MOBILE APPLICATION DEVELOPMENT

Software Requirment Specification

Ministry of Youth Affairs & Skills Development

Vocational Training Authority

NVQ 5 in ICT

	Android App for VTA(SRS)																			
Group Number																				
Student Name-1	A	Y	A	G	M	A		W	A	H	U	M	P	R	A	L	A	G	E	
	P	A	S	I	N	D	U		D	H	A	N	A	N	J	A	Y	A		
MIS No	Q	P	/	2	2	/	I	C	T	5	/	1	/	0	0	2	8			
Student Name-2	K	E	N	D	E	L	P	I	T	I	Y	G	E		K	A	W	E	E	S
	H	A		P	R	A	S	A	N	N	A		P	E	R	E	R	A		
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Student Name-3	J	A	Y	A	K	O	D	I		A	R	A	C	H	C	H	I	G	E	
	C	H	A	T	H	U	R	A		M	A	D	U	S	H	A	N			
MIS No	Q	P	/	2	2	/	I	C	T	5	/	1	/	0	0	0	6			
Student Name-4	T	H	N	N	A	M	U	R	A		A	R	A	C	H	C	H	I	G	E
	T	H	I	W	A	N	S	H	I	K	A		I	S	U	R	U	N	I	
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Centre Name	VTC- HORANA																			
Supervisor Name	Mrs. N.C.I NAWAGAMUWA																			
	Miss.G.L.G.M.R.De.Silva																			

Contents

01.Introduction

1.1 Purpose of the document

1. Requirement Definition: The SRS document outlines the detailed requirements of the app, including functionalities, features, and user interactions. It serves as a blueprint that clearly defines what the app should accomplish and how it should behave. This helps ensure that the development team understands the client's needs and expectations accurately.
2. Scope Management: The SRS helps in managing the scope of the project. It clearly defines the boundaries and limitations of the app's functionalities, ensuring that the development team stays focused on delivering the desired features. The SRS acts as a reference point to determine if requested changes or additions fall within the project's scope.
3. Communication and Collaboration: The SRS serves as a communication bridge between the development team, stakeholders, and clients. It facilitates effective communication by providing a common understanding of the app's requirements, functionalities, and constraints. The SRS document becomes a reference point for discussions and feedback, allowing stakeholders to provide input and clarify their expectations.
4. Development Guidance: The SRS guides the development team throughout the app development process. It acts as a reference for designers, developers, and testers, helping them understand the app's functionality and ensuring that all the necessary features are implemented. The SRS document helps maintain consistency and alignment across the development team.
5. Quality Assurance: The SRS plays a crucial role in quality assurance. It defines the acceptance criteria for the app and serves as a basis for testing and validation. The SRS document allows the quality assurance team to verify that the app meets the specified requirements and functions as intended. It helps in identifying deviations and ensures that the app delivers the expected outcomes.

1.2 Introduction (Vocational Training Authority App)

The system we have developed is designed to provide users with comprehensive information about various courses, course centers, and easy registration options. It aims to streamline the process of accessing course details and simplifying the registration process for interested individuals. Additionally, the system offers a summary of all available courses, allowing users to get a quick overview of the offerings.

By leveraging this system, users can efficiently explore different courses and gather essential information such as course descriptions, schedules, prerequisites, instructors, and any other relevant details. They can also access information about course centers, including their locations, facilities, and contact information.

One of the primary features of the system is its user-friendly registration process. It simplifies the enrollment process by providing a seamless and efficient way for users to register for their desired courses. Whether it's an online registration form or a dedicated portal, the system ensures a hassle-free experience for users, enabling them to quickly secure their spot in the courses they wish to attend.

Allowing users to get an overview of the entire course catalog at a glance. This feature facilitates better decision-making by providing a consolidated view of the courses, their durations, and any other pertinent information that might assist users in selecting the most suitable options for their needs.

Overall, our system aims to provide a convenient and user-friendly platform for individuals to access course details, course center information, and easily register for their preferred courses. It streamlines the process, saving time and effort for both users and administrators, and ultimately enhancing the overall experience of exploring and enrolling in courses.

1.3 Background of the Project

The background of the project related to VTA (Vocational Training Authority Kaluthara District) involves the context and motivation behind the development of the system for managing course details, course center information, registration, and course summaries. Here is the background information:

The background of the project lies in the need to address the challenges faced by individuals seeking course information, course center details, and a simplified registration process. Traditional methods of accessing course details and registering for courses often involve manual processes, lengthy procedures, and limited accessibility. This project was initiated to develop a system that would leverage technology to provide a more efficient and user-friendly experience for individuals seeking course-related information.

The project team recognized the increasing demand for easily accessible course details, course center information, and streamlined registration processes. They identified the need to consolidate these aspects into a centralized system that would simplify the search for courses, provide comprehensive information, and enable individuals to register for courses effortlessly.

Furthermore, the team considered the importance of offering a summary of all available courses. This feature was incorporated to provide users with a convenient overview of the course offerings, allowing them to quickly evaluate and compare different options.

The project aimed to bridge the gap between course providers and individuals seeking quality education and training opportunities by creating a centralized system. By leveraging technology, the team aimed to enhance accessibility, improve the efficiency of the registration process, and provide users with a user-friendly platform for exploring and enrolling in courses.

1.4 Problem Statement

Many individuals seeking education and training opportunities face challenges in accessing course details, course center information, and registering for courses.

- Existing methods are often inefficient,
- time-consuming,
- lack user-friendliness,
- There is a need for a centralized system that simplifies the process of accessing course information, provides comprehensive details about course centers, and offers an easy and streamlined registration experience.
- There is a lack of a consolidated overview of all available courses, making it difficult for individuals to evaluate and compare different options. These challenges hinder the ability of learners to make informed decisions and enroll in courses that align with their needs and interests.
- There is a lack of a consolidated overview of all available courses,
- The system should offer a centralized repository of course details, including descriptions, schedules, prerequisites, and instructor information.
- It should also incorporate comprehensive information about course centers, including location, facilities, and contact details.
- The system should simplify the registration process, enabling users to easily enroll in their desired courses.

Therefore, there is a need to develop a system that addresses these issues by providing a user-friendly platform with course details, course center information, simplified registration, and a summary of all available courses.

1.5 Definitions, Acronyms and Abbreviations

1.5.1 Definitions

System: The project aimed to bridge the gap between course providers and individuals seeking quality education and training opportunities by creating a centralized system.

Database: database is a collection of data and information organized and stored in an electronic format. Here we called firebase database system as the database system, which is used to store students submit ion information and teacher login information in the system.

1.5.2 Acronyms and Abbreviations

- ✓ SRS: Software requirement Specification
- ✓ GUI: Graphical user interface
- ✓ RAM: Random access Memory
- ✓ PC: Personal Computer
- ✓ PDF: Portable Document Format
- ✓ UML: Unified Modeling Language

1.6 Proposed Solution/ Scope

Proposed Solution:

The system will leverage technology to streamline the process, enhance accessibility, and improve the overall user experience for individuals seeking education and training opportunities.

Scope:

1. Course Details Management:
   Information will be easily accessible to users through a user-friendly interface.

2. Course Center Information:
   Users will have the ability to explore and evaluate different course centers based on their preferences and requirements.

3. Easy Registration Process:
   The system will offer a simplified and efficient registration process for users to enroll in their desired courses.

4. Summary of All Courses:
   The system will provide a summary or overview of all available courses, allowing users to get a consolidated view of the course catalog.

5. User-Friendly Interface:
   The system will have a user-friendly interface that is intuitive and easy to navigate.

6. Scalability:
   It will be designed to handle increased traffic and data volume without compromising performance.

7. Collaboration with Course Providers:
   This will ensure that the course details are up-to-date and accurate, providing users with the most relevant information.

8. Continuous Improvement:
   The system will undergo continuous improvement based on user feedback and testing.

02.General Characteristics

2.1 Product Perspective

1. Users are given detailed information on a variety of courses and course centers through the system. It seeks to serve as a central hub where users can obtain comprehensive course descriptions, schedules, prerequisites, teachers, locations, facilities, and contact details of training centers.
2. Streamlined Access: The system attempts to make it easier for interested people to access information about courses and register for them. It does away with the necessity for consumers to hunt through several sources for information and offers a user-friendly interface for quick study of various courses.
3. Easy Registration: The system provides a user-friendly registration process that makes it simple for people to sign up for the courses they want. Through an online registration form or a dedicated site, it offers users a simple and effective way to reserve their place in the classes they want to take.
4. Savings in Time and Effort: The system is designed to help users and administrators save time and effort. It improves the whole experience of looking through and enrolling in courses by centralizing information and offering streamlined procedures, making it more convenient for users and lowering administrative burdens.
5. Overview of the course catalog: Using the system, users can quickly view the whole course catalog. By giving consumers a unified picture of the courses, their lengths, and other pertinent information, this feature aids in their decision-making and enables them to choose the solutions that are most suited to their requirements.

2.2 Product features.

Class of use cases	Class of use cases Use case	Description of Use case
Use cases related to system authorization	Login	Log into 'VTA APP'
Use cases related to gathering data	uploading submission details	Uploaded application data is stored in a database for admin use.
Use cases related to viewing information	• Viewing course details • Viewing center details • view home page details	The processed data in the system database can be viewed by users on their own prefer.
Use cases related to course filtering	Customize filtering	This provides facility of filtering courses regarding a subject matter on user's prefer.

2.3 User Characteristics

User Class	User	Characteristics
Teacher	Teacher/ admin	• View submission information records. • No need to have any additional technical knowledge.
Student	Student	• apply needed course • fill and submit submission form • No need to have any additional technical knowledge to get services from the system.

2.4 Operating Environment

1. Online Platform: The system is designed to be accessed and operated through an online platform. Users can access the system using internet-connected devices such as computers, laptops, tablets, or smartphones.
2. Web-Based Interface: The system likely utilizes a web-based interface, allowing users to interact with the system through a web browser.
3. Internet Connectivity: The system requires a stable internet connection for users to access course information, course center details, and register for courses. Users should have reliable internet access to interact with the system seamlessly.
4. Database Management: The system likely utilizes a database management system to store and retrieve course information, user data, and registration details. The specific database management system used will depend on the implementation of the system.

2.5 General Constraints, Assumptions and Dependencies

2.5.1 General Constraints

1. 'VTA' operates as a mobile-based information system. Therefore, having a mobile phone is a need for the user.
2. Additionally, in order to access the system and submit an application, user phones must have internet capabilities.

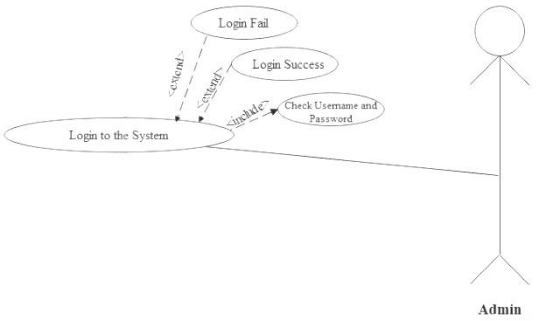
2.5.2. Assumptions and Dependencies

1. The system's application process requires an internet connection because it is a mobile-based solution.
2. The client phone's network connection speed and device configuration determine the data upload speed.
3. To access the system and allow students to upload the application, we presume that teachers and administrators have internet connection.
4. Let's test this system with Android 13 first. Therefore, we presume that users will be using an Android version that supports the functionalities of the app. because many folks now own modern smartphones.

03. System Features

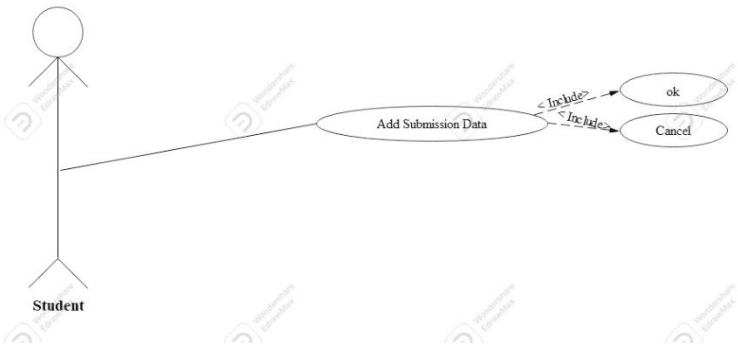
3.1. Functional Requirements

3.1.2 Login



Actors: Teacher
Main Flow - Give user name and password, then log into the system.
Sub Flow - Any user who wants to log as a teacher in the system must have a correct user email and password.
Alternate Process - If user enters wrong user name or password redirect to the login page again.

3.1.2 Add Submission Details



Actors: User Student
Main Flow - Send the submission form data to firebase database.
Sub Flow - show popup message and ask the filling information is correct or not.
Alternative Process - User click ok button data is send to the data base. But user click the back button redirect the submission form again.

3.2. Non – Functional Requirements

3.2.1 Performance Requirements

The "VTA App" system is exclusively web-based.

Therefore, rather of using a mobile device or an internet connection, one needs download the application from the Play Store in order to access this system.

Users must concurrently activate the same page and have access to the system from any location.

3.2.2 Safety Requirements

The system is managing a database that is quite vast. Additionally, the data is often updated. Data should therefore always be secure and accessible.

The data should only be accessible to the administrator after a user submits the application.

3.2.3Security Requirements

As this application displays the course data as well as other data, the data given by the system should be extremely accurate. Additionally, the applied student applications should only be under the teacher's supervision.

Password-protected access will be used to define user logins, and access violations will be reported to the system administrator.

Password strength and length requirements will be verified.

3.2.4 Reliability Requirements

Users should be able to use the system anytime they require access to information about courses, course centers, and registration alternatives. During the registration process, the system should guarantee the security of user transactions. To safeguard sensitive user data and stop illegal access or data breaches, it should use encryption techniques and secure communication routes.

3.2.5 Interoperability Requirements

Interoperability requirements occur because this system must communicate with the other system that is being constructed concurrently. Prior to implementation, agreements will be conducted with the other system development team in order to take the necessary measures.

3.3 Other Requirements

3.3.1 External Interface Requirements
User Interface

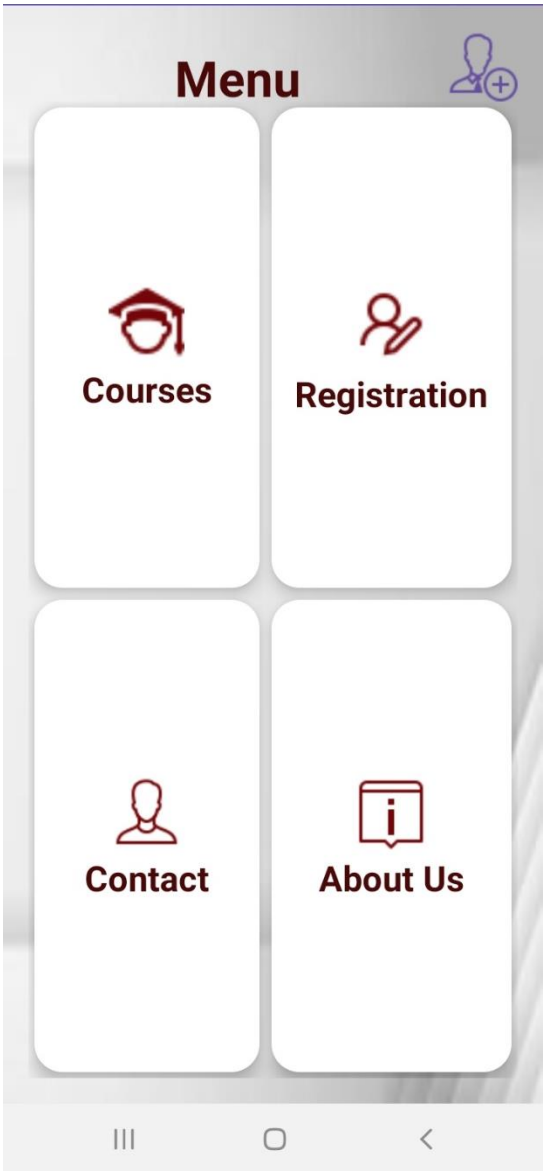
Functional description of user interfaces is used by system users and it describes the levels of users who are going to use those interfaces.

Start Interface

User can click the start button then user can see menu interface.

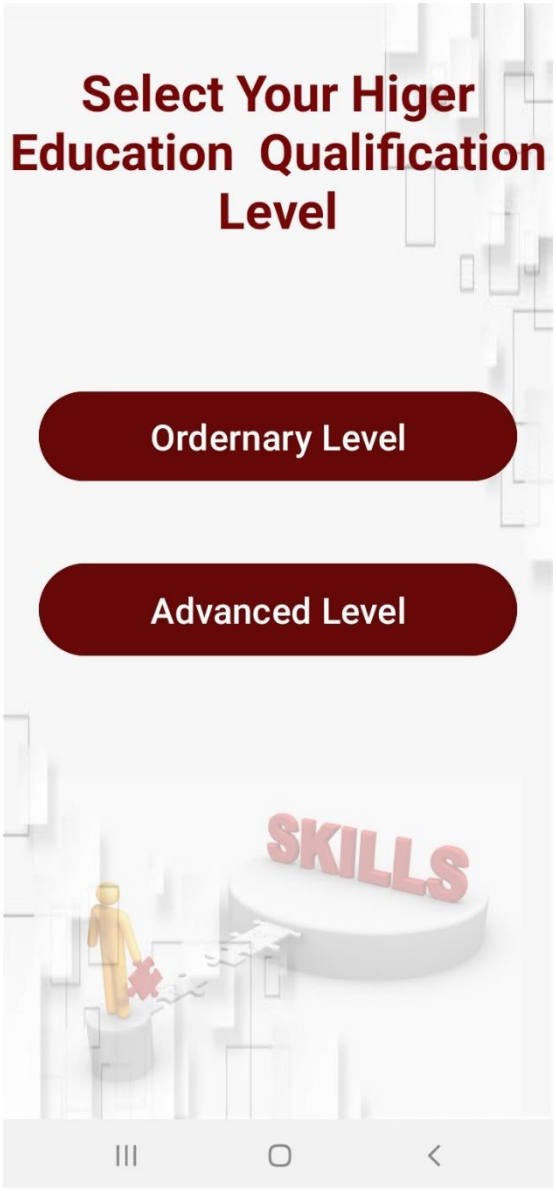
Users of the interface: - All registered and unregistered/back end and front end users.

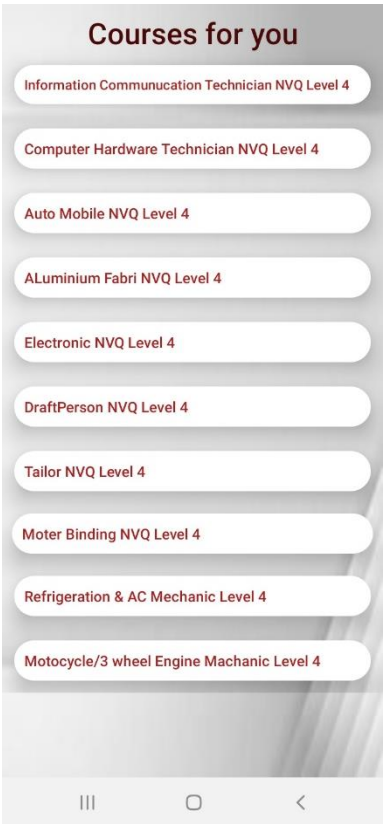
Menu Interface

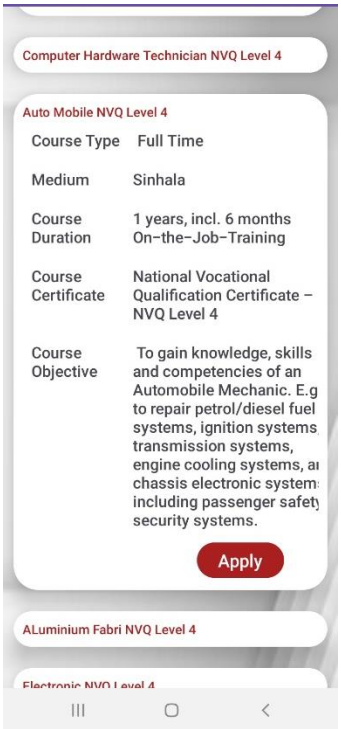


- ✓ User can see the Menu interface four categories
  - Courses
  - Registration
  - Contact
  - About Us
- ✓ Users of the interface: - All registered and unregistered/back end and front end users.

Coursers Interface

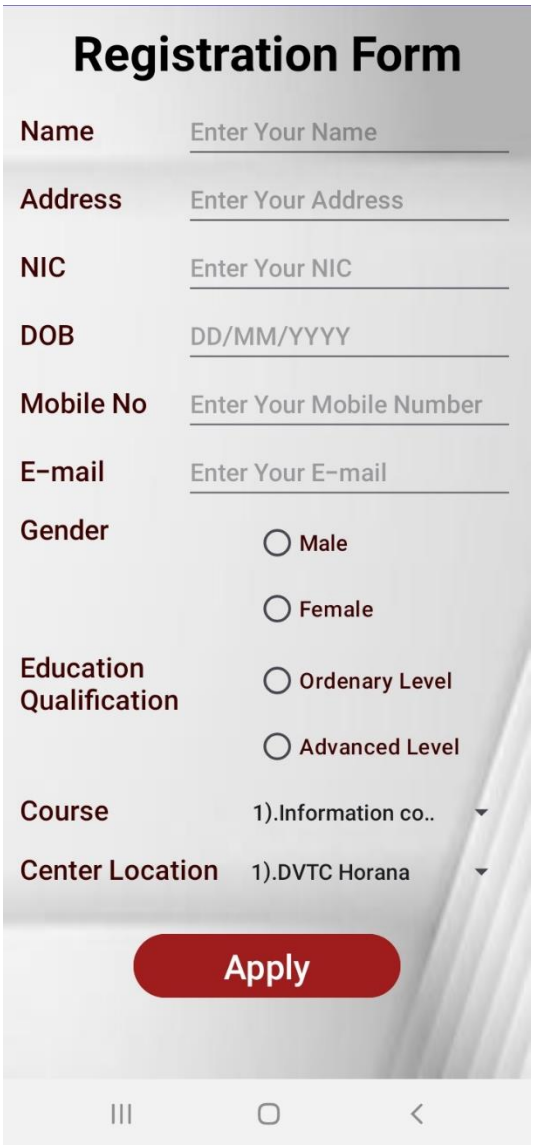






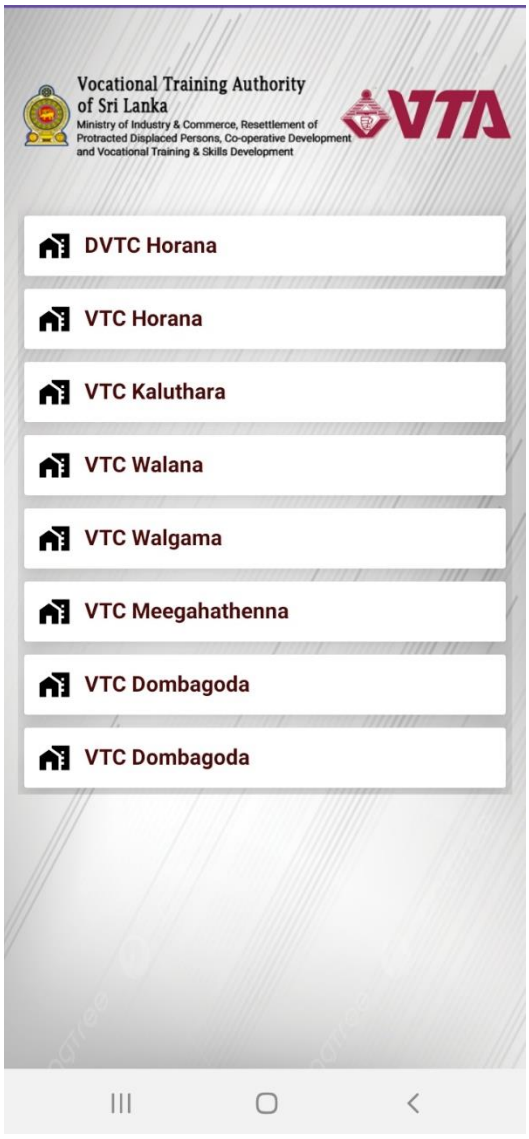
- ✓ User select the courses tab then we open next page in select the education level (Ordinary level or Advanced Level)
- ✓ After then user can see Coursers list.
- ✓ After user choose the course then user can see above course details.
- ✓ Then user click apply button loading the registration interface.
- ✓ Users of the interface: - All registered and unregistered/back end and front end users.

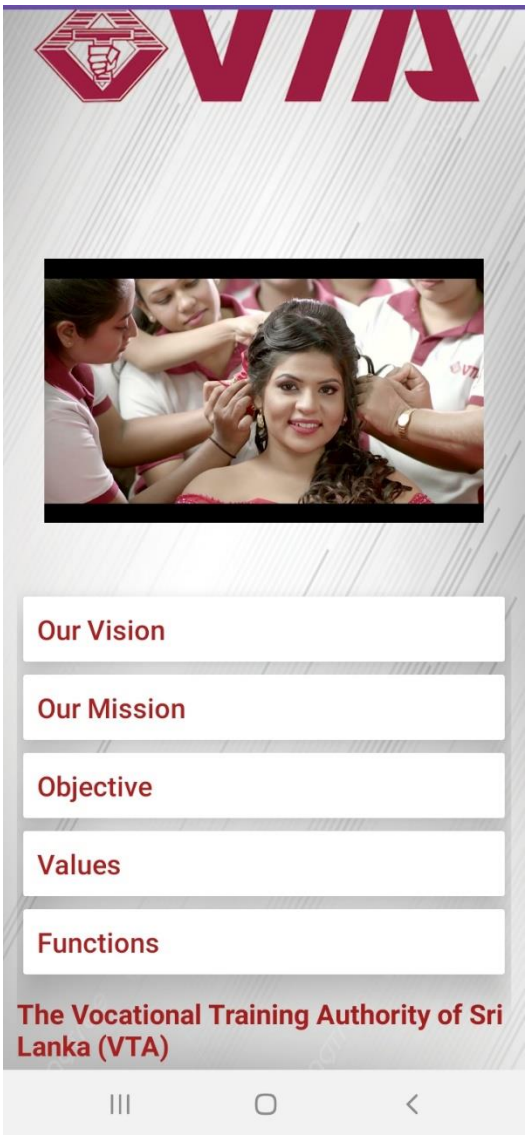
Registration Interface



- ✓ Fill the details and after user can click the apply button user can register the course.
- ✓ Users of the interface: - All registered and unregistered/back end and front end users.

Contact Interface and About Interface



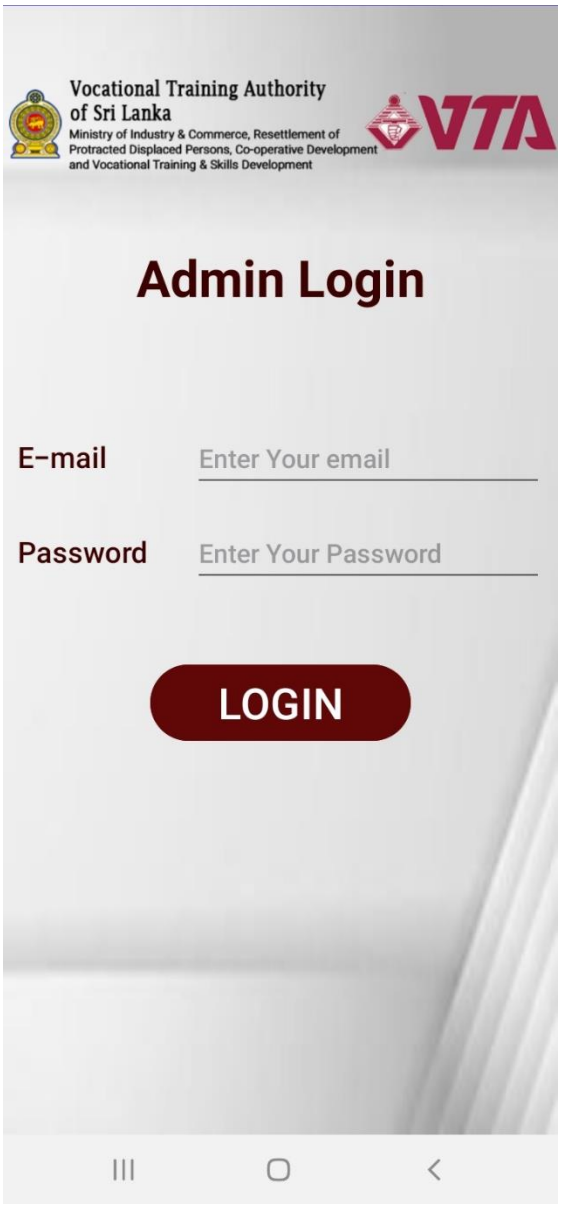


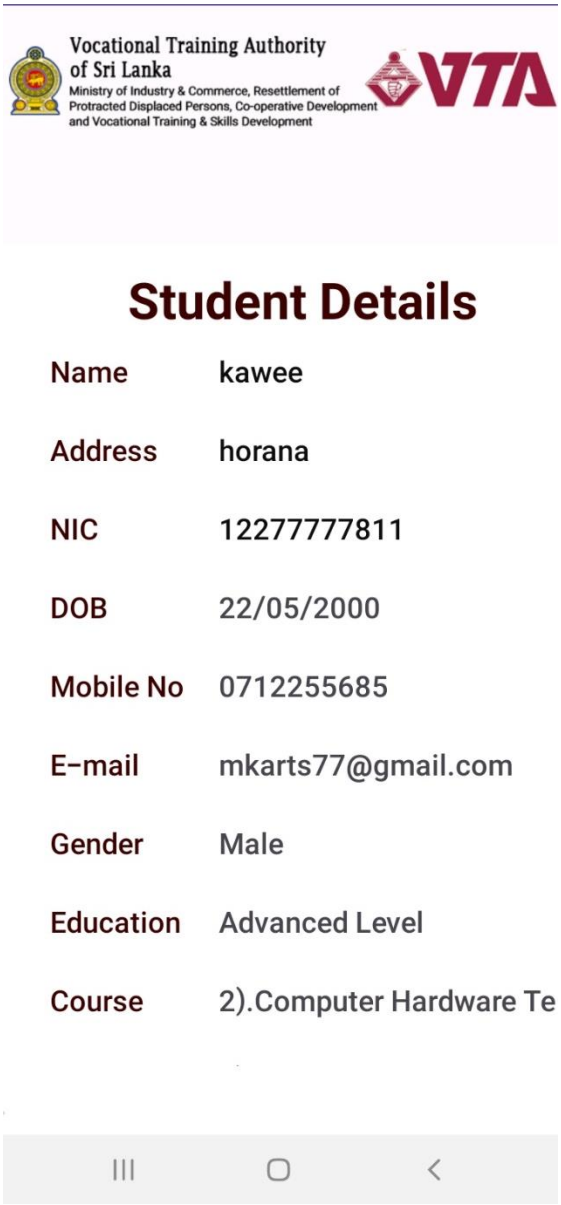
- ✓ Contact page

  User can see centers details
- ✓ About us page

  User can see VTA Vision, Mission etc..
- ✓ Users of the interface: - All registered and unregistered/back end and front end users.

Admin Interfaces





- ✓ Select the menu and click the Admin icon, admin enter the email and password then he can click the login button he can view student details page.
- ✓ Users of the interface: - All registered and unregistered/back end and front end users.

3.3.2 Hardware Requirements

1. Mobile Device:

   Smartphone or Tablet running a supported Operating System.

2. Storage Space:

   Sufficient storage space to store course details, course center information, user data, and any other relevant information.

3. Network Infrastructure:

   A stable and reliable network infrastructure to ensure seamless connectivity between the server and user devices.

3.3.3 Software Requirements

1. Operating System:

   The choice of the operating system will depend on the technical preferences and requirements of the project team.

2. App Store Account:

   You might need an account with the respective app store (ex: Google Play Store) to download and install the Mobile App.

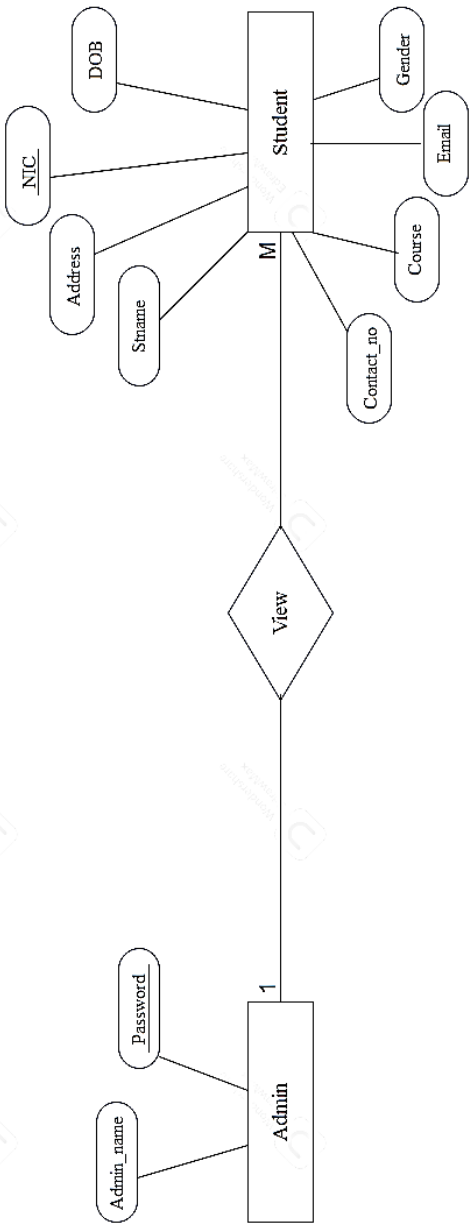
3. Updates:

   Ensure that your device's operating system and the mobile app are up to date to access the latest features and security patches.

04.Appendix

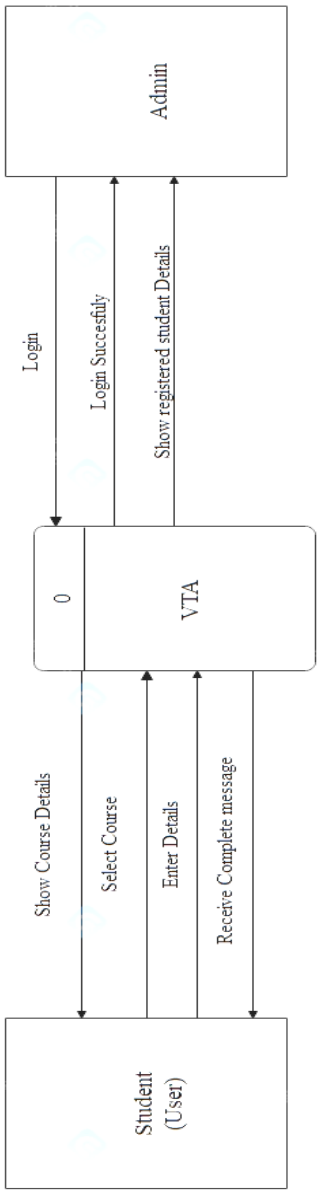
4.1 ER Diagram

An entity-relationship (ER) diagram is a visual representation of the entities (objects), their attributes, and the relationships between them within a system. In the context of a mobile app with user and admin roles, and features like student registration, course selection, and admin data retrieval, an ER diagram can help illustrate the entities involved and their relationships. Let's break down the description into four main entities: User, Student, Admin, and Course.



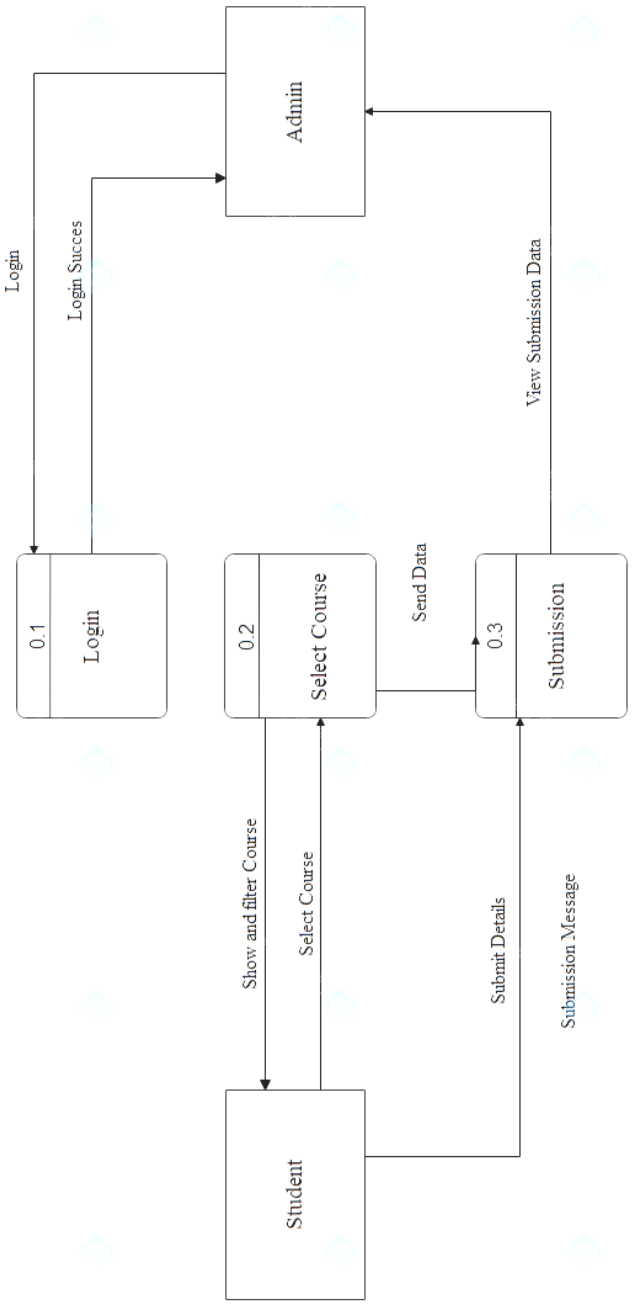
4.2 Context Diagram

A context diagram is a high-level diagram that depicts the interactions between a system (in this case, a mobile app) and its external entities. It provides an overview of the system's boundaries and the flow of information between the system and its environment. In the context of a mobile app with user and admin roles, student registration, course selection, and admin data retrieval, the context diagram can help illustrate these interactions. Let's describe the context diagram for this scenario.



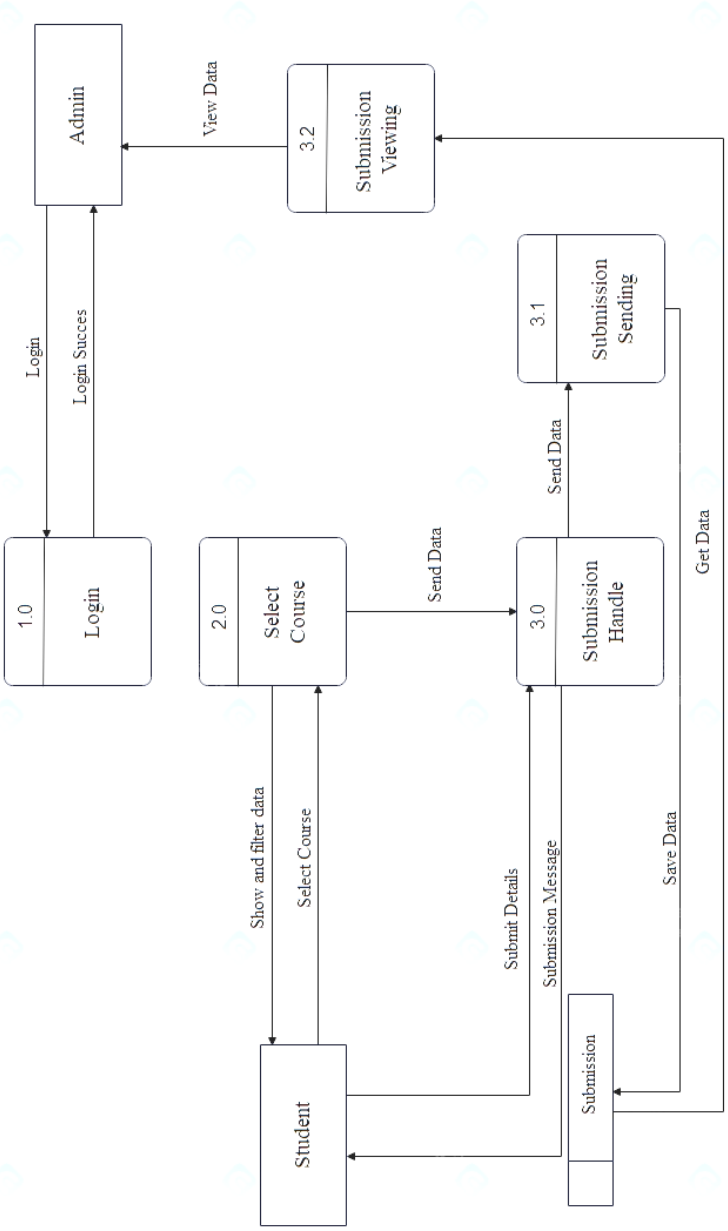
4.3 Level 0 Diagram

A Level 0 Data Flow Diagram (DFD) provides a more detailed view of the processes and data flows within a system. In the context of a mobile app with user and admin roles, student registration, course selection, and admin data retrieval, the Level 0 DFD can help illustrate the specific processes and data flows involved. Let's describe the Level 0 DFD for this scenario.



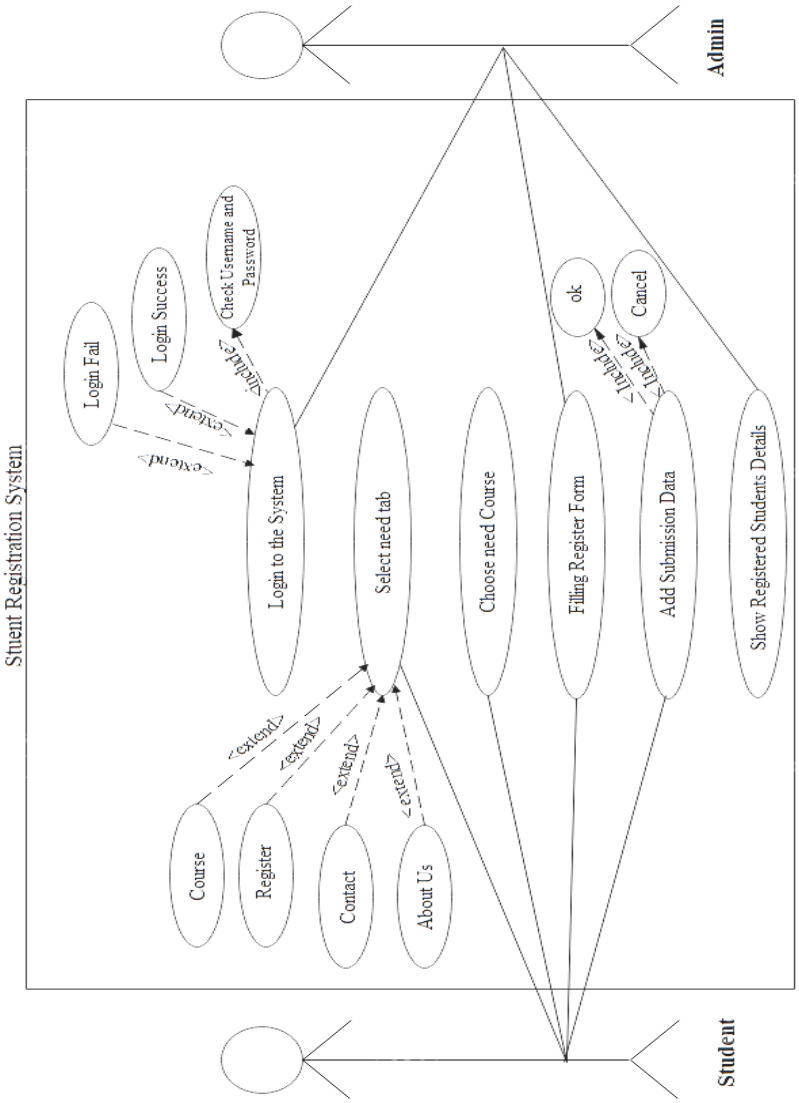
4.4 Level 1 (DFD) Diagram

A Level 1 Data Flow Diagram (DFD) provides a more detailed view of the processes and data flows within a system. In the context of a mobile app with user and admin roles, student registration, course selection, and admin data retrieval, the Level 1 DFD can help illustrate the specific processes and data flows involved. Let's describe the Level 1 DFD for this scenario.



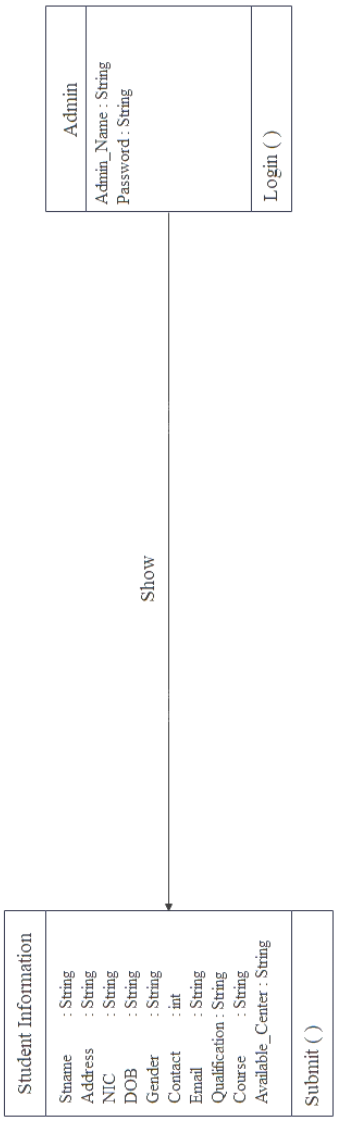
4.5 Use Case Diagram

Here's a description of the class diagram for a mobile app with user and admin roles, where students can register, enter their details, and select courses, while admins can log in to retrieve data entered by students:

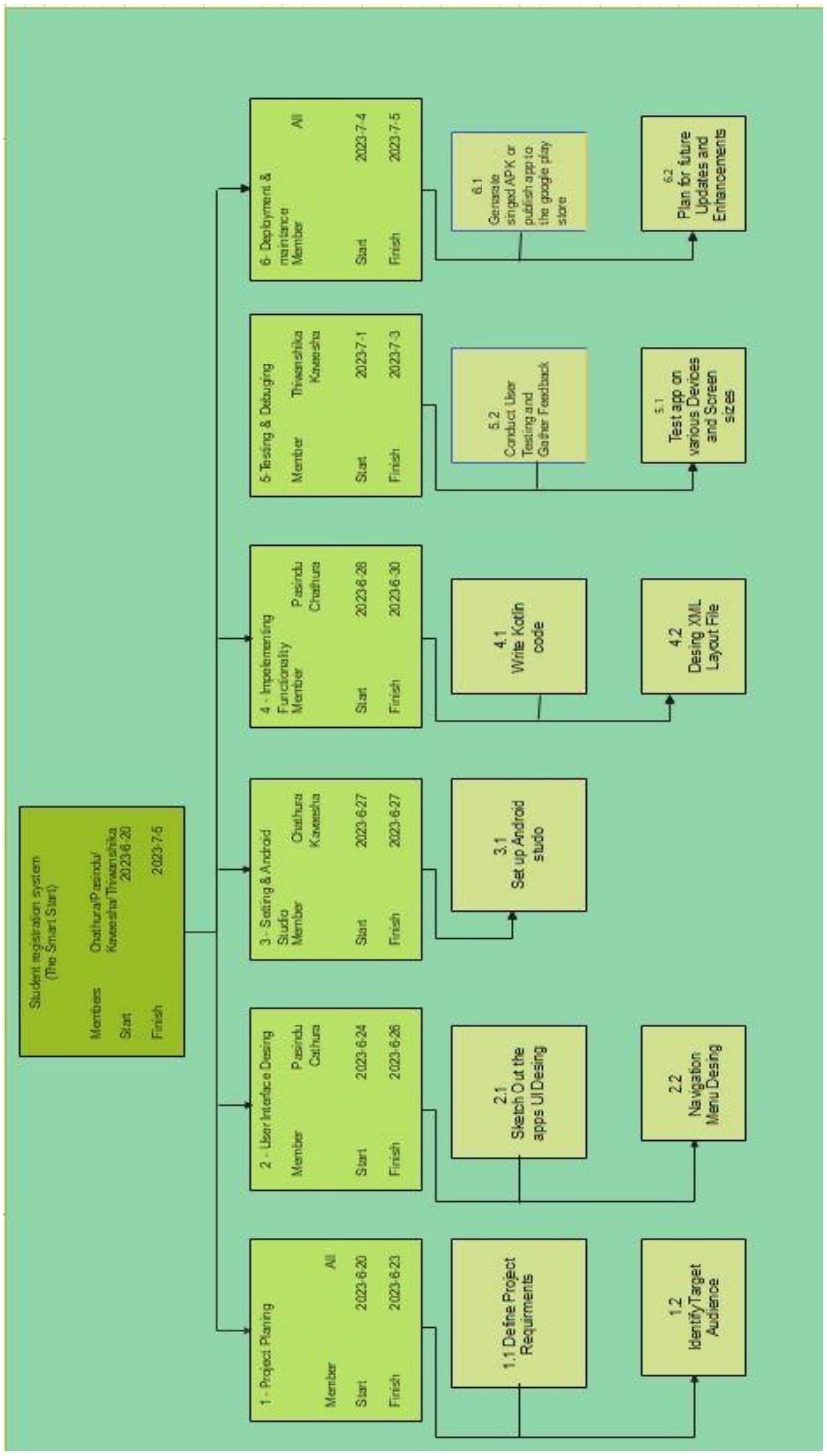


4.6 Class Diagram

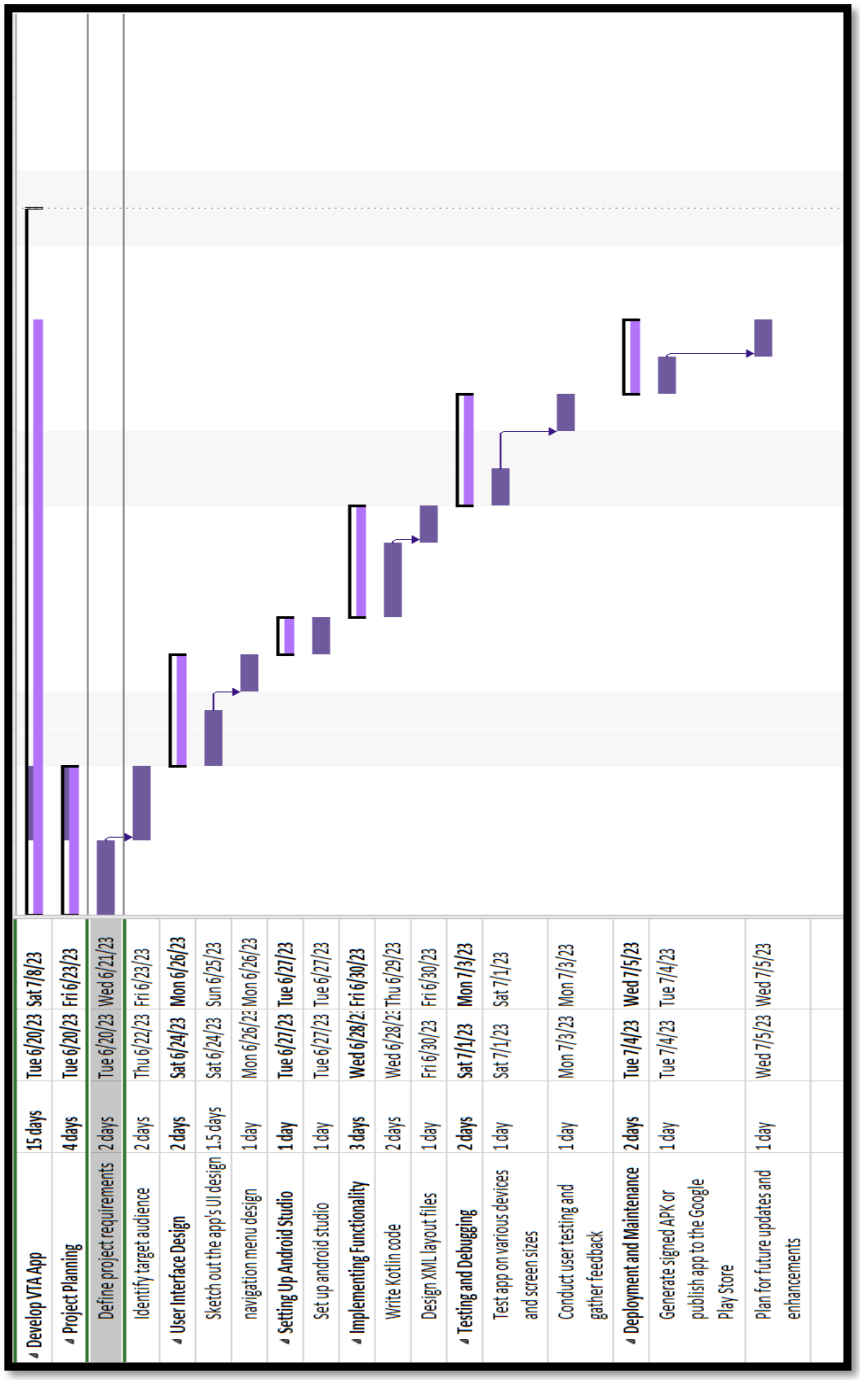
A class diagram is a visual representation of the structure and relationships among classes in a system. In the context of a mobile app with user and admin roles, and features like student registration, course selection, and admin data retrieval, the class diagram can help illustrate the classes involved and their associations. Let's break down the description into three main classes: User, Student, and Admin.



05. Work Brake down Structure



05.Grant Chart



Develop VTA App	15 days	Tue 6/20/23	Sat 7/8/23
Project Planning	4 days	Tue 6/20/23	Fri 6/23/23
Define project requirements	2 days	Tue 6/20/23	Wed 6/21/23
Identify target audience	2 days	Thu 6/22/23	Fri 6/23/23
User Interface Design	2 days	Sat 6/24/23	Mon 6/26/23
Sketch out the app's UI design	1.5 days	Sat 6/24/23	Sun 6/25/23
navigation menu design	1 day	Mon 6/26/23	Mon 6/26/23
Setting Up Android Studio	1 day	Tue 6/27/23	Tue 6/27/23
Set up android studio	1 day	Tue 6/27/23	Tue 6/27/23
Implementing Functionality	3 days	Wed 6/28/23	Fri 6/30/23
Write Kotlin code	2 days	Wed 6/28/23	Thu 6/29/23
Design XML layout files	1 day	Fri 6/30/23	Fri 6/30/23
Testing and Debugging	2 days	Sat 7/1/23	Mon 7/3/23
Test app on various devices and screen sizes	1 day	Sat 7/1/23	Sat 7/1/23
Conduct user testing and gather feedback	1 day	Mon 7/3/23	Mon 7/3/23
Deployment and Maintenance	2 days	Tue 7/4/23	Wed 7/5/23
Generate signed APK or publish app to the Google Play Store	1 day	Tue 7/4/23	Tue 7/4/23
Plan for future updates and enhancements	1 day	Wed 7/5/23	Wed 7/5/23

06. Conclusion

- In Conclusion, the app we developed for student submission and administrative management, utilizing a firebase database, offers a streamlined and efficient solution for handling student data.

- By leveraging firebase's capabilities, such as data storage and retrieval, our app provides an effective platform for students to submit their information and allows administrators to conveniently view and manage the submitted data.

This app simplifies the process of the data submission and management, enhancing efficiency and organization in the educational setting.

07.References

1. Functional vs Non Functional Requirements - GeeksforGeeks. (2020, April 28). GeeksforGeeks. https://www.geeksforgeeks.org/functional-vs-non-functional-requirements/
2. 10+ Types of Diagrams & How to Choose the Right One - Venngage. (2023, June 5). Venngage. https://venngage.com/blog/types-of-diagrams/
3. SRS: Software Requirement Specifications Basics. (2023,June 4). BMC Blogs. https://www.bmc.com/blogs/software-requirements-specification-how-to-write-srs-with-examples/