary Investigation

Preliminary investigation checks whether a system is developed by means of SDLC, a prototyping strategy or structured analysis method or combination of these methods. A project request should first be reviewed. The choice of the development strategy of the project is secondary to investment of an organization resource in information system project. The entire proposal for the required project is submitted to the selection committee for evaluation to identify that these projects are most beneficial to the organization. The preliminary investigation is thus carried out by the system analyst under the direction of the selection committee. In this stage at first visited an office to know how the working squad is going on. What all are the daily work done by officials and what the present system is.

Identification of needs

The first step in the SDLC is the identification of needs. Since there is likely to be stream of users requests, standard procedures must be established to deal with them, the initial investigation is one way of handling this. The objective is to determine whether the request is valid and feasible before an improvement or modification of an existing or building a new system.

Fact Finding Techniques

There are several methods for gathering the sort of information. We can use all of these methods for gathering information from the user of the existing system. We can introduce seven fact-finding techniques.

Sampling

Sampling is the process of collecting a representative sample of documents, forms and records. Because it would be impractical to study every occurrence of every form or record in a file or database, system analyst normally uses sampling techniques to get a large enough cross section to determine what can happen in the system. The system analyst seeks to sample enough forms to represent the full nature and complexity of the data. First collected sample is a Sample receipt and conducted a study to know how these data can be converted to a digital method.

Research and Visit Sites

Another fact-finding technique is to thoroughly research the problem domains. Most problems are not unique. Others have solved them before us. We can contact or perform site visits at companies that have experienced similar problems. If these companies are willing to share, valuable information can be obtained, may be tremendous time and cost in the development process. Computer trade journals and reference books are also a good source of information from the collected receipt we found how collection details are recorded in a receipt. The next point is how it is recorded in an office register. We must design a database such that all that data must be maintained in that database.

Observation

Observation is fact finding technique where in the system analyst either participates in or watches a person perform activities to learn about the system. This technique is often used when the validity of data collected through other methods is in question or when the complexity of certain aspects of the system prevents a clear explanation by the end users. This is an effective data- collection technique for obtaining an understanding of a system.

Interviews

These are fact finding techniques where by the system analyst Collects information from individuals through face-to-face interaction. The personal interview is generally recognized as the most important and most often used fact finding techniques. Interviewing can be used to achieve any or all of the following goals: find facts, verify facts, clarify facts, generate enthusiasm, get the end-user involved, identify requirements and solicit ideas and opinions.

Cost Benefit Analysis

"Cost Benefit Analysis (CBA) estimates and totals up the equivalent money value of the benefits and cost to the community of projects to establish they are worthwhile. "In order to reach a conclusion astute desirability of a project, all aspects of the project, positive and negative, must be expressed in terms of a common unit; i.e. There must be a "bottom line". The most convenient common unit is money. A program may provide benefits which are not directly expressed in terms of dollars but there is some amount of money the recipients of the benefits would consider just as the projects benefits. When all data have been identified and broken down into cost categories, the analyst must select a method for evaluation. Several evaluation methods are available, each with pros and cons.

The common methods are:

I. Net benefit analysis

II. Present value analysis

III. Net present value

IV. Payback analysis

V. Break even analysis

VI. Cash flow analysis

After completing all these phases, a simple idea has been generated such that we can design a system that can limit the drawbacks of existing system. The next point to be focused is its merit and demerit. One of the important facts that the limit the performance is that a position that can cover main route of goods must be chosen. Integration of map application will arrange the felicity to do this.

2.1 EXISTING SYSTEM

Websites are used as a medium to provide academic notifications and news. Users cannot check the website on a regular basis to stay updated.

- Faculties inform the students about assignments in the traditional way, i.e., either directly or through other messaging applications.
- Communication between students and faculties are not provided in websites.
- Students are not notified about their attendance status or internal marks
- All the activities are not available in a single app.
- Cannot view the performance of the student.

2.2 PROPOSED SYSTEM

Android applications provide an easy-to-use environment. Compared to websites, applications give us more comfort and better user interface.

● Students can view latest assignments, or notes uploaded by their teachers. They can also download these study materials.

●Application facilitates student-teacher and student-student communication through chat.

●Students can check their attendance and internal marks uploaded by corresponding teachers.

●Students can generate notes.

2.3 FEASIBILITY STUDY

The ability to complete a project successfully, taking into account legal, economic, technological, scheduling, and other factors is considered as feasibility study. Rather than just diving into a project and hoping for the best, feasibility study allows project managers to investigate the possible negative and positive outcomes of a project before investigate the possible outcomes of a project before investing too much time and money.

2.3.1 Technical Feasibility

The technical requirements for the system are economic and it does not use additional software. That is whether the system can be implemented using the existing technologies or not. This application is develop using python, whose development kit are easily available and free of cost, thus making our system technically feasible.

2.3.2 Economical 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 operational costs. 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.

2.3.3 Operational 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.

2.3.4 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.

2.3.5 Software Feasibility

Even though this 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.

2.3.6 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 needed absolutely no new hardware.

2.4 SYSTEM SPECIFICATION

The system specification refers to a detailed functional and non-functional description of a system. This term can also be defined as an explicit set of requirements that need to be satisfied be specific system. System specification includes software and hardware specification of project

2.4.1 HARDWARE SPECIFICATION

The selection of hardware is very important in the existence and proper working of any software. Then selection hardware, the size and capacity requirements are also important.

• INPUT DEVICE: MOUSE, KEYBOARD

• OUTPUT DEVICE: MONITOR

• MEMORY: 4 GB RAM(MINIMUM)

• PROCESSOR: PENTIUM III PROCESSOR

2.4.2 SOFTWARE SPECIFICATION

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

• OPERATING SYSTEM: WINDOWS 7/8 for better performance

• FRONT END: Android, Python

• BACK END: MySQL

• IDE: Android Studio, JetBrains PyCharm

2.5 SOFTWARE TOOLS USED

2.5.1 PyCharm (Python Interpreter)

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, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed. Often, programmers fall in love with Python because of the increased productivity it provides. Since there is no compilation step, the edit-test-debug cycle is incredibly fast. 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. When the program doesn't catch the exception, the interpreter prints a stack trace. A source level debugger allows inspection of local and global variables, evaluation of arbitrary expressions, setting breakpoints, stepping through the code a line at a time, and so on. The debugger is written in Python itself, testifying to Python's introspective power. On the other hand, often the quickest way to debug a program is to add a few print statements to the source: the fast edit-test-debug cycle makes this simple approach very effective. Python is a multi-paradigm programming language. Object-oriented programming and structured programming are fully supported, and many of its features support functional programming and aspect-oriented programming (including by Meta programming and meta objects (magic methods)). Many other paradigms are supported via extensions, including design by contract and logic programming. Python uses dynamic typing, and a combination of reference counting and a cycle-detecting garbage collector for memory management. It also features dynamic name resolution (late binding), which binds method and variable names during program execution.

2.5.2 Android

Android is an operating system based on the Linux kernel. The project responsible for developing the Android system is called the Android Open-Source Project (AOSP) and is primarily lead by Google. The Android system supports background processing, provides a rich user interface library, supports 2-D and 3-D graphics using the OpenGL-ES (short OpenGL) standard and grants access to the file system as well as an embedded SQLite database. An Android application typically consists of different visual and non-visual components and can reuse components of other applications. The Android system is a full software stack, which is typically divided into the four areas. The levels can be described as:

- Applications - The Android Open-Source Project contains several default applications, like the Browser, Camera, Gallery, Music, Phone and more.
- Application framework - An API which allows high-level interactions with the Android system from Android applications
- Libraries and runtime - The libraries for many common functions (e.g.: graphic rendering, data storage, web browsing, etc.) of the Application Framework and the Dalvik runtime, as well as the core Java libraries for running Android applications.
- Linux kernel - Communication layer for the underlying hardware.

The Linux kernel, the libraries and the runtime are encapsulated by the application framework. The Android application developer typically works with the two layers on top to create new Android applications. The Android Software Development Kit (Android SDK) contains the necessary tools to create, compile and package Android applications. Most of these tools are command line based. The primary way to develop Android applications is based on the Java programming language. The Android SDK contains the Android debug bridge (adb), which is a tool that allows you to connect to a virtual or real android device, for the purpose of managing the device or debugging your application. Google provides two integrated development environments (IDEs) to develop new applications. The Android Developer Tools (ADT) are based on the Eclipse IDE. ADT is a set of components (plug- ins), which extend the Eclipse IDE with Android development capabilities. Google also supports an IDE called Android Studio for creating Android applications. This IDE is based on the IntelliJ IDE. Both IDEs contain all required functionality to create, compile, debug and deploy Android applications. They also allow the developer to create and start virtual Android devices for testing. Both tools provide specialized

editors for Android specific files. Most of Android's configuration files are based on XML. In this case these editors allow you to switch between the XML representation of the file and a structured user interface for entering the data. Eclipse uses plug-ins to provide all the functionality within and on top of the runtime system. Its runtime system is based on Equinox, an implementation of the OSGi core framework specification. In addition to allowing the android Platform to be extended using other programming languages such as C and Python, the plug-in framework allows the Eclipse Platform to work with typesetting languages like LaTeX networking applications such as telnet and database management systems. The plug-in architecture supports writing any desired extension to the environment, such as for configuration management. Java and CVS support is provided in the Eclipse SDK, with support for other version control systems provided by third-party plug-ins. The Eclipse SDK includes the Eclipse Java development tools (JDT), offering an IDE with a built- in incremental Java compiler and a full model of the Java source files. This allows for advanced refactoring techniques and code analysis. The IDE also makes use of a workspace, in this case a set of metadata over a flat file pace allowing external file modifications as long as the corresponding workspace "resource" is refreshed afterwards. Eclipse implements use the graphical control elements of the Java toolkit called SWT, whereas most Java applications use the Java standard Abstract Window Toolkit (AWT) or Swing. Eclipse's user interface also uses an intermediate graphical user interface layer called JFace, which simplifies the construction of applications based on SWT.

2.5.3 DREAMWEAVER

Adobe Dreamweaver is a software program for designing web pages, essentially a more fully featured HTML web and programming editor. The program provides a what-you see-is-what-you-get (WYSIWYG) interface for users to create and edit web pages in a more user-friendly environment. Dreamweaver supports multiple mark-up languages including HTML and Extensible Mark-up Language (XML), style sheet languages like Cascading Style Sheets (CSS), and programming languages including JavaScript, C#, Visual Basic (VB), Active Server Pages (ASP), and others. The program is also available in a number of languages, including English, Spanish, French, German, Japanese, Chinese (both Simplified and Traditional), Italian, Russian, and more. Dreamweaver was originally developed and published by Macromedia in 1997. Adobe purchased Macromedia (which included the rights to Dreamweaver) in 2005 and continued the development of the program. The many features of Dreamweaver make it a versatile web editing tool, where it be for creating complex or very simple's sites.

SYSTEM DESIGN

3.SYSTEM DESIGN

3.1 INTRODUCTION

The most creative and challenging phase of the system develop mentis the system design. It provides the understanding and procedural details necessary for implementing the system recommended in the feasibility study. Design goes through the logical and physical stages of development. In designing a new system, the analyst must have a clear understanding of the objectives, which the design is aiming to fulfil. The first step is to determine how the output is to be produced and in what format. Second input data and master files have to be designed to meet the requirements of the proposed output. The operational phases are handled through program construction and testing. Finally details related to justification of the system and an estimate of the impact of the candidate system on the user and the organization are documented a devaluated by the management. Design of a system can be defined as a process of applying various techniques and principles for the purpose of defining a device, a process or a system in sufficient detail to permit its physical realization. Thus, system design is a solution, “how to” approach to the creation of a new system. The design step provides a data design, architectural design and a procedural design. The data design transforms the information domain created during analysis into the data structure that will be required to implement the software. The architectural design defines the relationship among major structural components and procedural description of the software. Source code is generated and testing conducted to integrate and validate the software. System design goes through two phases of development:

- Logical design
- Physical design

Logical Design

The part of the design process that is independent of any specific hardware or software platform is referred to as logical design. During logical design, all functional features of the system chosen for development in analysis phase are described independently of any computer platform. Logical design concentrates on the business aspects of the system and tends to be oriented to a high level of specificity.

Physical Design

Physical design is the part of the design phase in which the logical specifications of the system from logical design are transferred into technology-specific details from which all programming and system construction can be accomplished. As a part of the physical design, analysts design the various parts of the system to perform the physical operation necessary to facilitate data capture, processing, and information output.

3.2.1 INPUT DESIGN

The first step in system design is to design input and output within predefined guidelines. In input design, user originated inputs are converted into computer-based format. In output design, the emphasis is on producing the hard copy of the information requested or displaying the output on a CRT screen in a predefined format. The following features have been incorporated into the input design of the proposed system.

Easy Data Input

Data entry has been designed in a manner much similar to the source documents. Appropriate messages are provided in the message area, which prompts the user in entering the right data. Erroneous data inputs are checked at the end of each screen entry.

Data Validation

The input data is validated to minimize errors in data entry. For certain data specific codes have been given and validation is done which enables the user to enter the required data or correct them if they entered wrong codes.

User Friendliness

User is never left in a state of confusion as to what is happening, instead appropriate error and acknowledge messages are sent. Error maps are used to indicate the error codes and specific error messages.

Consistent Format

A fixed format is adopted for displaying the title messages. Every screen has line, which displays the operation that can be performed after the data entry. They are normally done at the touch of a key.

Interactive Dialogue

The system engages the user in an interactive dialogue. The system is able to extract missing or omitted information from the user by directing the user through appropriate messages, which are displayed.

3.2.2 OUTPUT DESIGN

The output is the most important and direct source of information to the user. The output should be provided in a most efficient formatted way. Based on the options given by the users and the administrator various types of output screens have been generated. The computer output is the most important and direct source of information to the user. Efficient and intelligible output design improves the system's relationship with the user and helps in decision- making. Output design was studied going actively during the study phase. The objective of the output design is defined the contents and format of all documents and reports in an attractive and useful format.

3.3 DATA FLOW DIAGRAM

A data flow diagram (DFD) is a graphical representation of the flow of data through an information system, modelling its process aspects. A DFD shows what kinds of information will be input to and output from the system, where the data will come from and go to, and where the data will be stored. These are expanded by level, each explaining its process in detail. Processes are numbered for easy identification and are normally labelled in block letters. Each Data flow is labelled for easy understanding. Data flow diagrams are made up of a number of symbols, which represents system components. Data flow modelling method uses four kinds of symbols.

Process

Process shows the work of the system. Each process has one or more data inputs and produce one or more data outputs. Processes are represented by circles in data flow diagrams.

Data Stores

A data store is a repository of data. Processes can enter data into a store or retrieve data from the data store. Data stores are represented by two parallel lines, which may be depicted horizontally or vertically.

Data Flows

The arrows represent data flow. A data flow is data in motion. A data flow represents an input of data to a process or the output of the data from a process. A dataflow is also used to represent the creation, reading, deletion, or updating of data in a file or database.

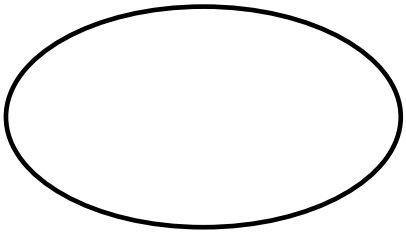
External Entities

External entities are outside the system but they either supply input the system or use other systems output. They are entities on which the designer has control. External entities that supply data into the system are sometimes called *source*. External entities that use the system data are called *sinks*. These are represented by rectangles in the data flow diagram. In DFD there are four main symbols: -

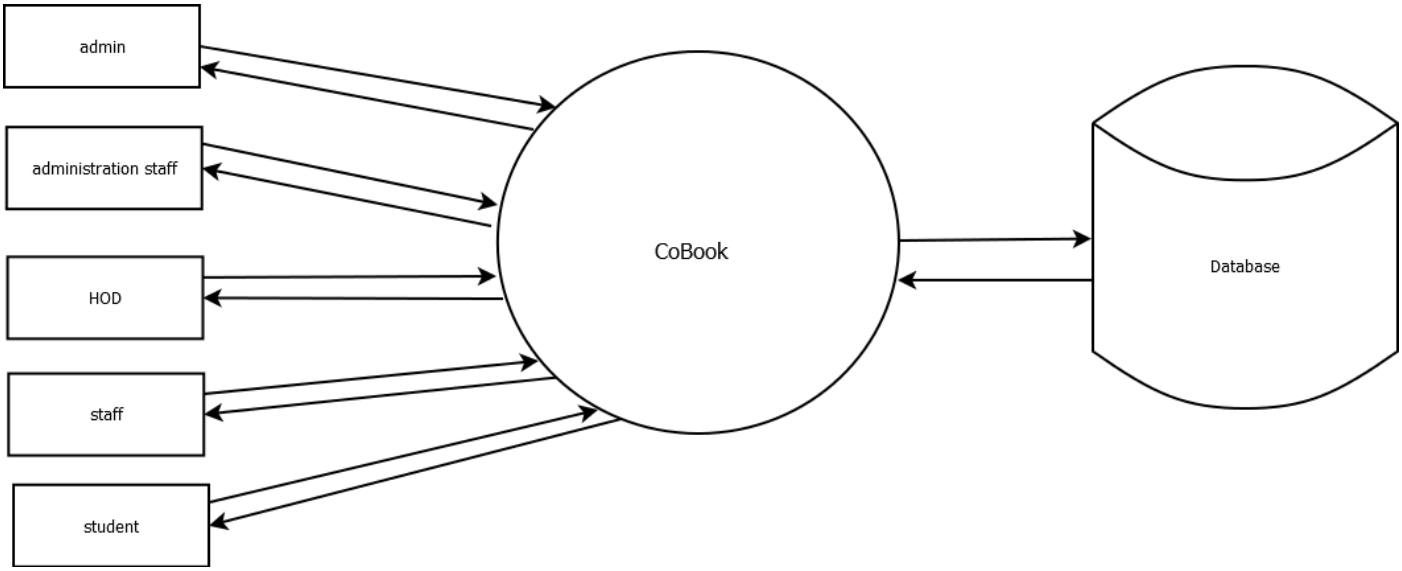
- A square defines a Source or destination of a system data

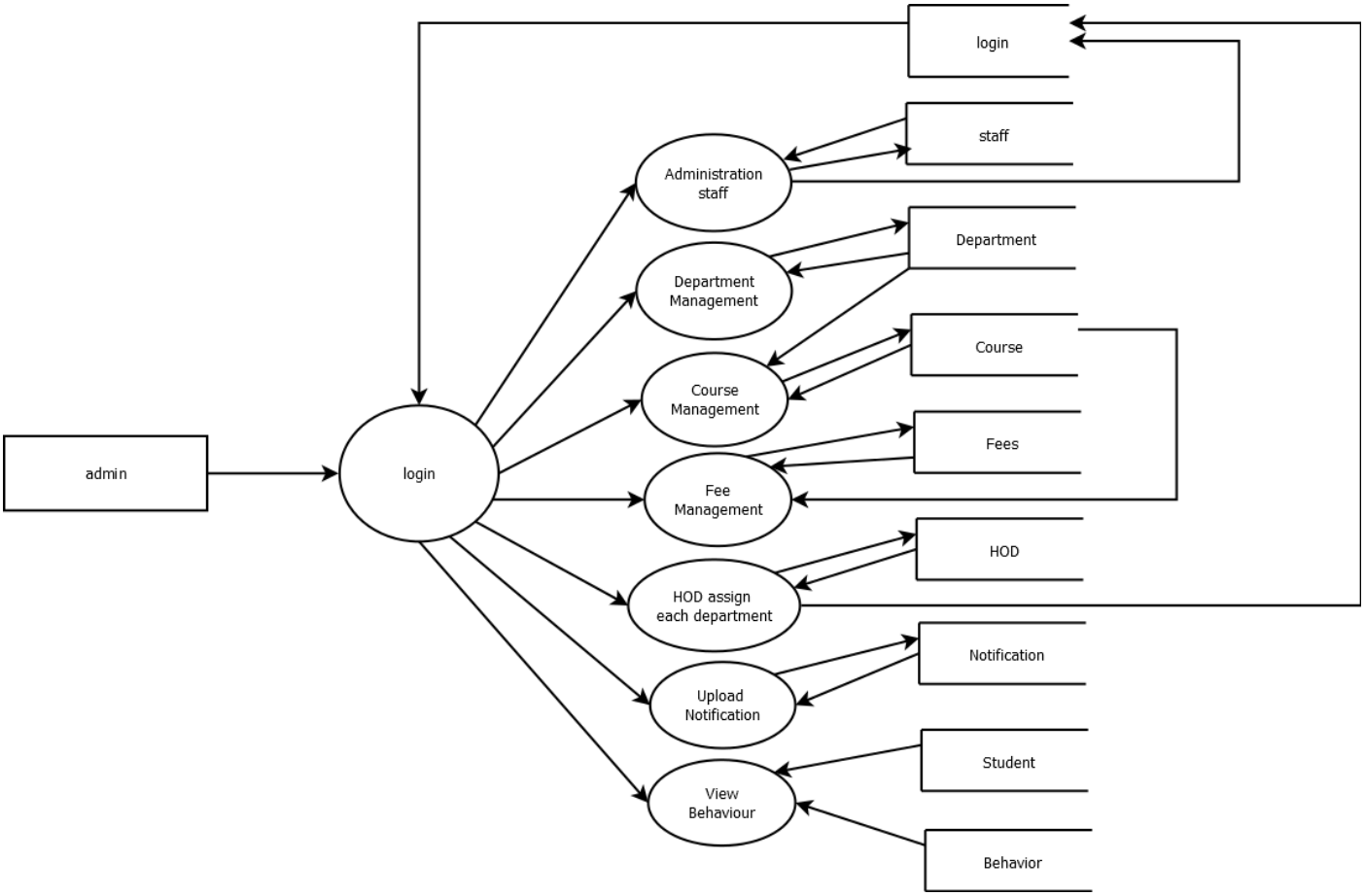
- An arrow identifies data flow. It is a pipeline through which information flows

- A circle represents that transforms incoming data flow into outgoing data flow



- An open rectangle stores data


admin
administration staff
HOD
staff
student
CoBook
Database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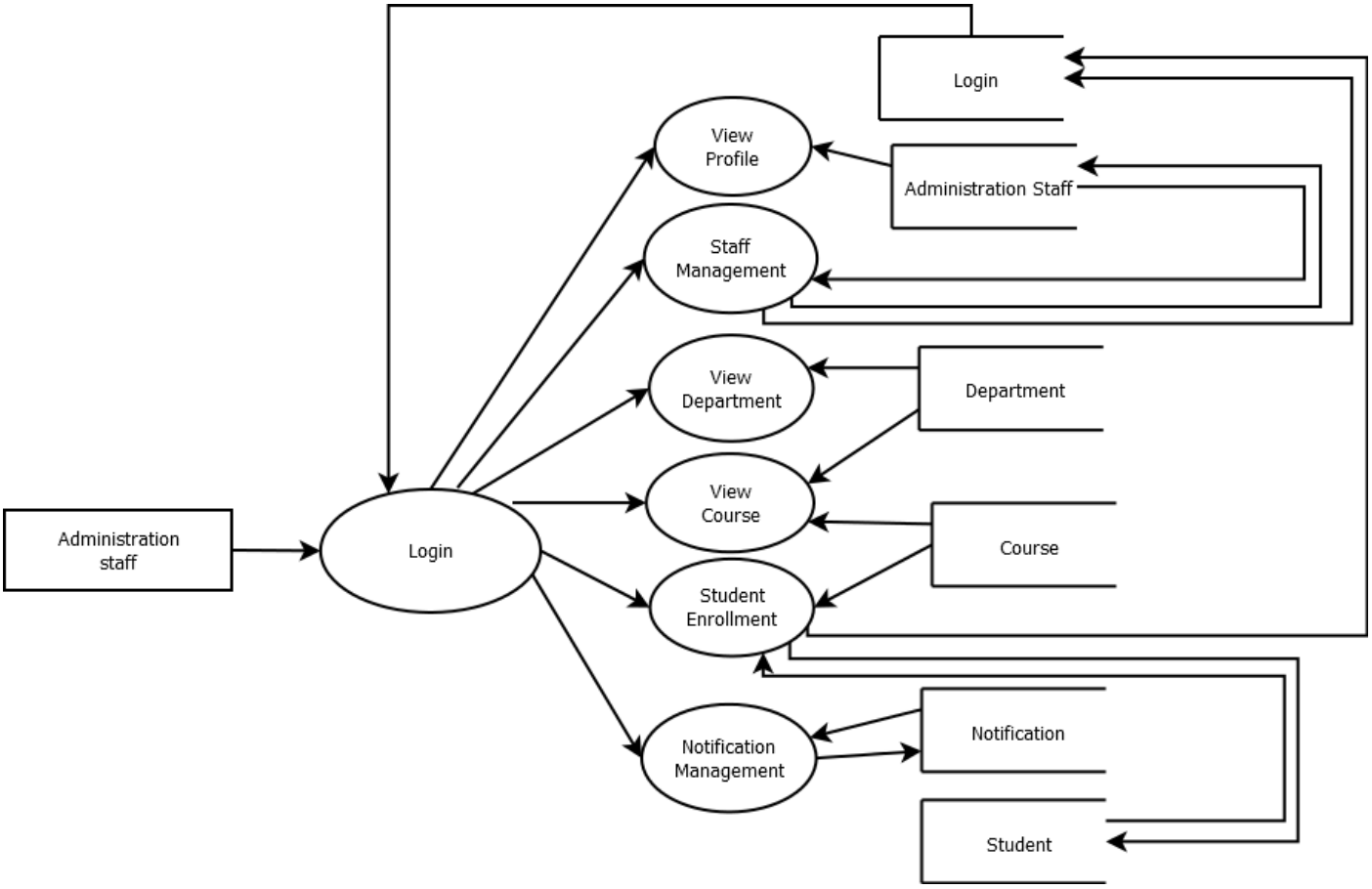
login
login
staff
Administration staff
Department
Department Management
Course
Course Management
Fees
Fee Management
HOD
HOD assign each department
Notification
Upload Notification
Student
View Behaviour
Behavior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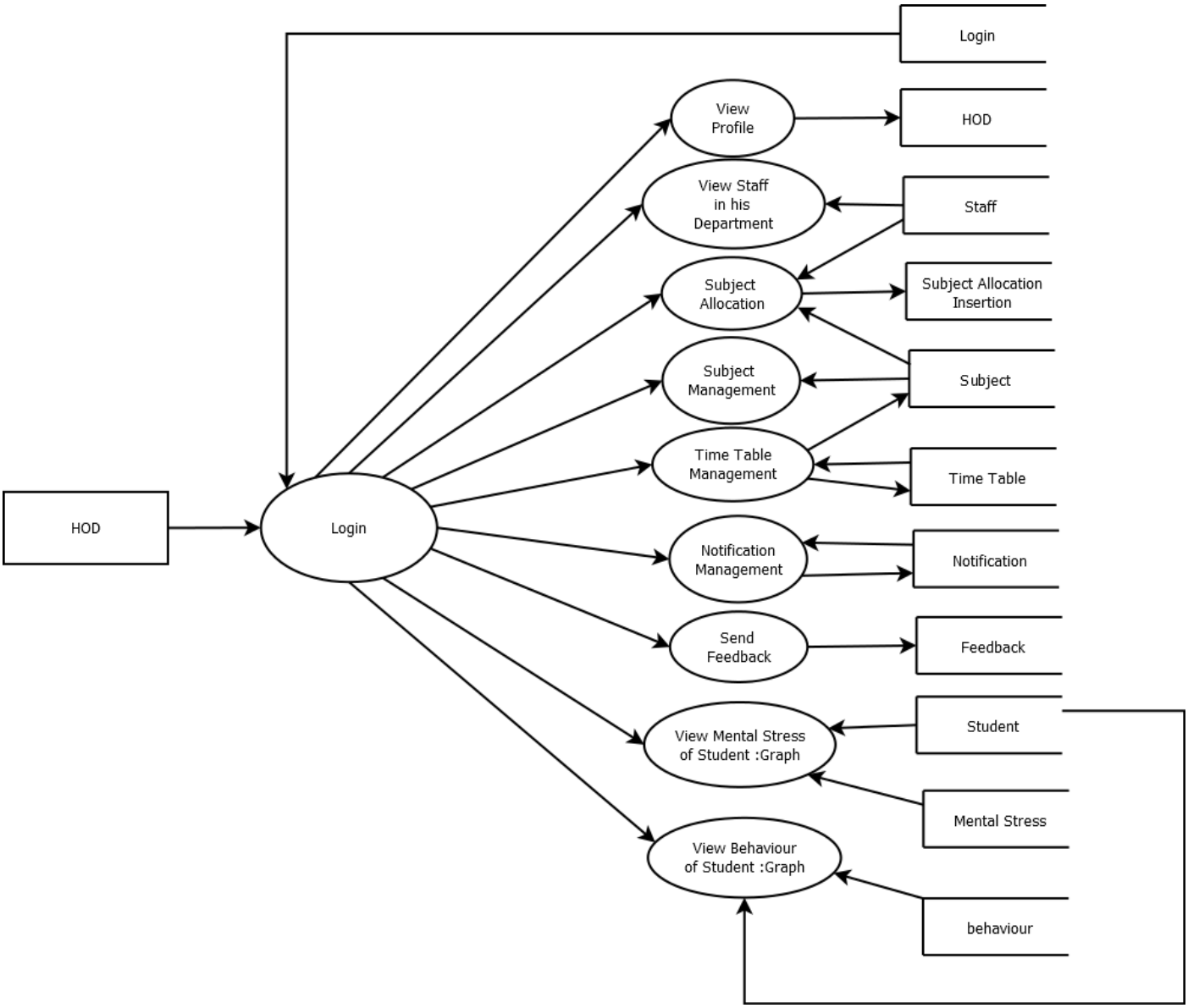
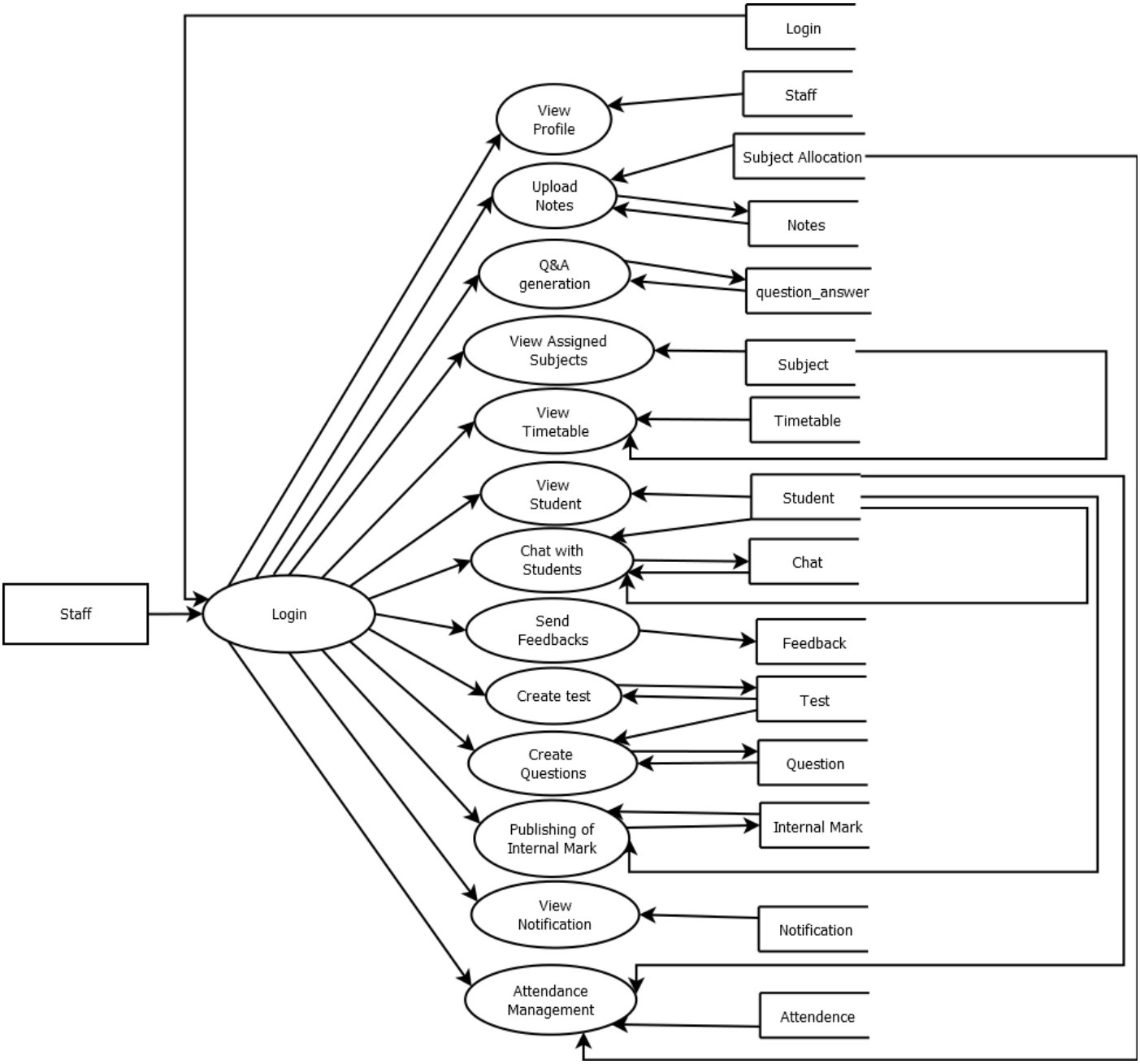
View Profile
Administration Staff
Staff Management
View Department
Department
View Course
Course
Administration staff
Login
Student Enrollment
Notification Management
Notification
Student


Login
View Profile
HOD
View Staff in his Department
Staff
Subject Allocation
Subject Allocation Insertion
Subject Management
Subject
Time Table Management
Time Table
HOD
Login
Notification Management
Notification
Send Feedback
Feedback
View Mental Stress of Student :Graph
Student
Mental Stress
View Behaviour of Student :Graph
behaviour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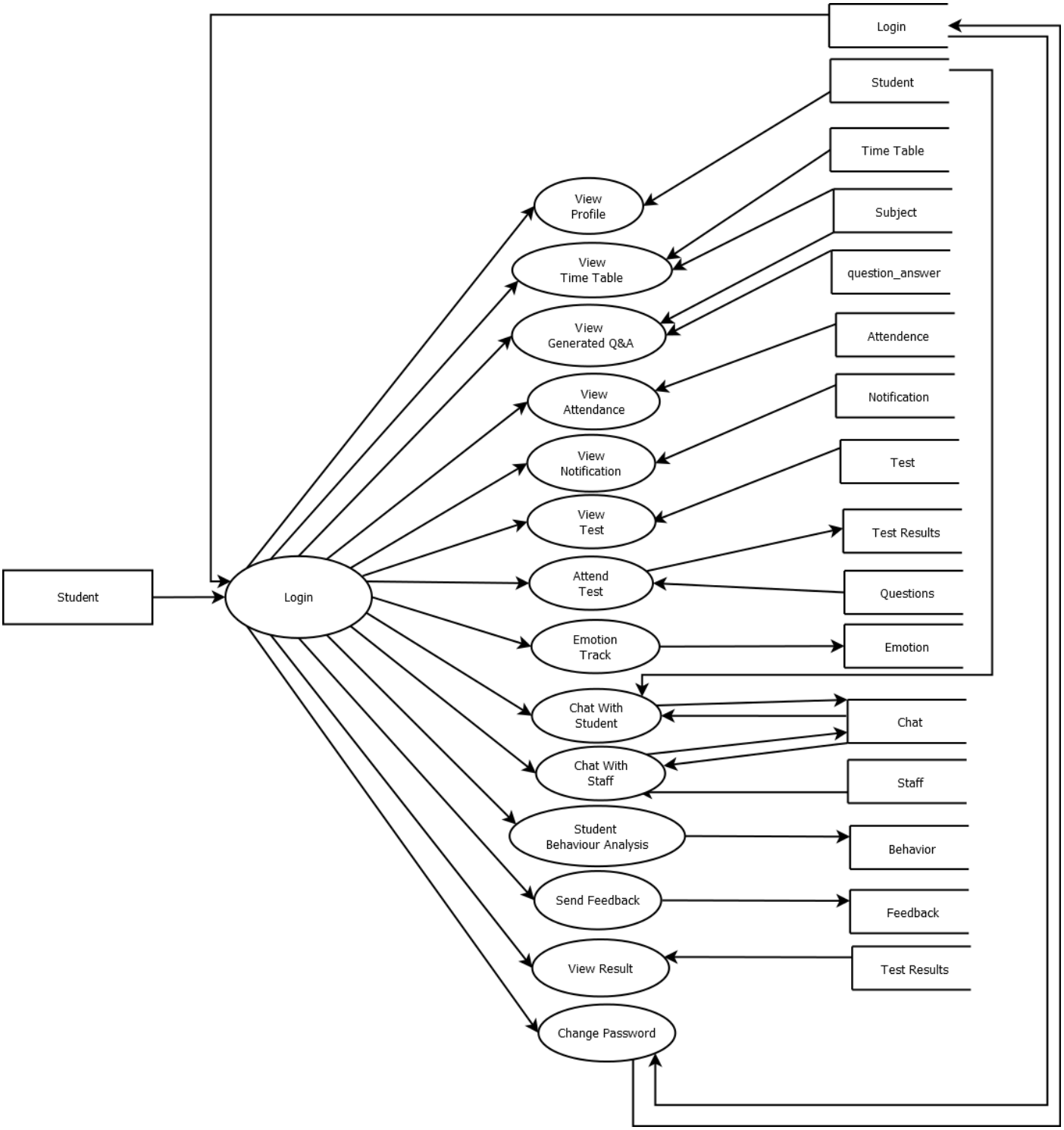
Login
View Profile
Upload Notes
Q&A generation
View Assigned Subjects
View Timetable
View Student
Chat with Students
Send Feedbacks
Create test
Create Questions
Publishing of Internal Mark
View Notification
Attendance Management
Login
Staff
Subject Allocation
Notes
question_answer
Subject
Timetable
Student
Chat
Feedback
Test
Question
Internal Mark
Notification
Attendence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View Profile
View Time Table
View Generated Q&A
View Attendance
View Notification
View Test
Attend Test
Emotion Track
Chat With Student
Chat With Staff
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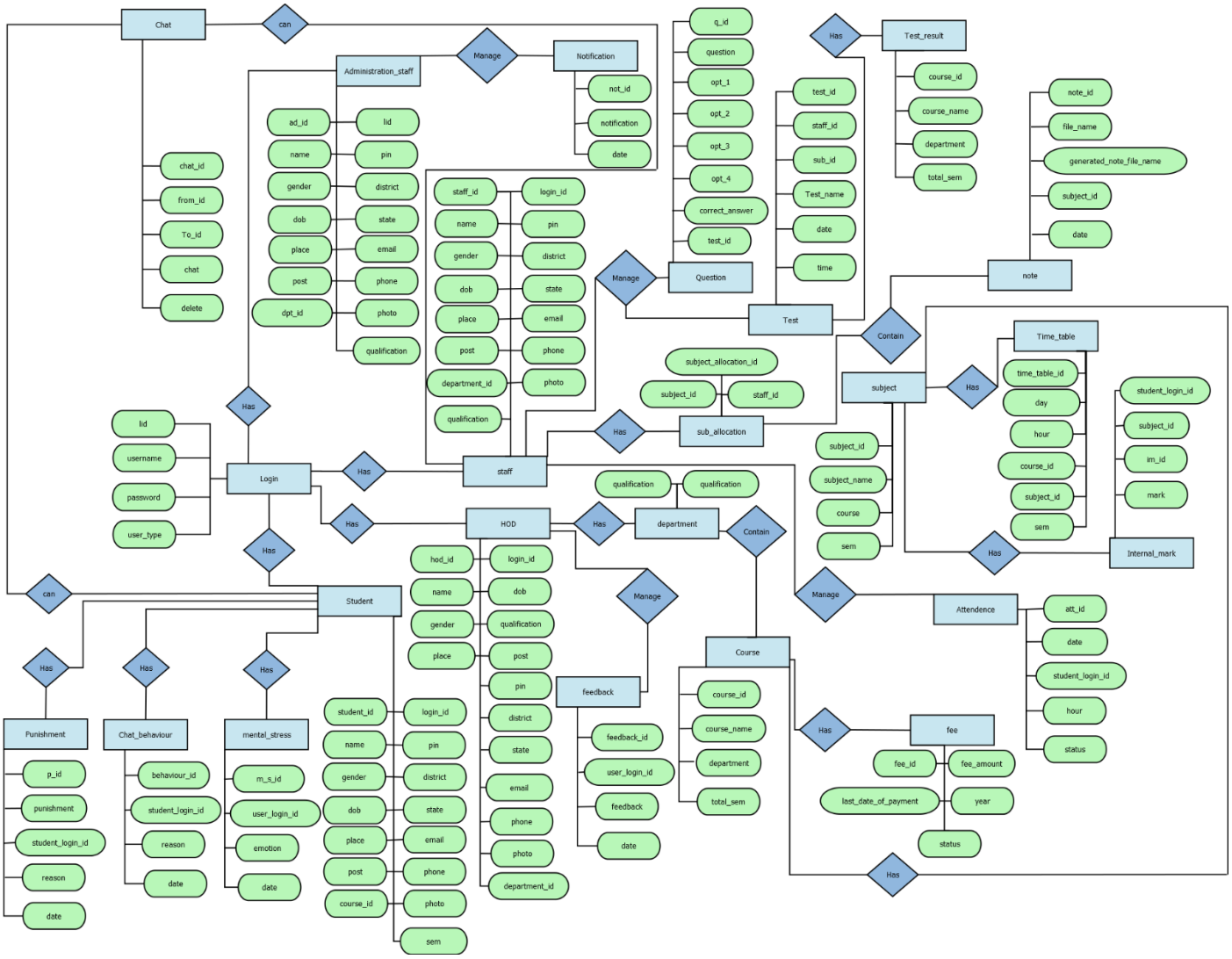
Send Feedback
View Result
Change Password
Login
Student
Time Table
Subject
question_answer
Attendence
Notification
Test
Test Results
Questions
Emotion
Chat
Staff
Behavior
Feedback
Test Results

3.4 ENTITY RELATIONSHIP DIAGRAM



3.5 DATABASE DESIGN

Database is a 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 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 relationship map directly to object classes and named relationships. However, the term database 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 consist of a number of steps which will be carried out by the database designer.

3.6 NORMALISATION

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 does not allow multi valued and composite valued attributes. It states that the domain of an attribute must include only atomic values that value of any attribute in a tuple must be single value from the domain of that attribute. Second Normal Form: In the second normal form, for relations where primary key constrains multiple attributes, non-key attributes should not be functionally depended on a part of the primary key. Third Normal Formal: In third normal form it satisfies the second normal form and no non-key attributes of relation transitively depend on primary key.

3.7 TABLES

Table Name: Administrator

Attribute Name	Data Type	Constraints
ad_id	integer	• Primary Key • Auto Increment
lid	integer	
name	Varchar (50)	
gender	Varchar (8)	
dob	date	
place	Varchar (25)	
post	Varchar (25)	
pin	integer	
district	Varchar (20)	
state	Varchar (20)	
email	Varchar (20)	
phone	Varchar (20)	
photo	Varchar (100)	
qualification	Varchar (100)	
dpt_id	integer	

Table Name: attendance

Attribute Name	Data Type	Constraints
att_id	integer	• Primary Key • Auto Increment
date	date	
hour	Varchar(25)	
student_login_id	integer	
status	Varchar(10)	

Table Name: chat

Attribute Name	Data Type	Constraints
chat_id	integer	• Primary Key • Auto Increment
from_id	integer	
to_id	integer	
message	Varchar(500)	
date	date	
time	Varchar()	

Table Name: chat_behaviour

Attribute Name	Data Type	Constraints
behaviour_id	integer	• Primary Key • Auto Increment
student_login_id	integer	
type	Varchar(40)	
count	integer	

Table Name: course

Attribute Name	Data Type	Constraints
course_id	integer	• Primary Key • Auto Increment
course_name	varchar(30)	
department_id	integer	
total_sem	integer	

Table Name: department

Attribute Name	Data Type	Constraints
department_id	integer	• Primary Key • Auto Increment
department	varchar(30)	

Table Name: fee

Attribute Name	Data Type	Constraints
fee_id	integer	• Primary Key • Auto Increment
fee_amount	Varchar(10)	
year	Varchar(10)	
last_date_of_payment	date	
course_id	integer	

Table Name: feedback

Attribute Name	Data Type	Constraints
feedback_id	integer	• Primary Key • Auto Increment
user_login_id	integer	
feedback	Varchar(100)	
date	date	

Table Name: Internal mark

Attribute Name	Data Type	Constraints
student_login_id	integer	• Primary Key • Auto Increment
subject_id	integer	
Im_id	integer	
mark	integer	

Table Name: hod

Attribute Name	Data Type	Constraints
hod_id	integer	• Primary key • Auto Increment
login	integer	
name	varchar(50)	
dob	date	
gender	varchar(8)	
qualification	varchar(30)	
place	varchar(25)	
post	varchar(25)	
pin	integer	
district	varchar(20)	
state	varchar(20)	
email	varchar(20)	
phone	varchar(20)	
photo	varchar(100)	
department_id	integer	

Table Name: login

Attribute Name	Data Type	Constraints
lid	integer	• Primary Key • Auto Increment
username	Varchar(70)	
password	Varchar(30)	
user_type	Varchar(25)	

Table Name: mental_stress

Attribute Name	Data Type	Constraints
m_s_id	integer	• Primary Key • Auto Increment
user_logn_id	integer	
emotion	Varchar(10)	
date	date	

Table Name: notification

Attribute Name	Data Type	Constraints
not_id	integer	• Primary Key • Auto Increment
notification	Varchar(100)	
date	date	

Table Name: question

Attribute Name	Data Type	Constraints
staff_id	integer	• Primary Key • Auto Increment
question	Varchar(50)	
opt_1	Varchar(25)	
opt_2	Varchar(25)	
opt_3	Varchar(25)	
opt_4	Varchar(25)	
correct_answer	Varchar(25)	
test_id	integer	

Table name: question_answer

Attribute Name	Data Type	Constraints
q_id	integer	• Primary key • Auto Increment
question	Varchar(1000)	
answer	Varchar(500)	
date	date	
lid	integer	

Table name: staff

Attribute Name	Data Type	Constraints
staff_id	integer	• Primary Key • Auto Increment
login_id	integer	
name	Varchar(25)	
dob	date	
gender	Varchar(8)	
qualification	Varchar(30)	
place	Varchar(25)	
post	Varchar(20)	
pin	integer	
district	Varchar(20)	
state	Varchar(20)	
email	Varchar(60)	
phone	Varchar(20)	
photo	Varchar(100)	
depatment_id	integer	

Table Name: subject

Attribute Name	Data Type	Constraints
subject_id	integer	• Primary Key • Auto Increment
subject_name	Varchar(20)	
course_id	integer	
sem	integer	

Table name: student

Attribute Name	Data Type	Constraints
student_id	integer	• Primary Key • Auto Increment
login_id	integer	
name	Varchar(50)	
dob	date	
gender	Varchar(8)	
place	Varchar(25)	
post	Varchar(20)	
pin	integer	
district	Varchar(20)	
state	Varchar(20)	
email	Varchar(60)	
phone	Varchar(20)	
photo	Varchar(100)	
sem	integer	
course_id	integer	

Table Name: subject_allocation

Attribute Name	Data Type	Constraints
subject_allocation_id	integer	• Primary Key • Auto Increment
subject_id	integer	
staff_id	integer	

Table name: test

Attribute Name	Data Type	Constraints
test_id	integer	• Primary Key • Auto Increment
staff_id	Integer	
sub_id	Integer	
test_name	Varchar(20)	
date	Date	
time	Varchar(20)	
test_des	Varchar(60)	

Table name: test_result

Attribute Name	Data Type	Constraints
test_result_id	integer	• Primary Key • Auto Increment
test	Varchar(20)	
student_login_id	Integer	
mark	integer	

Table name: timetable

Attribute Name	Data Type	Constraints
time_table_id	integer	• Primary Key • Auto Increment
day	Varchar(20)	
hour	Varchar(20)	
course_id	Integer	
subject_id	integer	

SYSTEM TESTING AND IMPLIMENTATION

4.SYSTEM TESTING AND IMPLIMENTATION

4.1 SYSTEM TESTING

Testing is an activity to verify that a correct system is being built and is performed with the intent of finding faults in the system. However not restricted to being performed after the development phase is complete, but this is to carry out in parallel with all stages of system development, starting with requirements specification. Testing results, once gathered and evaluated, provide a qualitative indication of software quality and reliability and serve as a basis for design modification if required. A project is said to be incomplete without proper testing.

Testing is an activity to verify that a correct system is being built and is performed with the intent of finding faults in the system. However not restricted to being performed after the development phase is complete, but this is to carry out in parallel with all stages of system development, starting with requirements specification. Testing results, once gathered and evaluated, provide a qualitative indication of software quality and reliability and serve as a basis for design modification if required. A project is said to be incomplete without proper testing.

4.2 TESTING METHEDOLOGIES

- Unit Testing
- Integration Testing
- Validation Testing
- Output Testing
- User Acceptance Testing

Unit Testing

The first level of testing is called as unit testing. Here the different modules are tested and the specification produced during design for the modules. Unit testing is essential for verification of the goal and to test the internal logic of the modules. Unit testing is conducted to different modules of the project. Errors were noted down and corrected down immediately and the program clarity was increased. The testing was carried out during the programming stage itself. In this step each module is found to be working satisfactory as regard to be expected out from the module.

Integration Testing

The second level of testing includes integration testing. It is a systematic testing of constructing structure. At the same time tests are conducted to uncover errors with the interface. It need not to be the case, that software whose modules when run individually showing results will also show perfect results when run as a whole. The individual modules are tested again and the results are verified. The goal is to see if the modules integrated between the modules. This testing activity can be considered as testing the design and emphasizes on testing modules interaction.

Validation Testing

The next level of testing is validation testing. Here the entire software is tested. The reference document for this process is the requirement and the goal is to see if the software meets its requirements. The requirement document reflects and determines whether the software functions as the user expected. At culmination of integration testing, software is completely assembled as a package and corrected and a final series of software test validation test begins. The proposed system under construction has been tested by using validation testing and found to be working satisfactory. Data validation checking is done to see whether the corresponding entries made in different tables are done correctly. Proper validation checks are done in case of insertion and updating of tables, in order to see that no duplication of data has occurred. If any such case arises proper warning message will be displayed. Double configuration is done before the administrator deletes a data in order to get positive results and to see that o data have been deleted by accident.

Output Testing

The output of the software should be acceptable to the system user. The output of requirement is defined during the system analysis. Testing of the software system is done against the output and the output testing was completed with success.

User Acceptance Testing

An acceptance test has the objective of selling the user on the validity and reliability of the system. It verifies that the system procedures operate to system specification and the integrity of the vital data is maintained.

4.3 SYSTEM IMPLEMENTATION

System implementation is the final phase i.e., putting the utility into action. Implementation is the state in the project where theoretical design turned into working system. Implementation involves the conversion of a basic application to complete replacement with a computer system. It is the process of converting to a new or revised system design into an operational one. During the design phase, the products structure, its undergoing data structures, the general algorithms and the interfaces and control/data linkages needed to support communication among the various sub structures were established

Implementation process is simply a translation of the design abstraction into the physical realization, using the language of the target architecture. Implementation includes all those activities that take place to convert from the old system to the new. The new system may be totally new replacing an existing manual or automated system, or it may be major modification to an existing system. In either case, proper implementation is essential to provide a reliable system to meet organizational requirements. There are three types of implementations:

- Implementation of a computer system to replace a manual system.
- Implementation of a new computer system to replace an existing one.
- Implementation of a modified application to replace an existing one, using the same computer.

The common approaches for implementation are:

Parallel Conversion

In parallel conversion the existing system and new system operate simultaneously until the project team is confident that the new system is working properly. The outputs from the old system continue to be distributed until the new system has proved satisfactorily parallel conversion is a costly method because of the amount of duplication involved.

Direct Conversion

Under direct conversion method the old system is discontinued altogether and the new system becomes operational immediately. A greater risk is associated with direct conversion is no backup in the in the case of system fails.

Pilot Conversion

A pilot conversion would involve the changing over of the part of the system either in parallel or directly. Use of the variation of the two main methods is possible when part of the system can be treated as a separate entity.

User Training

After the system is implemented successfully, training of the user is one of the most important subtasks of the developer. For this purpose, user manuals are prepared and handled over to the user to operate the developed system. Thus, the users are trained to operate the developed system. In order to put new application system into use, the following activities were taken care of:

- Preparation of user and system documentation.
- Conducting user training with demo and hands on.
- Test run for some period to ensure smooth switching over the system

The major implementation procedures are:

- Test plans
- Training
- Conversion

Test Plans

The implementation of a computer-based system requires that the test data be prepared and the system and its elements be tested in a structured manner.

Training

The purpose of training is to ensure that all the personal who are to be associated with the computer-based business system possesses the necessary knowledge skills. As the system provides user friendliness only basic training is needed.

Conversion

It is the process of performing all of the operations that results directly in the turnover of the new system to the user. Conversion has two parts: The creation of a conversion plan at the start of the development phase and the implementation of the plan throughout the development phase. The creation of a system changes over plan at the end of the development phase and the implementation of the plan at the beginning of the operation phase.

4.4 SYSTEM MAINTANANCE

The maintenance is an important activity in the life cycle of a software product. Maintenance includes all the activities after the installation of software that is performed to keep the system operational. The maintenance phase of a software life cycle is the time period in which a product performs useful work.
Maintenance is classified into four types:

- Corrective Maintenance
- Adaptive Maintenance
- Perfective Maintenance
- Preventive Maintenance
-

Corrective Maintenance

Corrective maintenance refers to changes made to repair defects in the design, coding, or implementation of the system. Corrective maintenance is often needed for repairing processing or performance failures or making changes because of previously uncorrected problems or false assumptions. Most corrective maintenance problems surface soon after the installation. When corrective maintenance problems surface, they are typically urgent and need to be resolved to curtail possible interruptions in normal business activities.

Adaptive Maintenance

Adaptive maintenance involves making changes to an information system to evolve its functionality or to migrate it to different operating environment. Adaptive maintenance is usually less urgent than corrective maintenance because of business and technical changes typically occur some period of time.

Perfective Maintenance

Perfective maintenance involves making enhancements to improve processing performance, interface usability, or to add desired, but not necessarily required, system features. Many system professionals feel that perfective maintenance is not really the maintenance but new development.

Preventive Maintenance

Preventive maintenance is the only maintenance activity which is carried out without formal maintenance request from the user. When a software company or maintenance agency realizes that the methodologies used in a program have become obsolete, it may decide to develop or modify parts of the program, which do not confirm to the current trends. Of these types, more time and money are spending on perfective than on corrective and adaptive maintenance together.

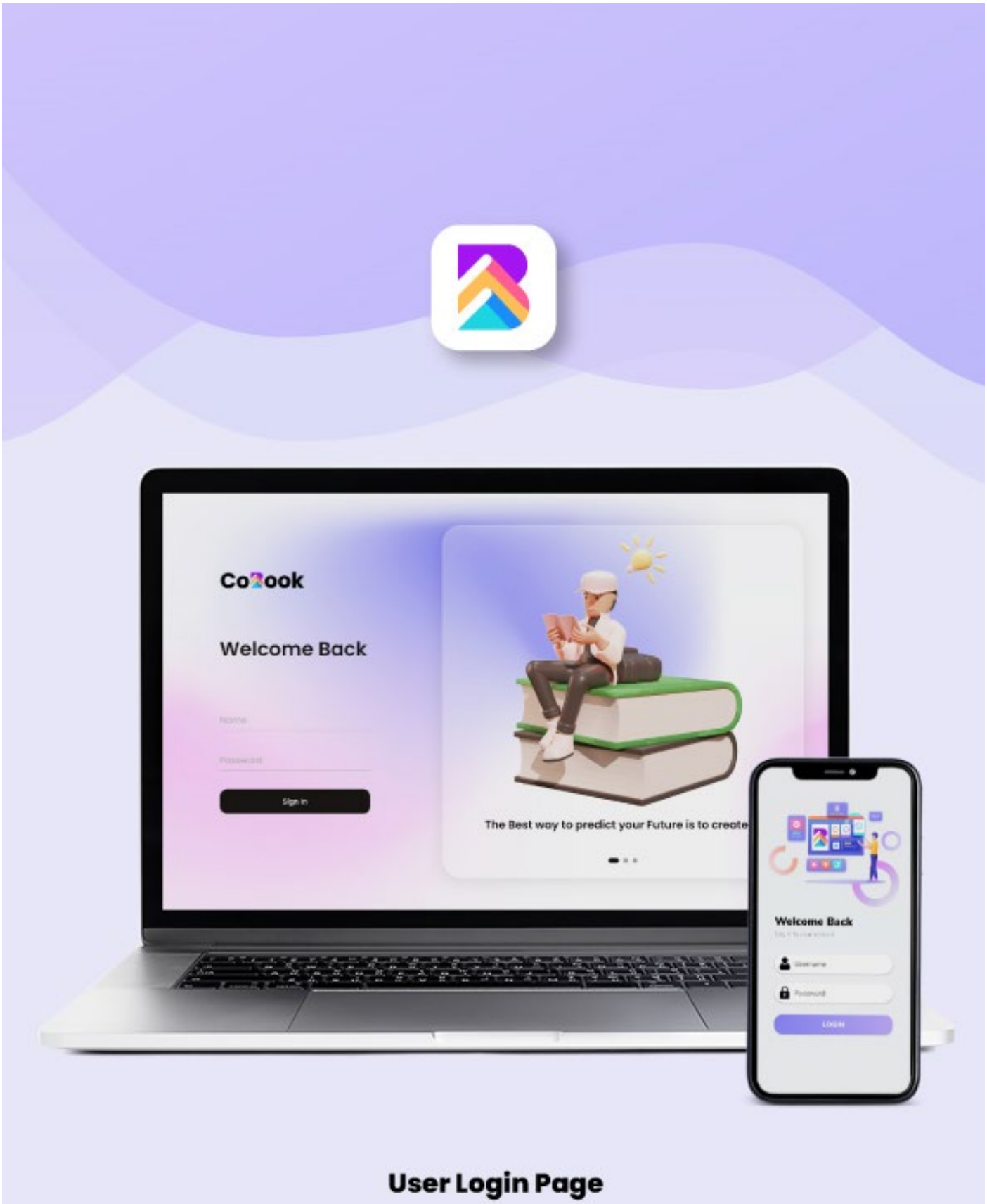
CONCLUSION

5.CONCLUSION

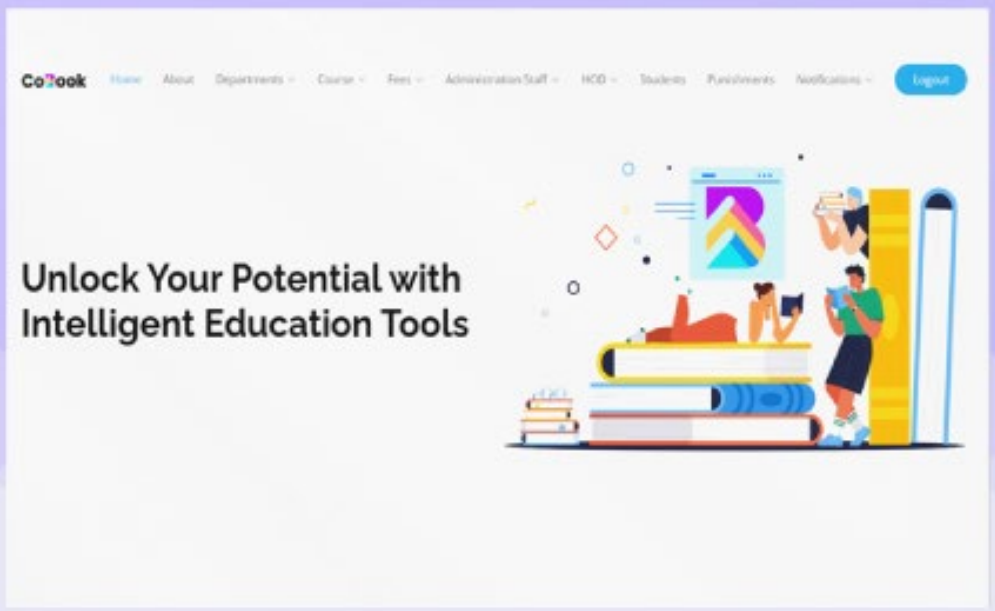
A college management app can be a valuable tool for both students and faculty. It can provide easy access to study materials, facilitate communication between students and teachers, and allow for easy tracking of attendance and internal marks. By incorporating modern AI technologies like question answer generation and emotion capture during tests, the app can provide an even more advanced and user-friendly experience. With the increasing popularity of mobile devices and apps, a college management app is a logical next step in modernizing educational institutions.

The project is developed using HTML, CSS and JavaScript as front-end. The Python flask is used as the back-end. The database becomes MySQL. This language has been selected for future improvements based on user specification and current system analytics flexibility. Since the system is developed in modules future enhancement is very easy. This project has been developed, tested, documented and implemented successfully. The main objective of the system was brought into effect. This has been developed as versatile and user friendly as possible keeping in mind the advanced features in this technology.

UI DESIGN



User Login Page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HOD
Students
Punishments
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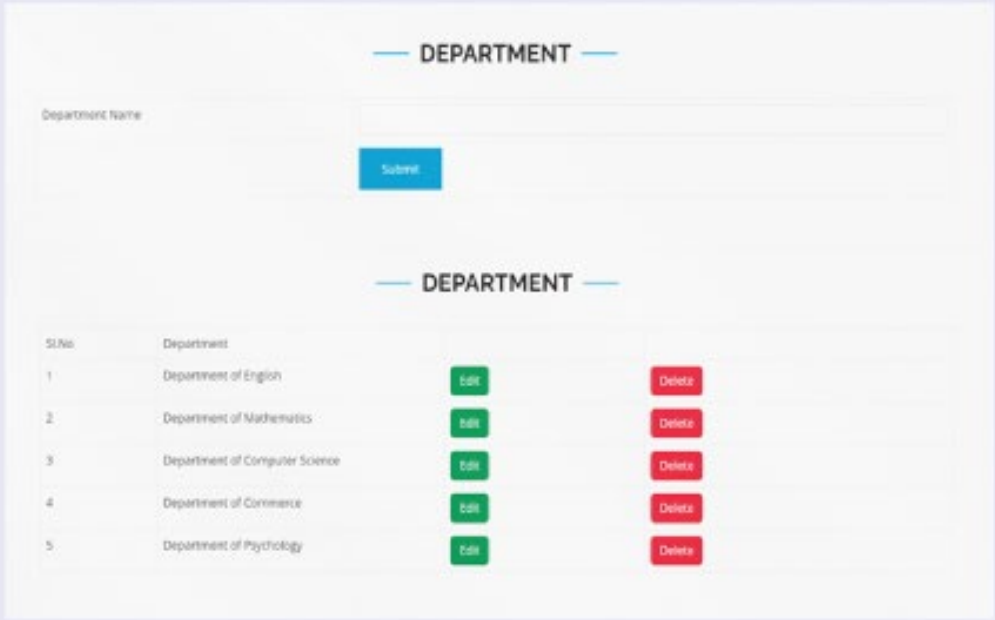
Logout
Unlock Your Potential with Intelligent Education Tools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Edit
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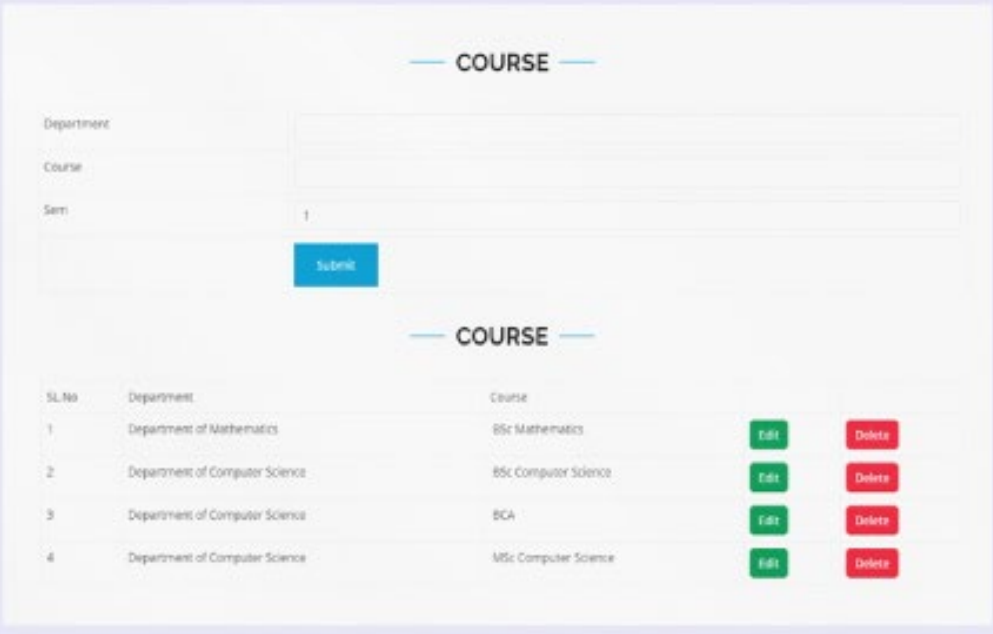
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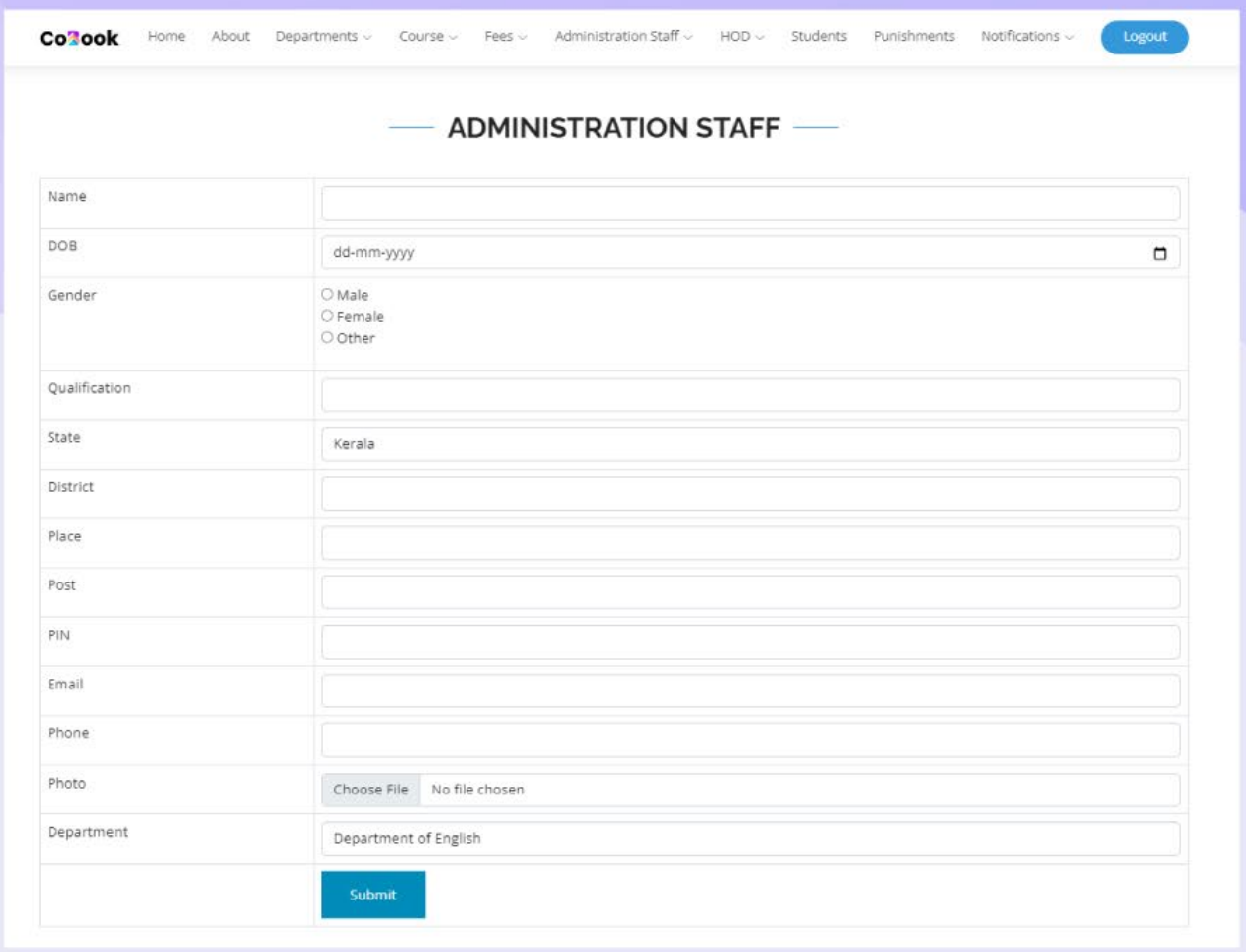
CoBook
Home
About
Departments
Course
Fees
Administration Staff
HOD
Students
Punishments
Notifications
Logout
ADMINISTRATION STAFF
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dd-mm-yyyy
Gender
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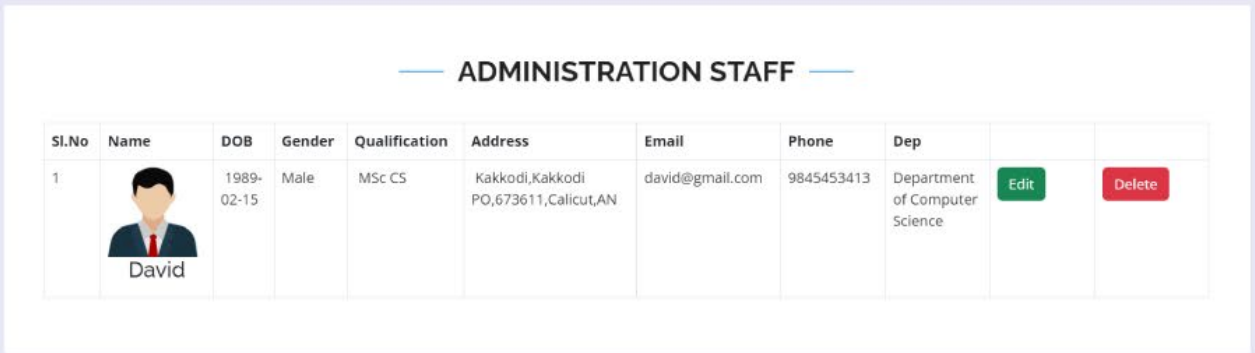
ADMINISTRATION STAFF
Sl.No
Name
DOB
Gender
Qualification
Address
Email
Phone
Dep
1
David
1989-02-15
Male
MSc CS
Kakkodi,Kakkodi PO,673611,Calicut,AN
david@gmail.com
9845453413
Department of Computer Science
Edit
Delete

CoBook Home About Departments Course Fees Administration Staff HOD Students Punishments Notifications Logout

HOD

Name	
DOB	dd-mm-yyyy
Gender	○ Male ○ Female ○ Other
Qualification	select
State	Kerala
District	
Place	
Post	
PIN	
Email	
Phone	
Photo	Choose File No file chosen
Department	Department of English
	Submit

HOD

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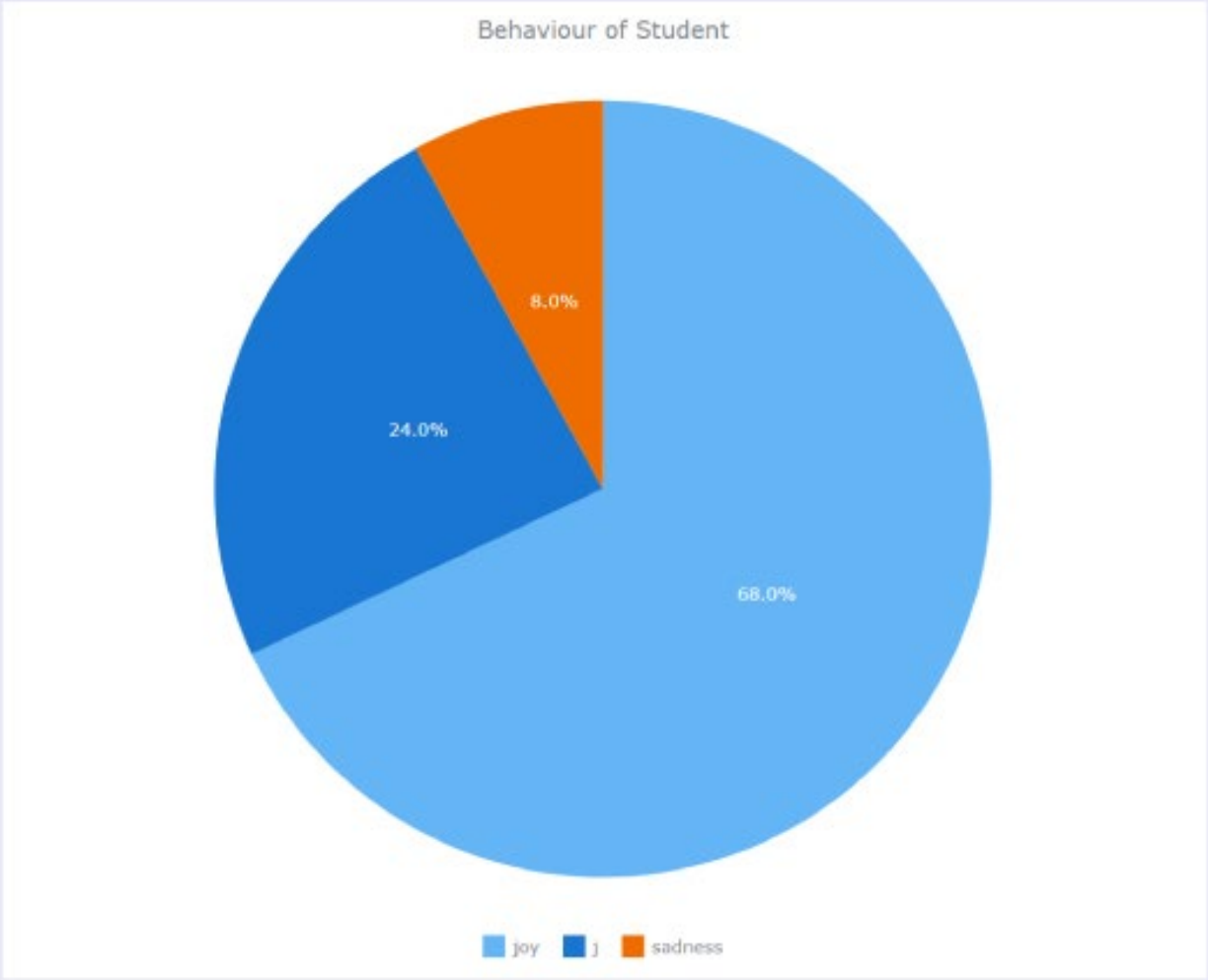
1	 Rahul	1987-03-12	Male	select	Nadakkavu,Nadakkavu PO,673612,Kozikode,AN	rahul@gmail.com	8945773322	Department of Computer Science	Edit	Delete

STUDENTS

Sl.No	Name	DOB	Gender	Address	Email	Phone	Sem	Course ID		
1	 Vimal Manoj	2023-01-19	Male	Kakkodi, Kakkodi PO, 673611, Calicut, AN	vimalkmanoj@gmail.com	8593991248	1	MSc Computer Science	Behaviour	MentalStress
2	 Aswathi	2003-03-17	Female	Kakkodi, kakkodi, 673611, calicut, AN	aswathiki882@gmail.com	123456789	1	MSc Computer Science	Behaviour	MentalStress



David
Administration Staff

Profile Details

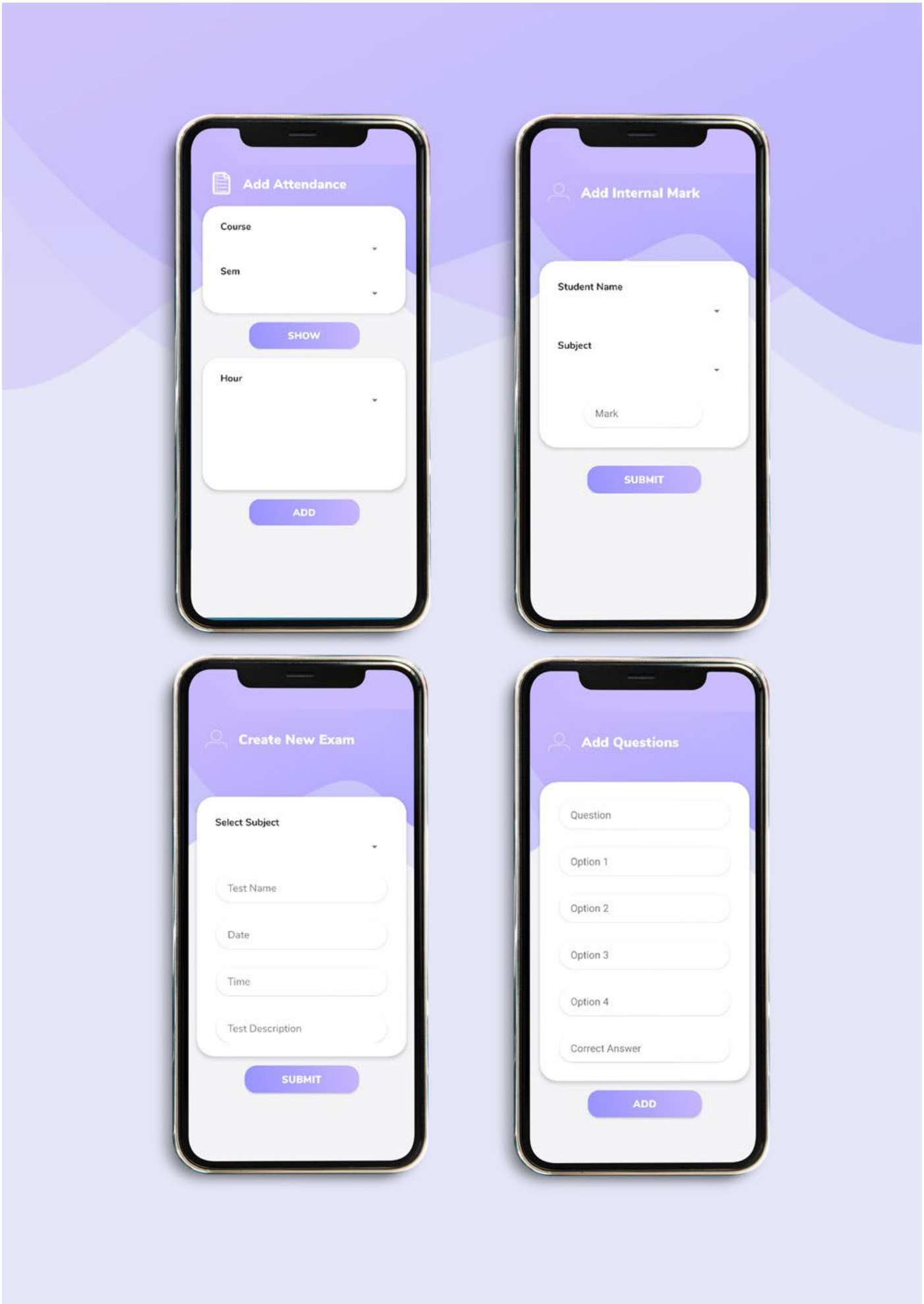
Full Name	David
Date Of Birth	1989-02-15
Job	Administrative assistants
State	AN
Address	Kakkodi,Kakkodi PO, 673611,Calicut
Phone	9845453413
Email	david@gmail.com

SUBJECT ALLOCATION

Course	MSc Computer Science
Sem	1
Subject	Python
Staff	Shidila
	Allocate

SUBJECTS

Course	BSc Computer Science
Sem	1
Subject Name	
	Allocate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Sem
SHOW
Hour
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Subject
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Date
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Option 2
Option 3
Option 4
Correct Answer
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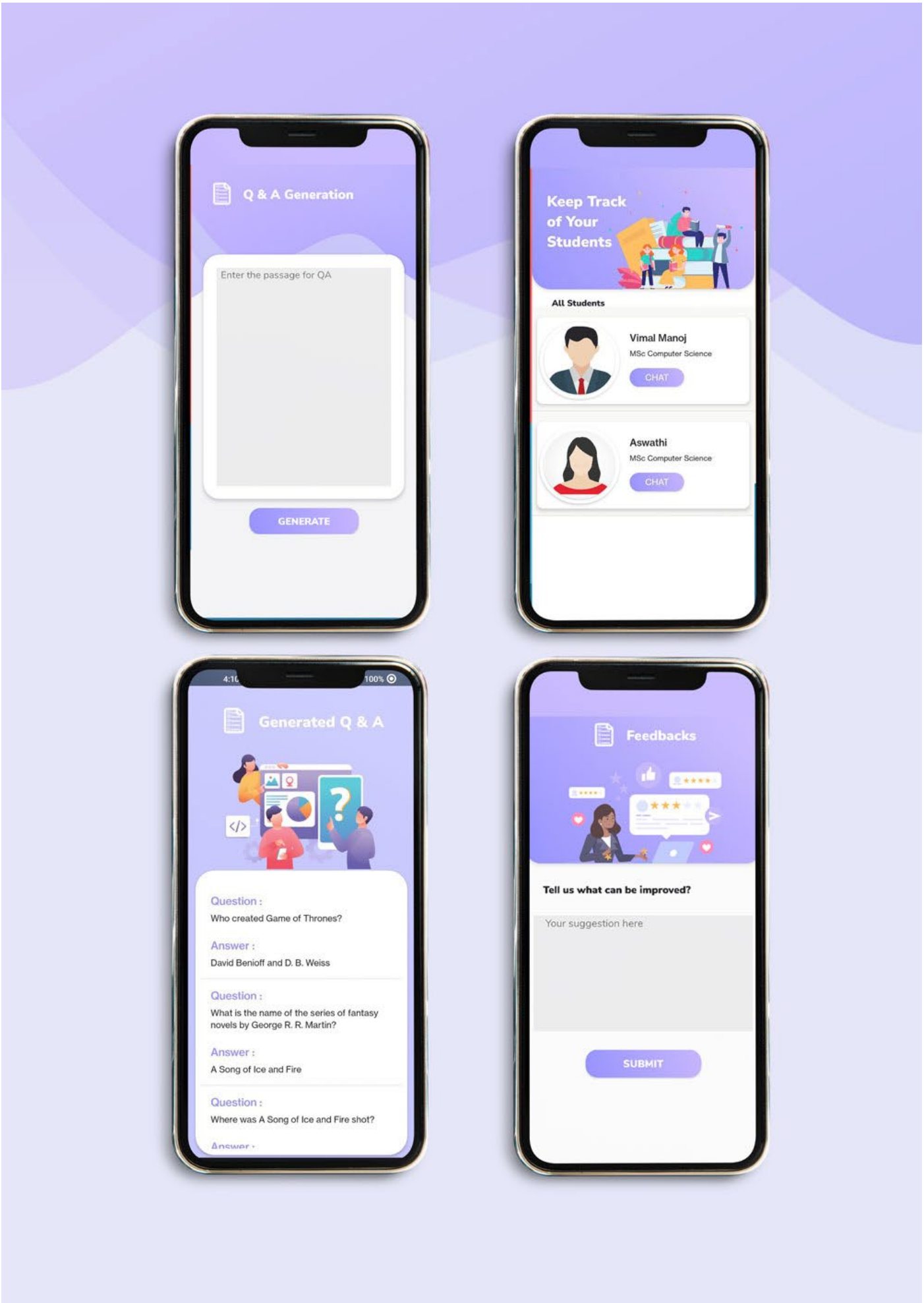
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GENERATE
Keep Track of Your Students
All Students
Vimal Manoj
MSc Computer Science
CHAT
Aswathi
MSc Computer Science
CHAT
Generated Q & A
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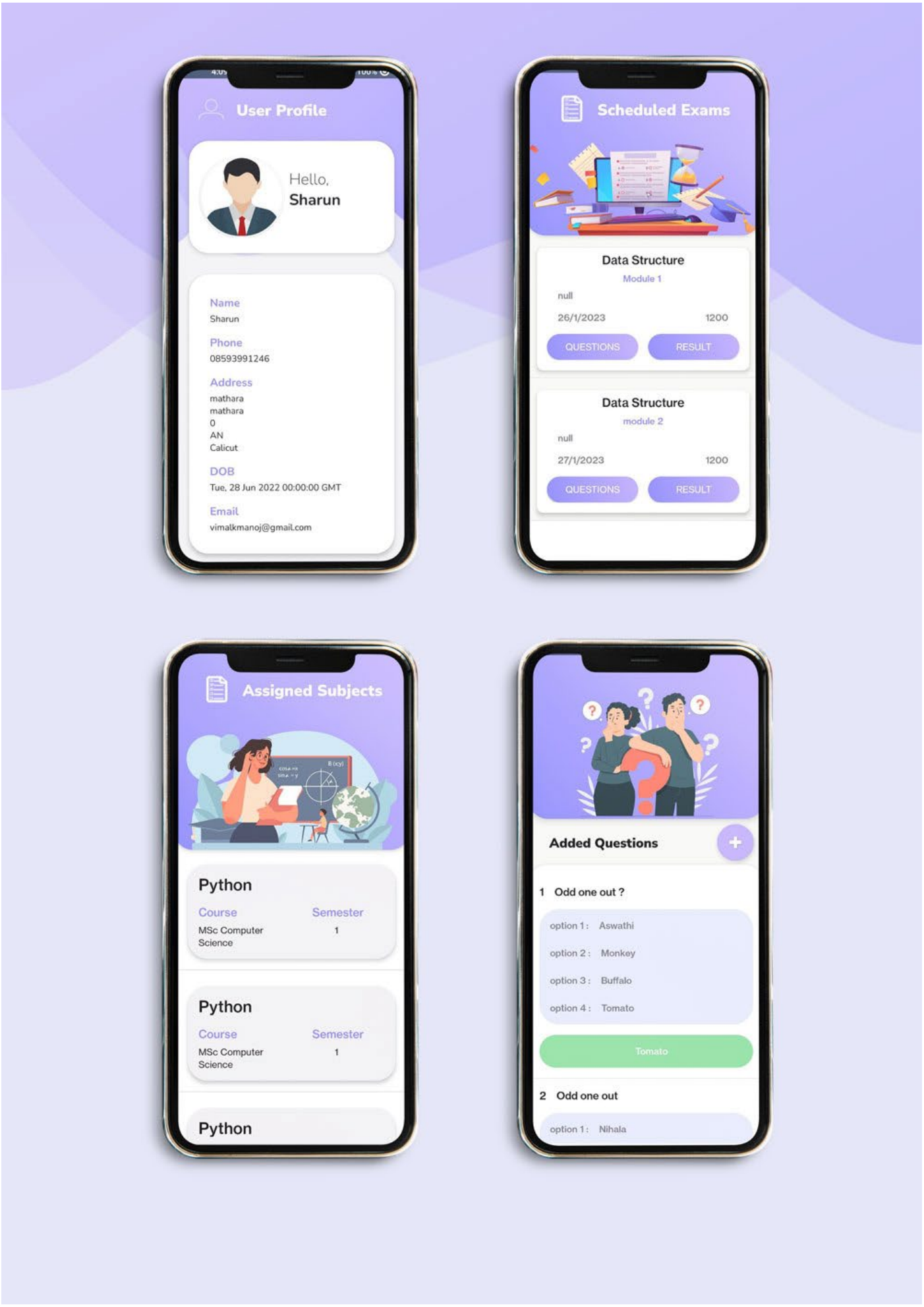
Who created Game of Thrones?
Answer :
David Benioff and D. B. Weiss
Question :
What is the name of the series of fantasy novels by George R. R. Martin?
Answer :
A Song of Ice and Fire
Question :
Where was A Song of Ice and Fire shot?
Feedbacks
Tell us what can be improved?
Your suggestion here
SUBMIT


User Profile
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module 2
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Python
Course
Semester
MSc Computer Science
1
Python
Added Questions
1 Odd one out ?
option 1 : Aswathi
option 2 : Monkey
option 3 : Buffalo
option 4 : Tomato
Tomato
2 Odd one out
option 1 : Nihala