GROUP 3 – Finale WIL Presentation

Group title: CRZ 'Competent, Reliable & Zippy'

Presentation Breakdown:

- (1)Problem Statement
- (2)Description of System
- (3)System requirements Documentation
- (4)Database
- (5)Mobile App Prototype/Website

Team Members & Stakeholders

Team Members:

- 1. Zwanga Muthavhine - Project manager[PM]
- 2. Romeo Vlooh - Business Analyst[BA]
- 3. Chad Andrews - Software Development Lead [SD]

Stakeholders:

- Trudie Beneder - HR and Operations Manager at Uviwe
- Deidre Bermoskie - IT and HR administrator at Uviwe
- Reece Wanvig - Lecturer at Varsity College
- Andele van Heerden - Lecturer at Varsity College

UVIWE NGO and Its Mission

- UVIWE NGO is a SA organization based in Port Elizabeth, Eastern Cape.
- Focuses on the well-being and development of vulnerable children and families in region.
- Believes in the ability of every child, family, and community to shape a child's life.

(1)‘Problem Statement’

Develop a Mobile App for UVIWE NGO

- The android mobile application will track and record financial transactions and learners' attendance for UVIWE NGO.

Problem Domain Analyses and Presentation: Mobilize UVIWE's Business Processes

- UVIWE NGO needs a digital solution to track and record all financial transactions and learners' attendance.
- Business operations digitized and incorporated into a new android mobile application.
- The mobile app should be user-friendly, secure, and scalable to meet the NGO's growing needs.

(2)‘Business Solution’:

2.1 Description of System

Uviwe requires a mobile app to fulfill their businesses needs.

2.1.1 Architecture

System will make use of one Mobile App and a Database to store the data.

2.2 How was it solved?

We decided upon an Android App and an online database rather than Sql.

2.2.1 How was the solution domain presented?

Conveyed using diagrams and descriptions.

Developing an Android Mobile App

- Android app requirements : A computer with a Windows, Mac, or Linux operating system, Android Studio, a compatible android device or emulator, and a Google account.
- Backend requirements: A server, a database, a programming language and framework, and a testing and deployment tool.
- Options for each requirement: Google Cloud or Azure for the **server**, MySQL, SQL server, or Firebase for the **database**, and Java or Kotlin for the programming **language and framework**.

Mobile Application Features

- The mobile application allows users to enter data using different formats and generate reports and charts to visualize progress and trends.
- Possible application features: reminders, notifications, backups, and synchronization across devices.

Project Goal and Objectives

- Redesign processes for recording, storing, and updating financial and attendance records.
- Deliver new fundraising procedures and functions.
- Document processes and system use.
- Train staff on processes and system.

Project Boundaries

- Within scope: redesign processes for financial and attendance records, deliver new fundraising procedures, document processes and system use, train staff.
- Out of scope: increase in deliverables, managing inventory, adding new plugins.

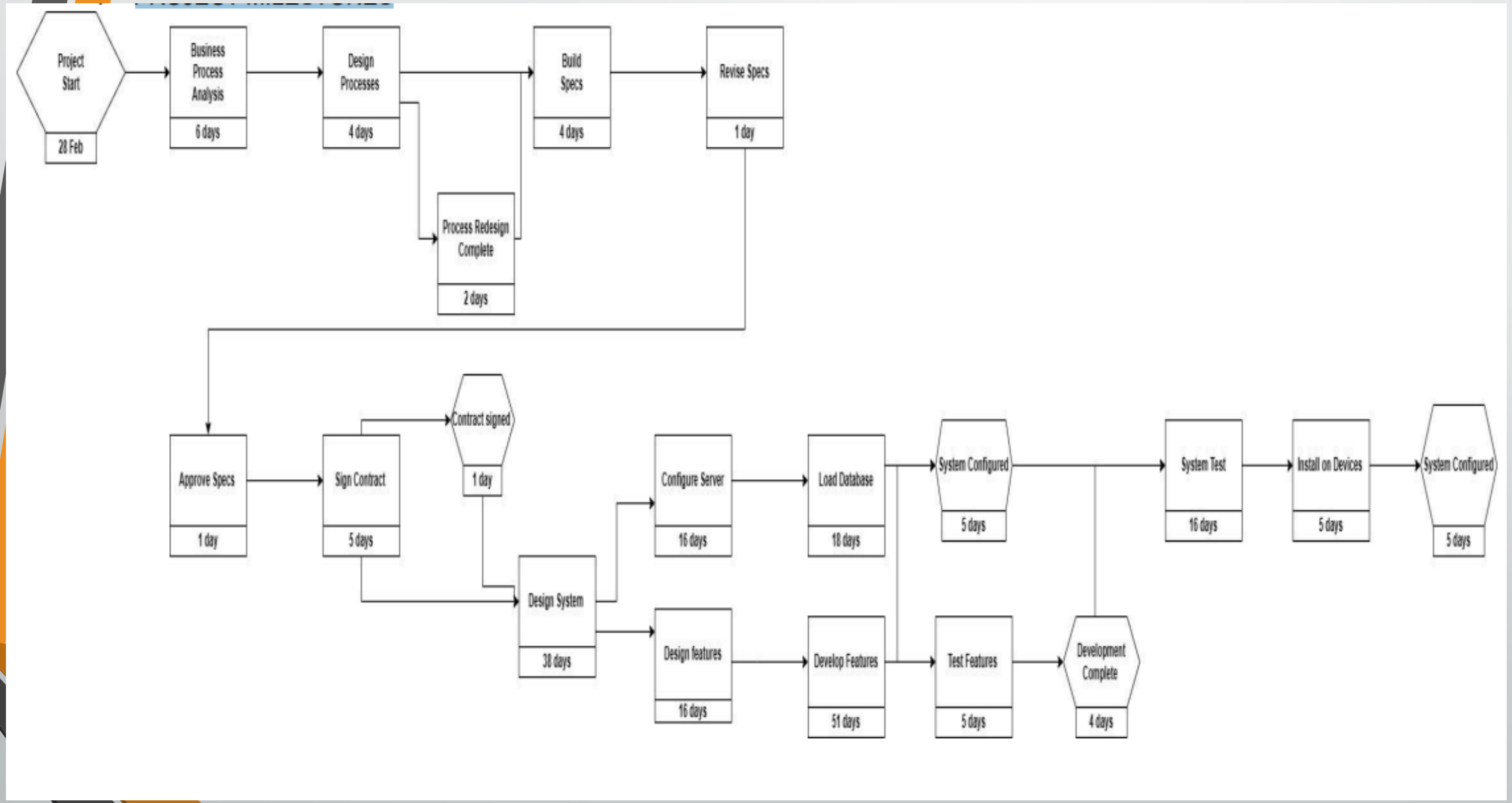
‘Deliverables’: Project Deliverables

- End Deliverables: New learners' attendance tracking system, New financial transactions recording system, Fundraising system functionality, Service statistics report.
- Intermediate Deliverables: System specification, Business process analysis, System design/configuration plan, Server configuration, App database loading, Devices setup, Training complete.

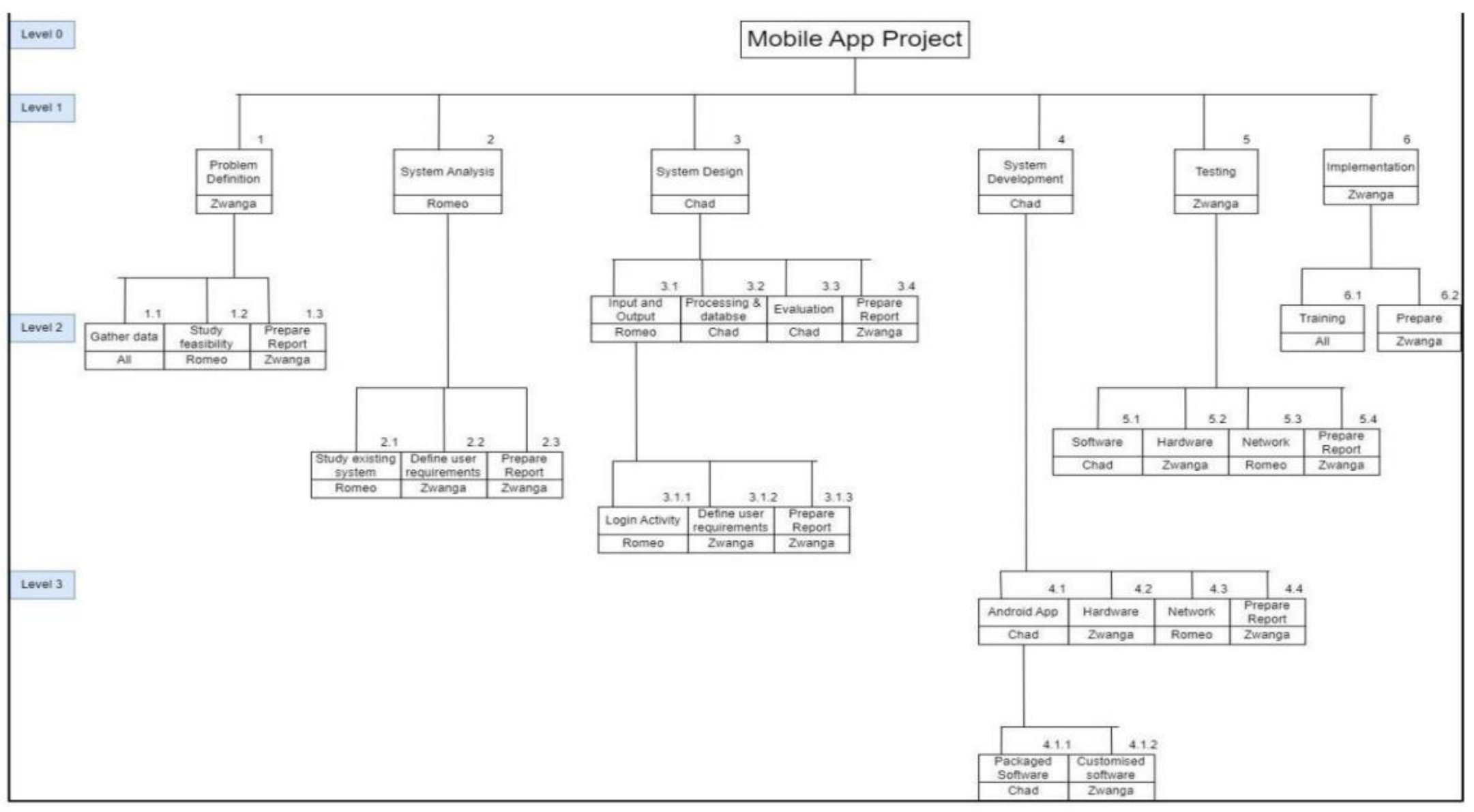
Project Assumptions, Risks, and Constraints

- Assumptions: organization responsible for installation and data loading, organization provides staff training, mobile app doesn't require customization.
- Risks: IT group doesn't have enough resources, success criteria cannot be confirmed until months after implementation, system requires extensive customization, legal risks.
- Constraints: limited budget, project execution complete by 2023.

‘Milestones’: Project Milestones



‘WBS’: Work Breakdown Structure



Budgets

- Do to current circumstances, no expenses are anticipated for the App development.

(3)System Requirements Documentation:

Functional Requirements

- User login and registration
- Authentication and authorization for each user
- Display of functionality categories for business operations
- User ability to choose functionality for business operations
- Attendance functionality: Selecting school location and date, displaying list of learners, selecting available learners, generating attendance report, and storing report on database
- Financial functionality: Displaying list of account payers, selecting payer, date and amount, generating report, and storing report on database
- Fundraising functionality: Entering donor details, donated amount, target amount, amount left to reach target, and storing report on database

Azure vs Firebase

- Comparison Breakdown:

  1)Comparison of Azure and Firebase hosting services.

  2)Analysis of features and pricing.

  3)Exploration of which hosting service will work best for the project.

- Comparison of Azure and Firebase hosting services:

Azure Overview:

Cloud services for users to build, manage, test, and deploy applications. Clear forms of cloud computing services, platform as a service, infrastructure as a service and software as a service as well as other serverless services.

Firebase Overview:

Helps developers create, manage and their apps easily; and apps can be created faster in a secure manner with the Firebase. Provides services to IOS, Android, unity, and the web, while making use of NoSQL for database storing.

- Analysis of Features and Pricing:

Azure:

Features:

- Infrastructure as a Service.
- Strong Support in Analytics.
- Enhanced IT Support.
- Improved scalability.

Pricing: Pay as you go - It is calculated by the actual usage and is billed per second. No upfront payment and long-term commitments.

Firebase:

Features

- Realtime Database.
- Hosting.
- Cloud Functions.
- Cloud Messaging.
- App Check.

Pricing: No-Cost (Spark Plan) – Includes most of the features but limited **AND** Pay as you go (Blaze Plan) – Includes all the features.

- Exploration of which hosting service will work best for the project:

Azure:

Pros	Cons
Security	Complexity
Flexibility	Support
High Availability and Uptime	Complicated Pricing
Scalability	Data Transfer fees

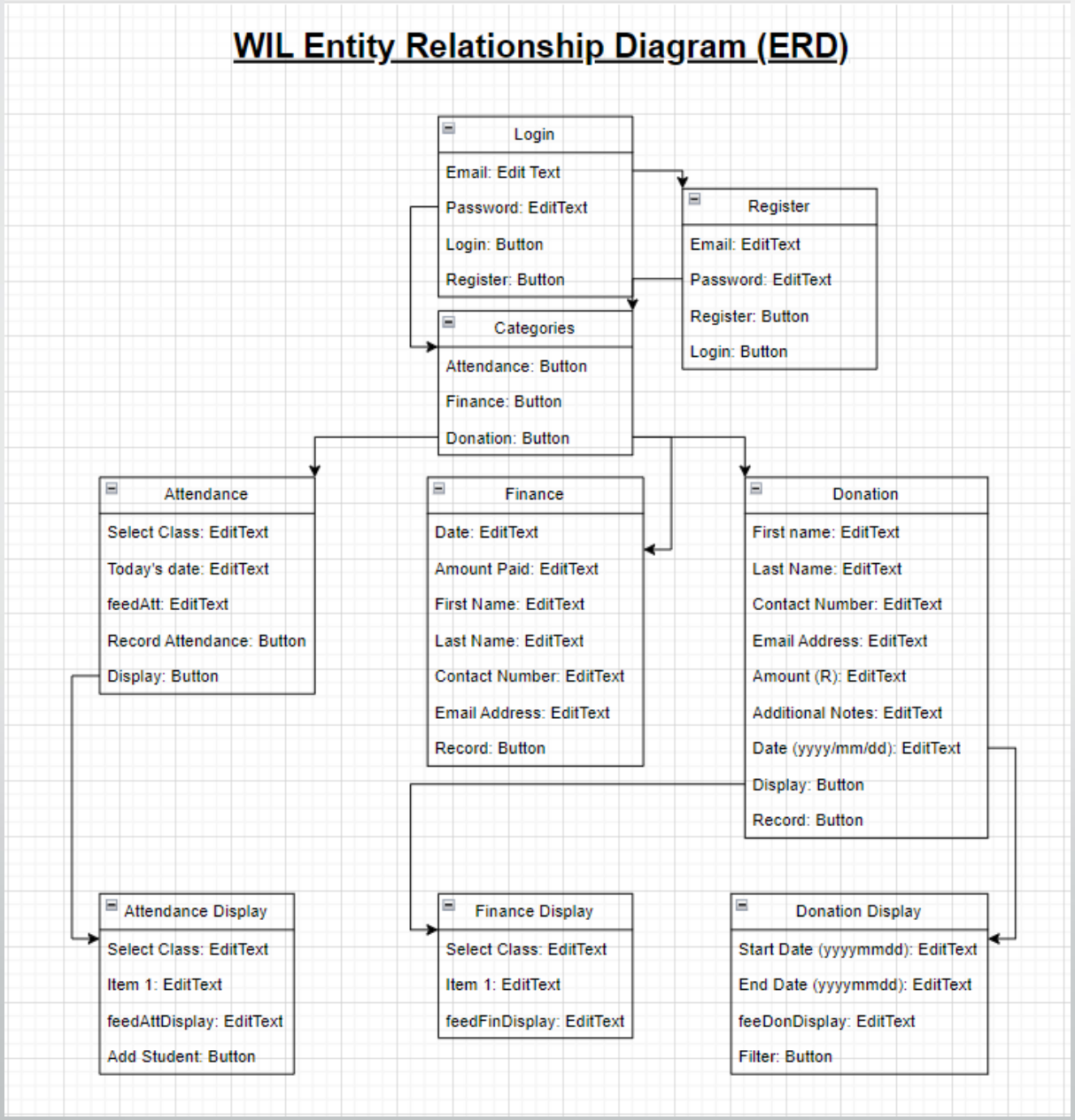
Firebase:

Pros	Cons
Database capabilities	Limited data migration
Free plan	Platform dependence
Quick and easy integration and setup	Android centred
Good documentation	Limited querying capabilities

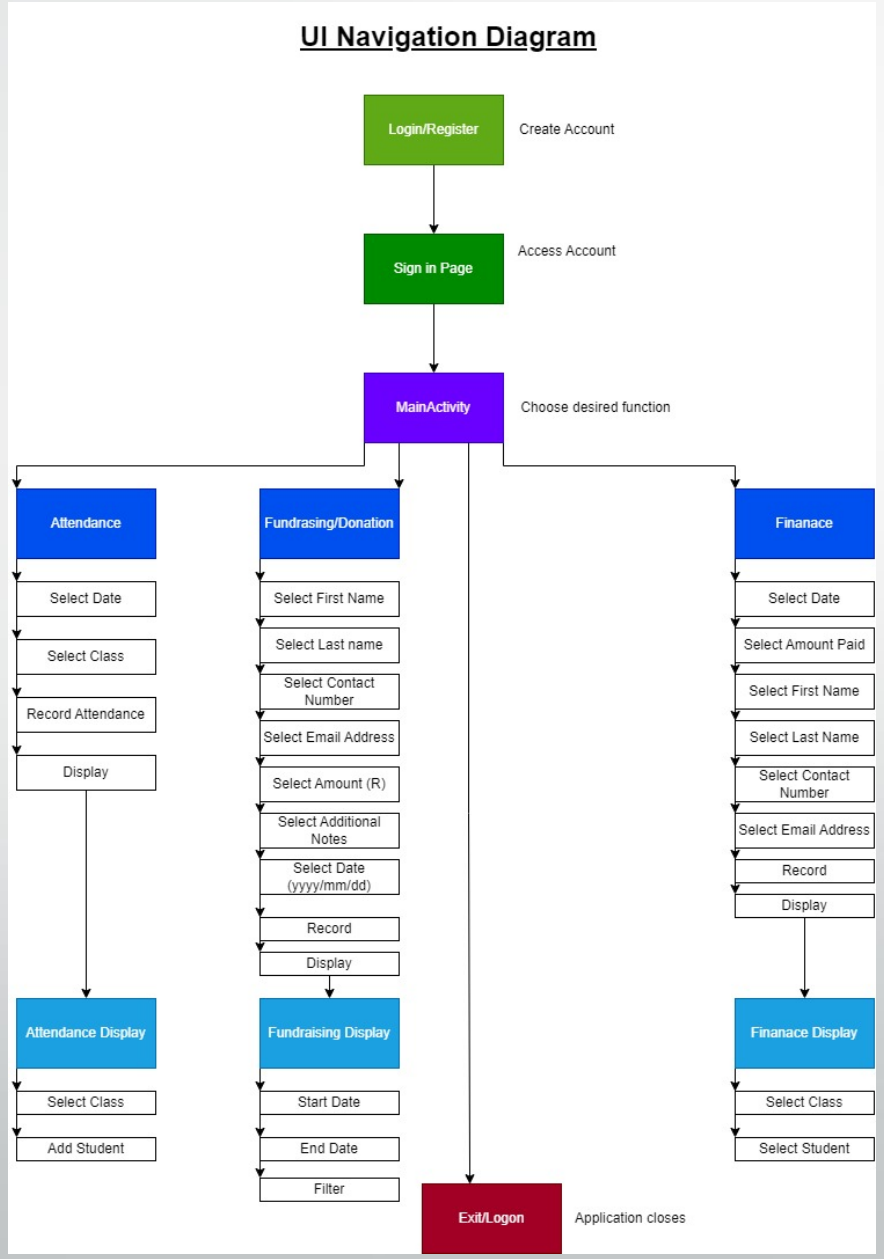
The finale decision has been made: Firebase will be used going forward.

SDLC Documentation

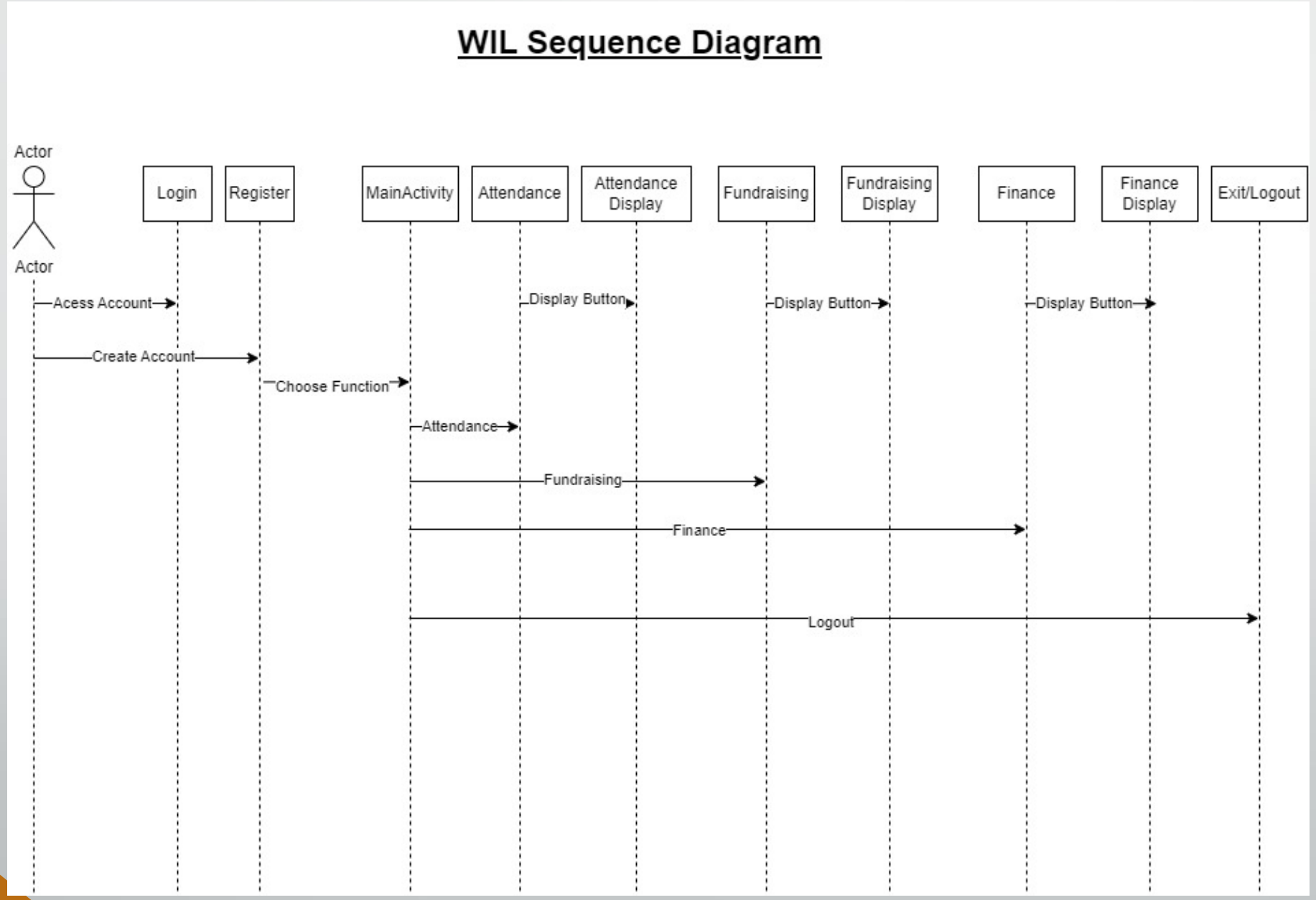
Updated UML ERD Diagram



New UI Design



New Sequence Diagram



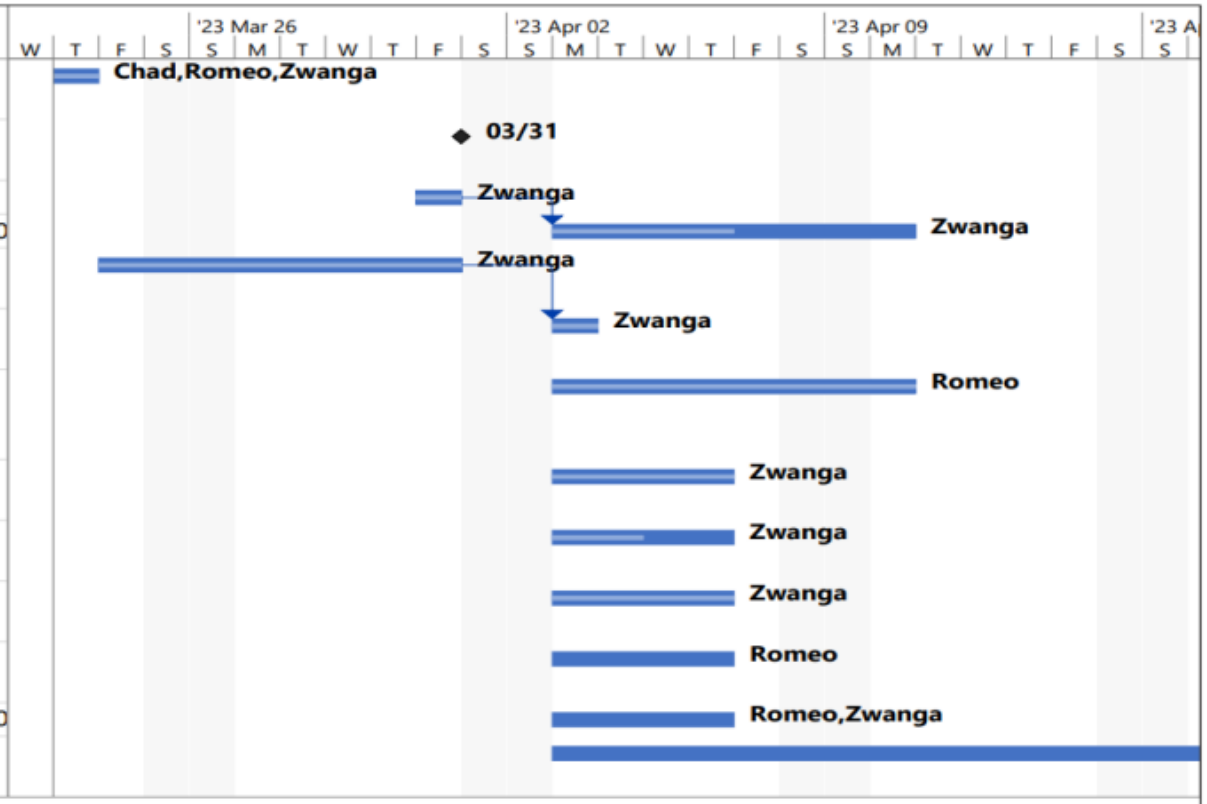
Stakeholders and their Functions

Stakeholder Analysis

Name	Department / Company	Position	Advisers	Objectives, Requirements, Interests	Influence	Project Contribution	Resistance
Trudie Beneder	Uviwe	HR and Operations Manager	IT, HR administrator,General staff	Increase productivity, Increase revenue	High	Provides information, approves deliverables	Concerned about disruptions during project
Deidre Bermoskie	Uviwe	IT and HR administrator	HR and Operations Manager, General staff	Increase productivity, Increase revenue, Improve IT systems	High	Provides information, approves deliverables, supports work	Concerned about process changes
Reece Wanvig	Varsity College	Lecturer	Academic administrators	Increase productivity, increase services offered, improve IT skills	High	Supports work, approves expenditure, approves deliverables	concerned about budget and schedule
Andele van Heerden	Varsity College	Lecturer	Academic administrators	Increase productivity, increase services offered, improve IT skills	High	Supports work, approves expenditure, approves deliverables	concerned about budget and schedule

PROJECT PLAN

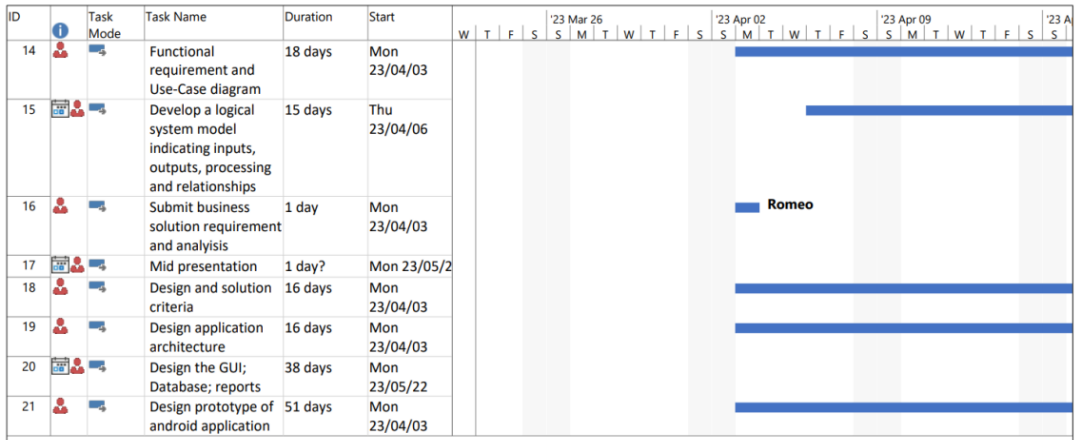
ID	Task Mode	Task Name	Duration	Start
1		Team Member allocation	1 day	Thu 23/03/23
2		Meeting setup with NGO's	0 days	Fri 23/03/31
3		Business Processes	1 day?	Fri 23/03/31
4		System Requirements	6 days	Mon 23/04/0
5		Functions of the system	6 days	Fri 23/03/24
6		Stakeholders and their functions	1 day	Mon 23/04/03
7		Inputs, Outputs and Processing Components	6 days	Mon 23/04/03
8		Scope and key role players	4 days	Mon 23/04/03
9		Milestones and Deliverables	4 days	Mon 23/04/03
10		Work Breakdown Structure	4 days	Mon 23/04/03
11		Technical and economic feasibility	4 days?	Mon 23/04/03
12		Risk Analysis	4 days	Mon 23/04/0
13		Requirement analysis criteria	15 days	Mon 23/04/03



Project: Project1WIL
Date: Sat 23/05/20

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Progress
Project Summary	Manual Summary	Manual Progress
Inactive Task	Start-only	
Inactive Milestone	Finish-only	

ID	Task Mode	Task Name	Duration	Start
14		Functional requirement and Use-Case diagram	18 days	Mon 23/04/03
15		Develop a logical system model indicating inputs, outputs, processing and relationships	15 days	Thu 23/04/06
16		Submit business solution requirement and analyisis	1 day	Mon 23/04/03
17		Mid presentation	1 day?	Mon 23/05/2
18		Design and solution criteria	16 days	Mon 23/04/03
19		Design application architecture	16 days	Mon 23/04/03
20		Design the GUI; Database; reports	38 days	Mon 23/05/22
21		Design prototype of android application	51 days	Mon 23/04/03



Project: Project1WIL
Date: Sat 23/05/20

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
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Duration-only
Manual Summary Rollup
Manual Summary
Start-only
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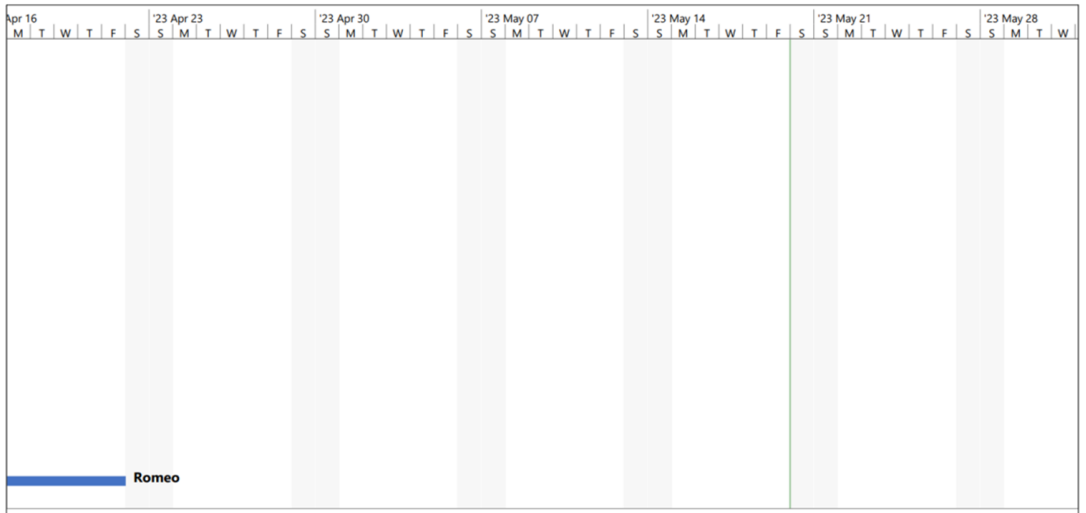
External Tasks
External Milestone
Deadline
Progress
Manual Progress



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Project Summary
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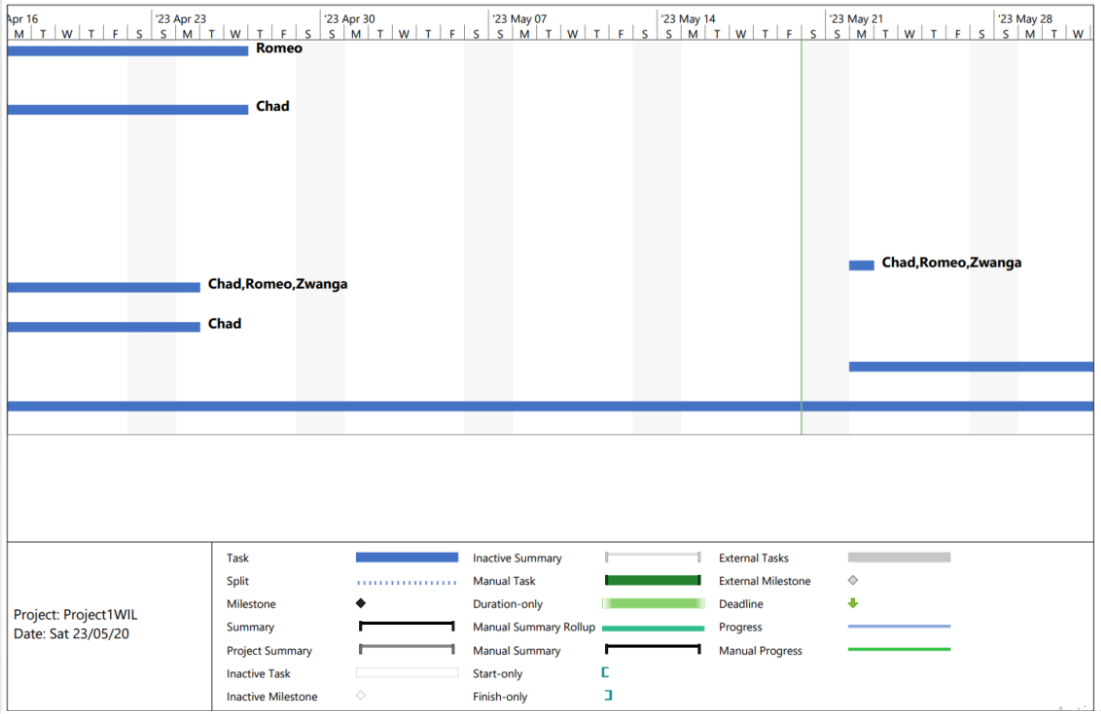
Progress
Manual Progress


Apr 16
'23 Apr 23
'23 Apr 30
'23 May 07
'23 May 14
'23 May 21
'23 May 28
Romeo
Chad
Chad,Romeo,Zwanga
Chad
Chad,Romeo,Zwanga
Project: Project1WIL
Date: Sat 23/05/20
Task
Split
Milestone
Summary
Project Summary
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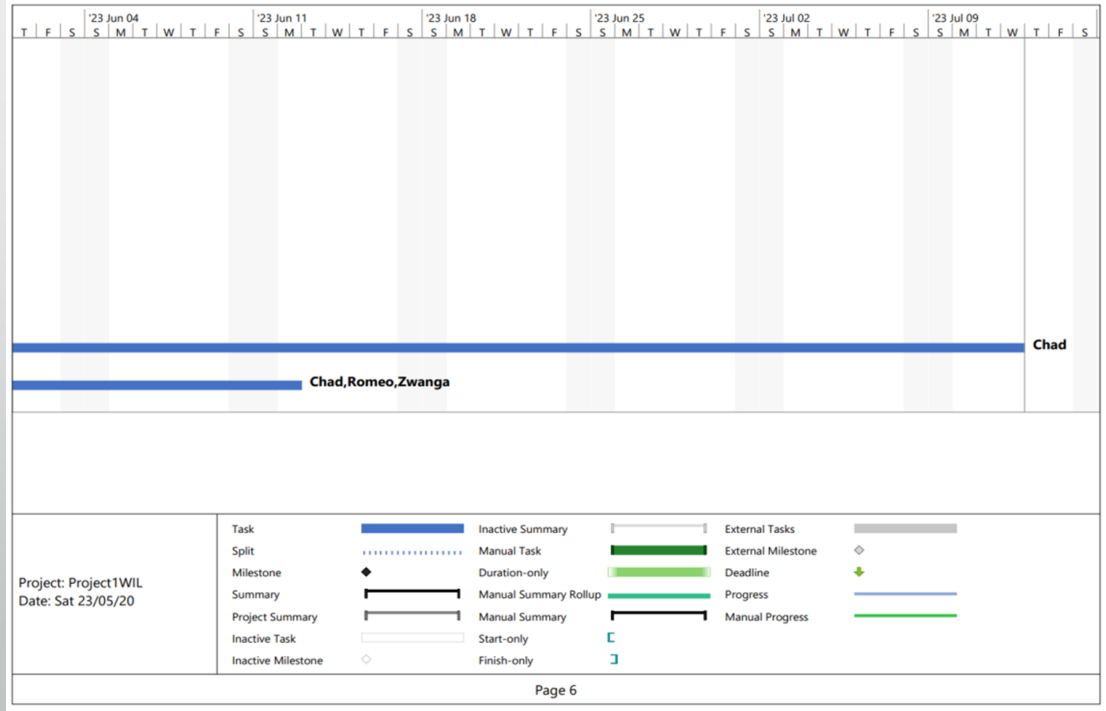
'23 Jun 04
'23 Jun 11
'23 Jun 18
'23 Jun 25
'23 Jul 02
'23 Jul 09
Chad
Chad,Romeo,Zwanga
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Date: Sat 23/05/20
Task
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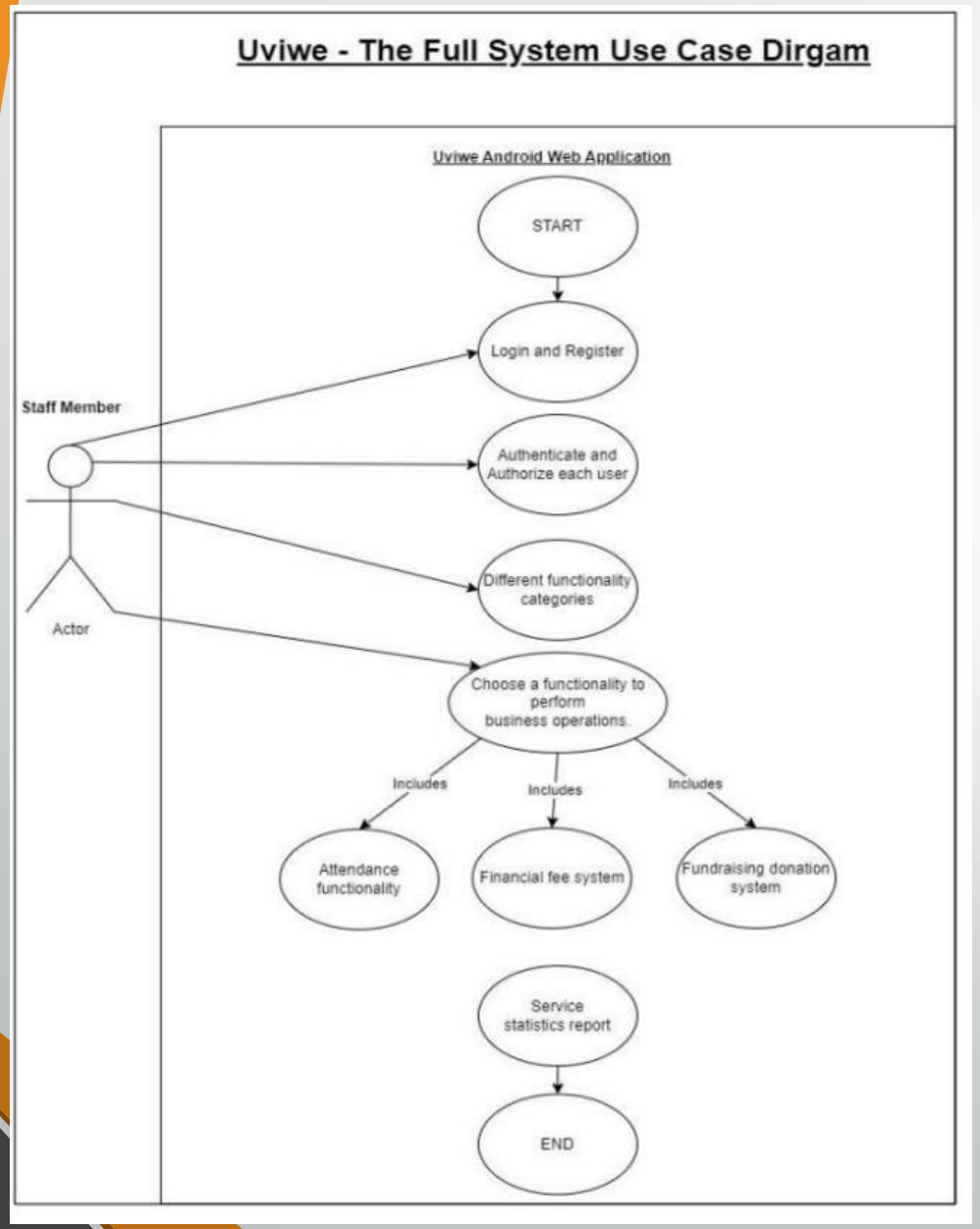
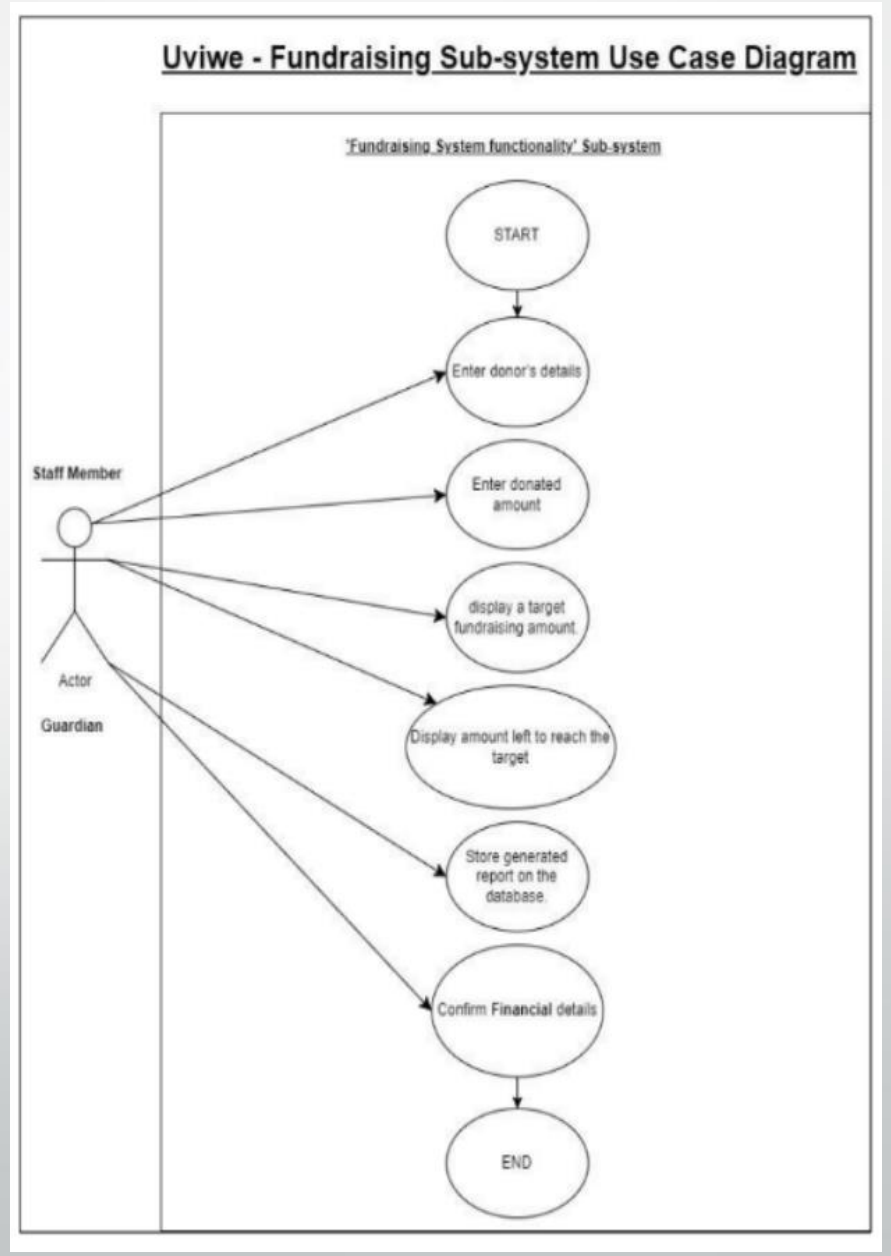
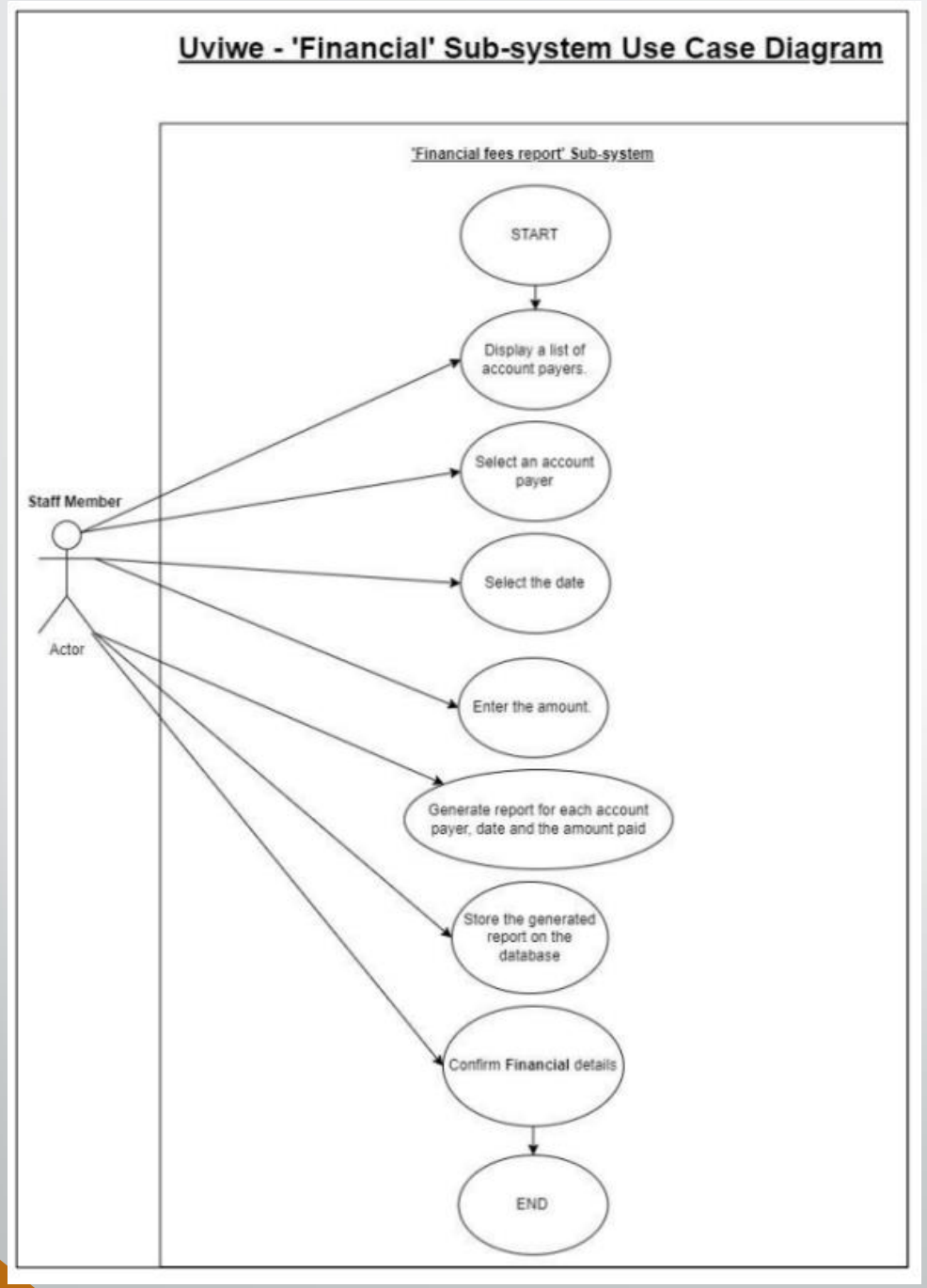
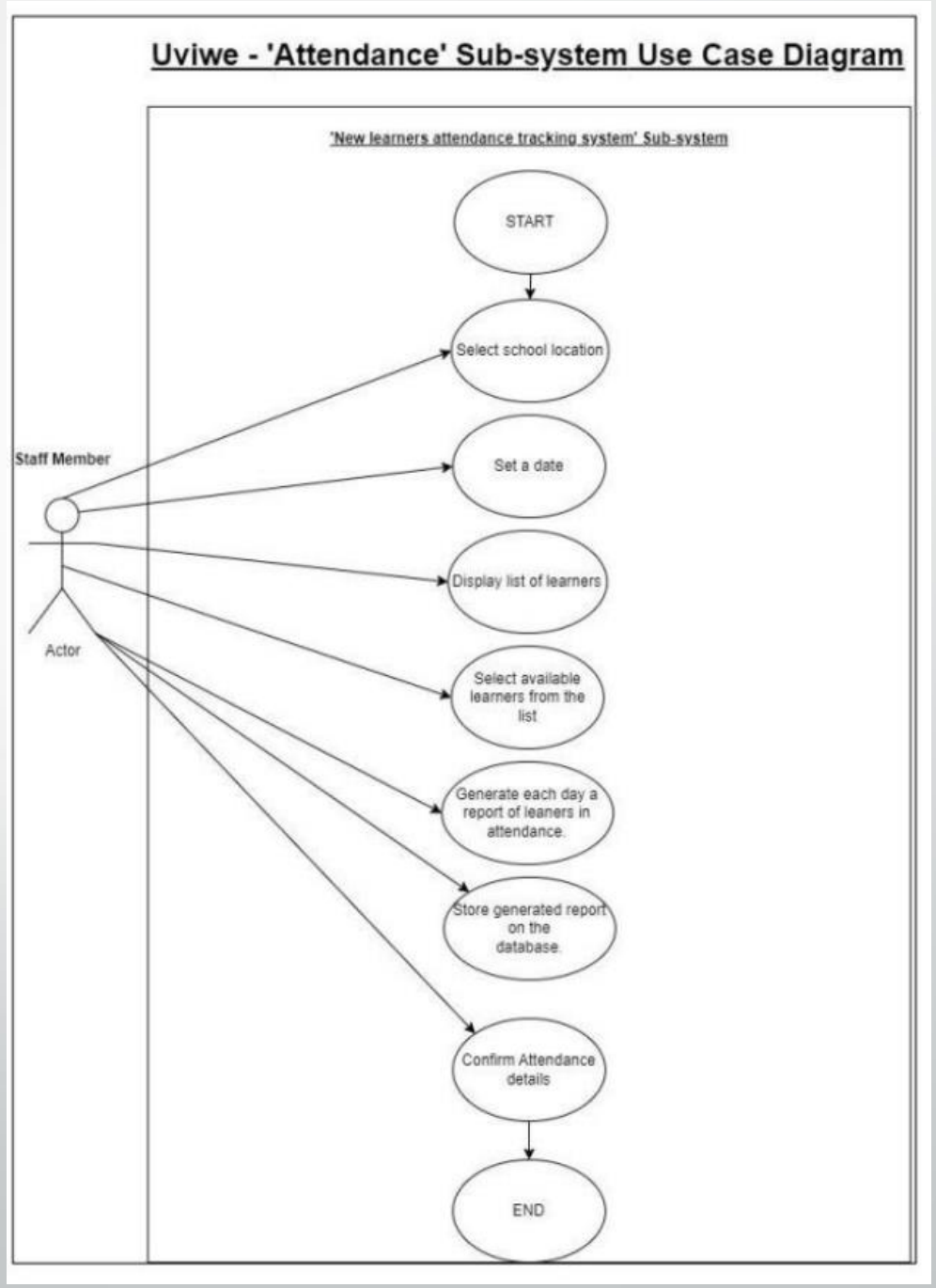
USECASE DIAGRAMS

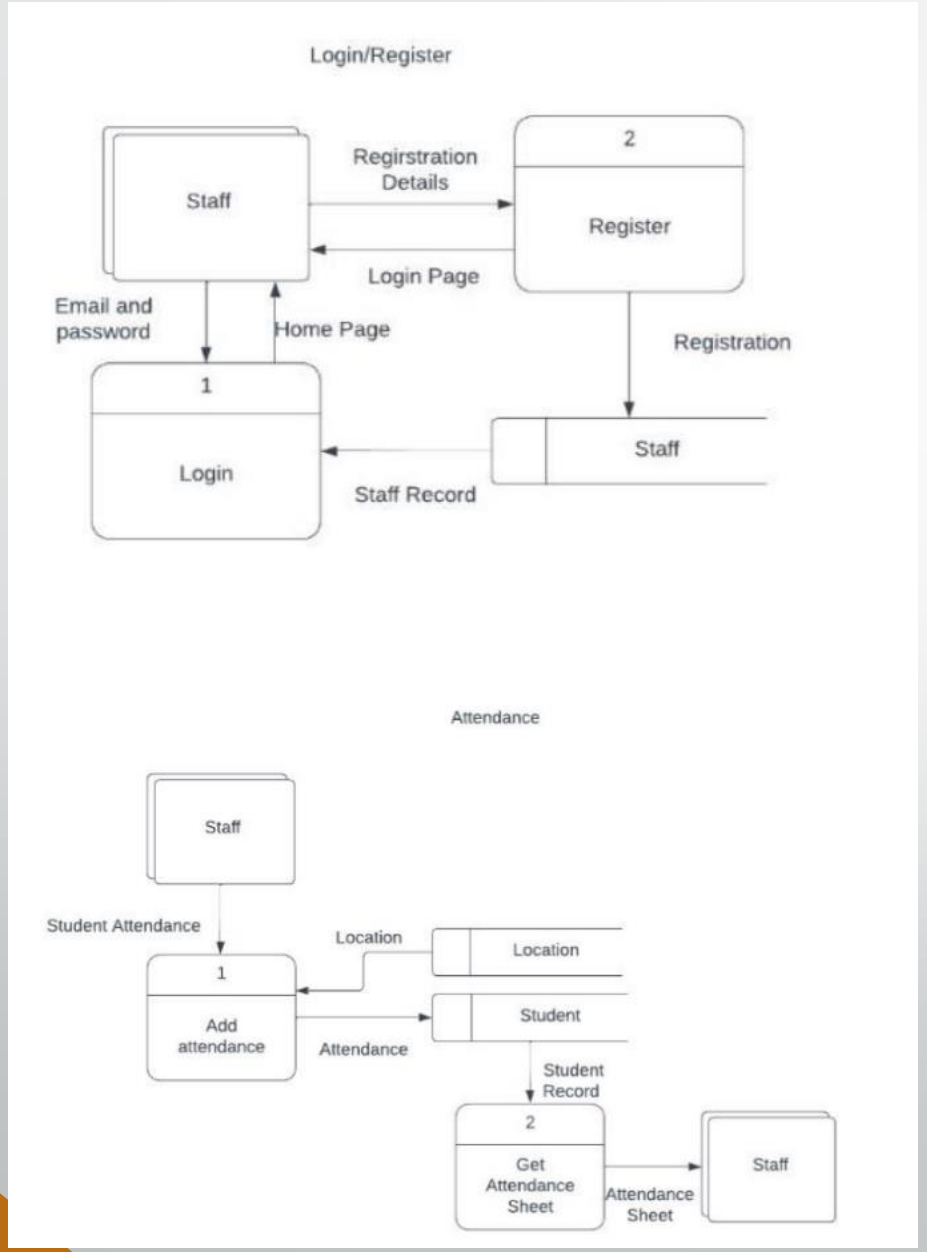


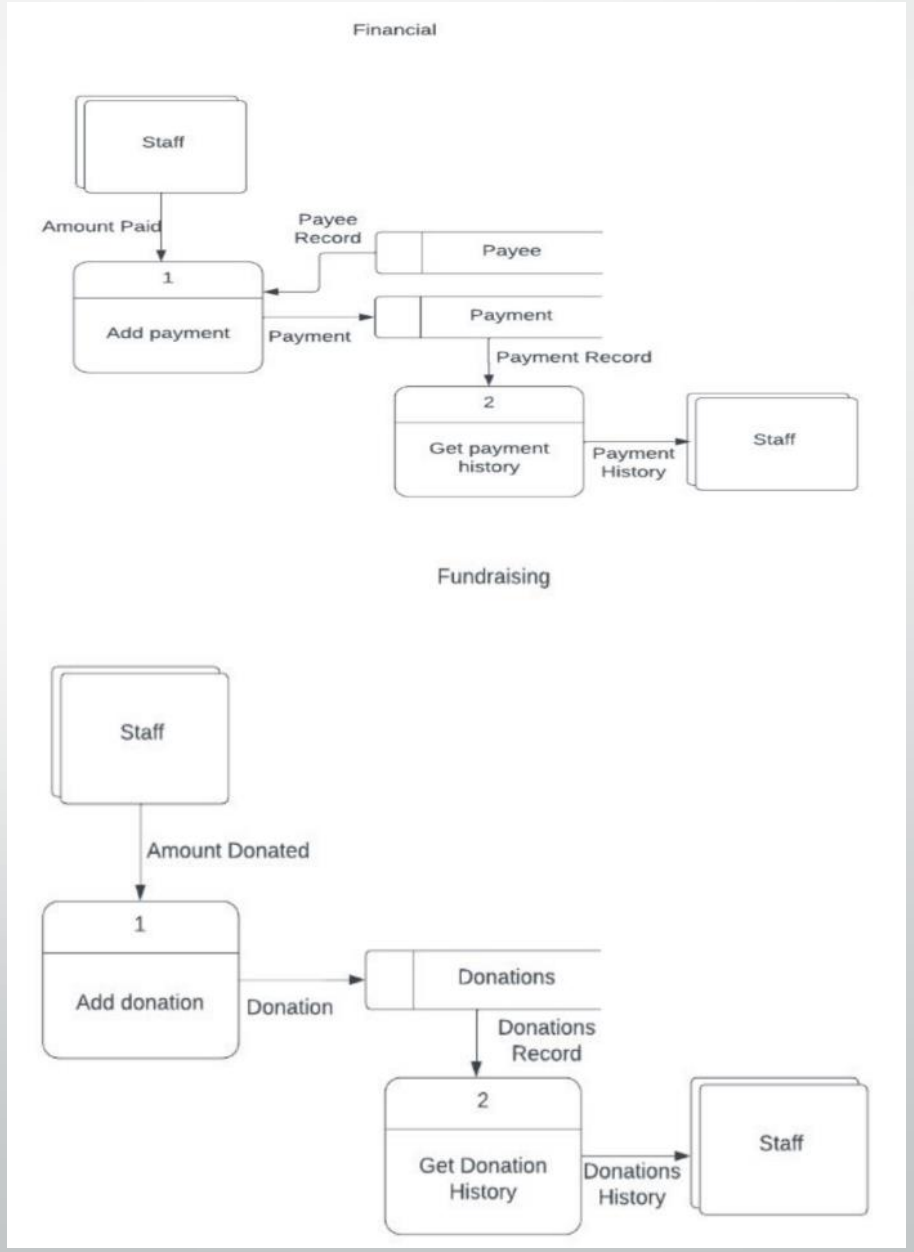



Uviwe - 'Financial' Sub-system Use Case Diagram
'Financial fees report' Sub-system
START
Display a list of account payers.
Select an account payer
Select the date
Enter the amount.
Generate report for each account payer, date and the amount paid
Store the generated report on the database
Confirm Financial details
END
Staff Member
Actor


Uviwe - 'Attendance' Sub-system Use Case Diagram
'New learners attendance tracking system' Sub-system
START
Select school location
Set a date
Display list of learners
Select available learners from the list
Generate each day a report of leaners in attendance.
Store generated report on the database.
Confirm Attendance details
END
Staff Member
Actor

LOGICAL SYSTEM MODELS





(4)‘Database’:

Database Tables

- The Main databases:

1) Login

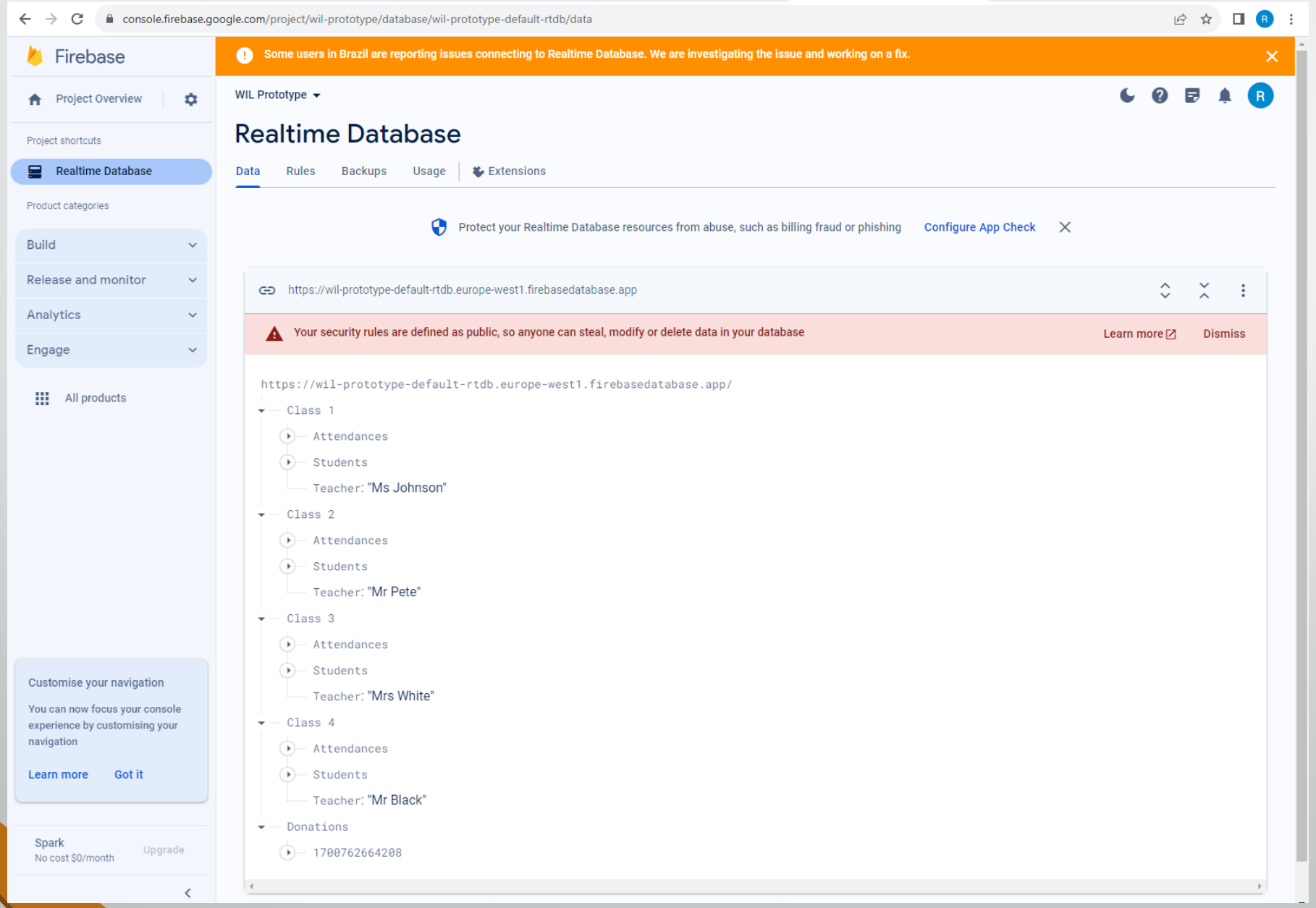
2)Attendance

3)Finance

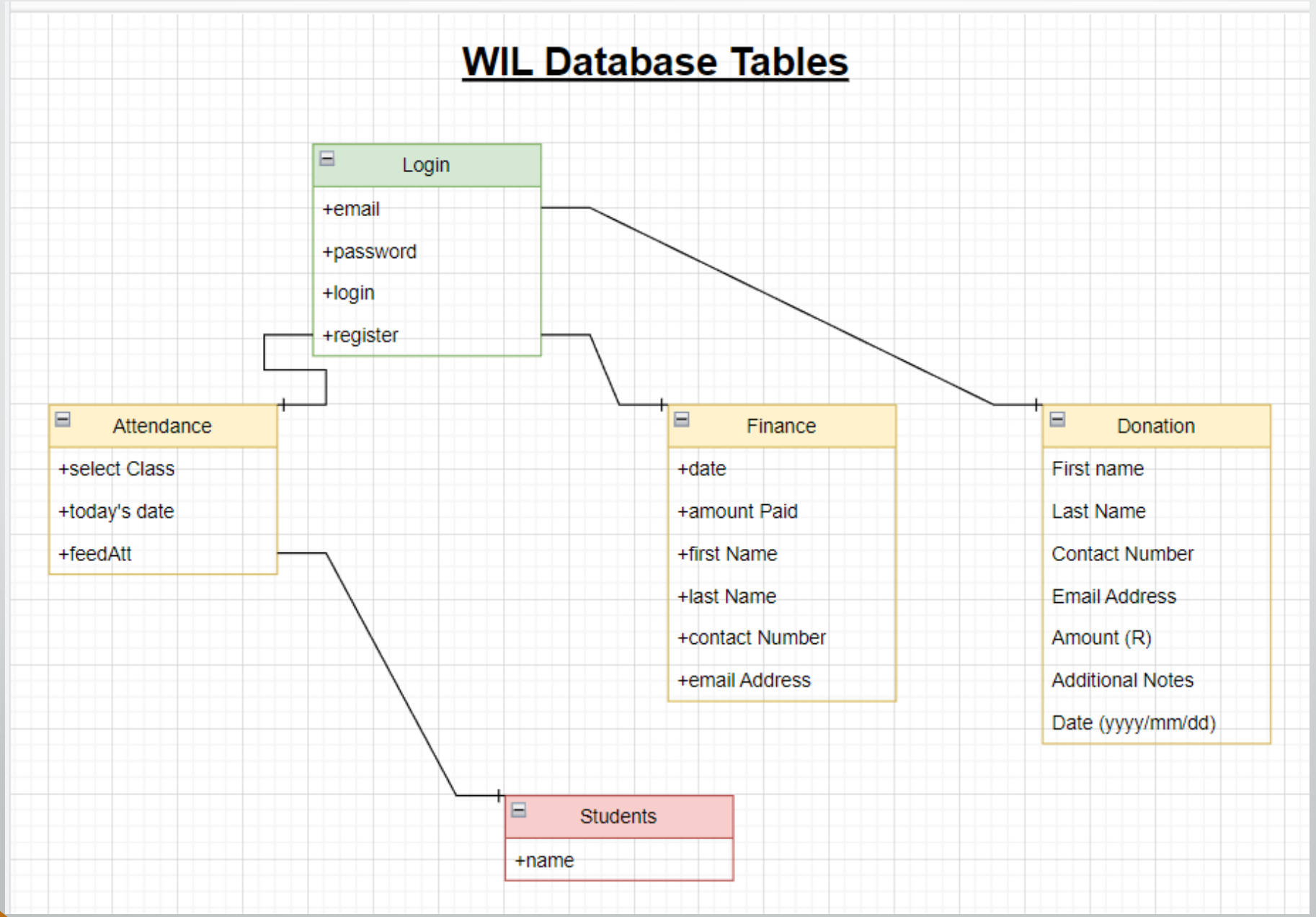
4)Donation

5)Students

Database Screenshot



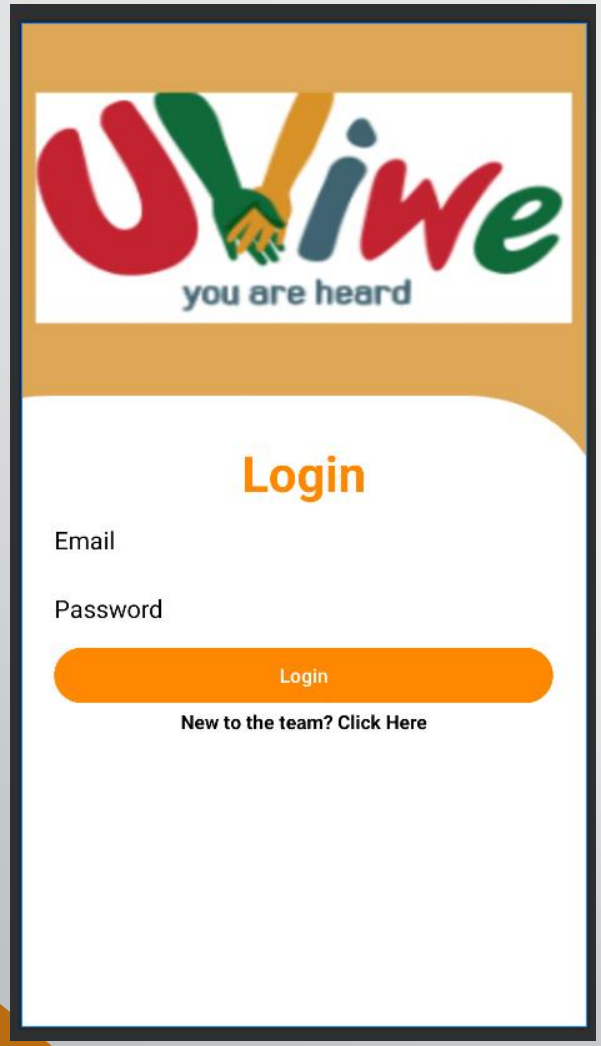
Updated Database Table



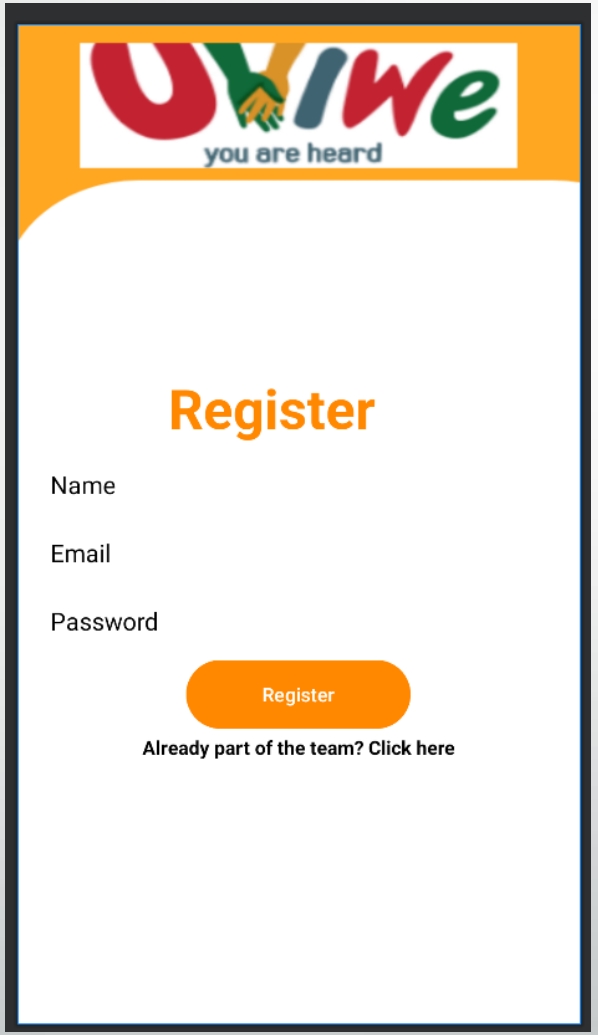
(5)“Mobile App Prototype/ Website‘:

Program Screenshots Part 1

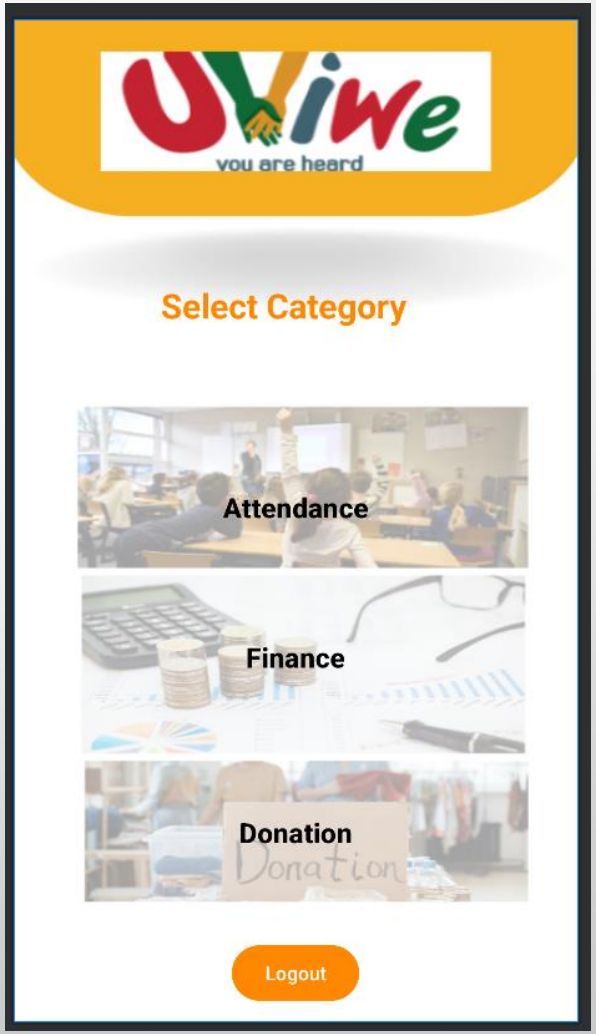
Login Page:



Register Page:

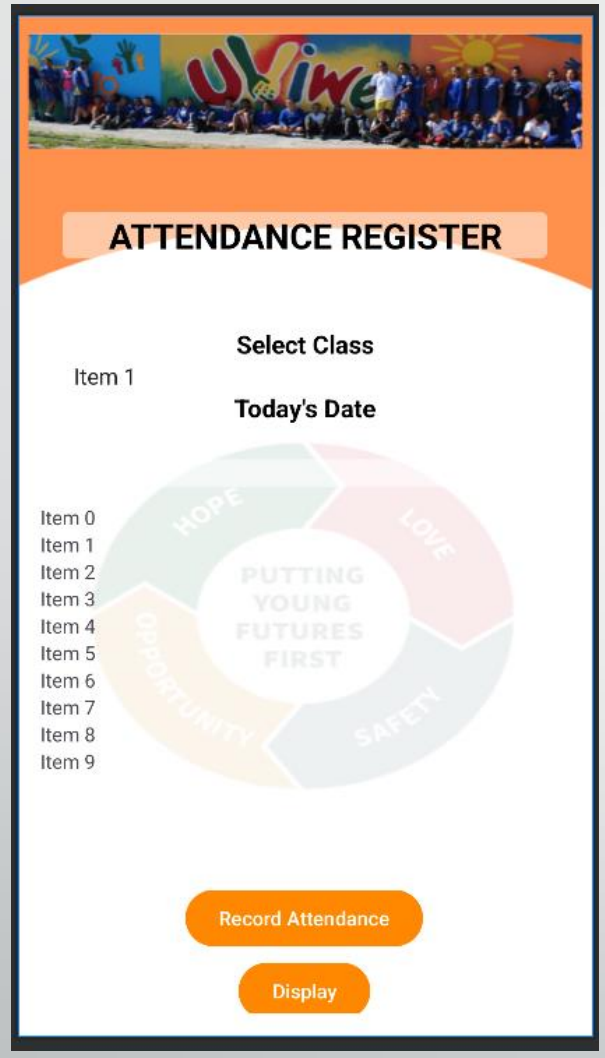


Category Page:

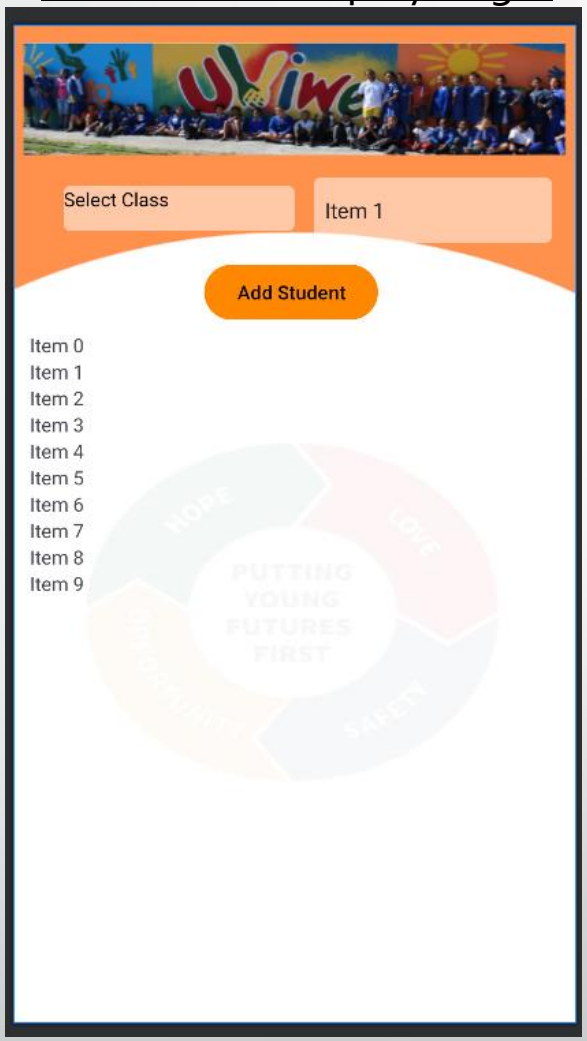


Program Screenshots Part 2

Attendance Page:

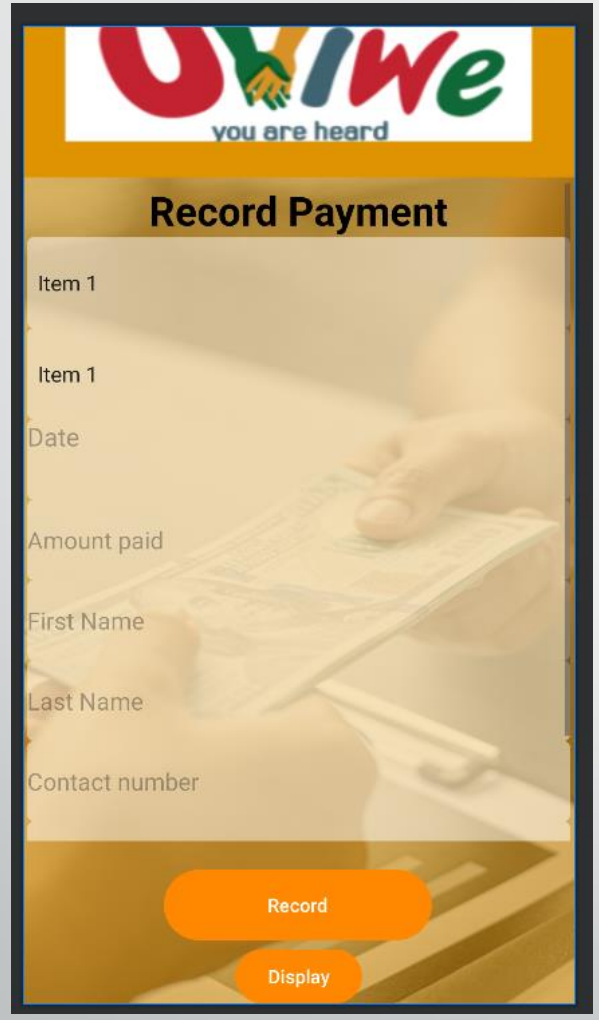


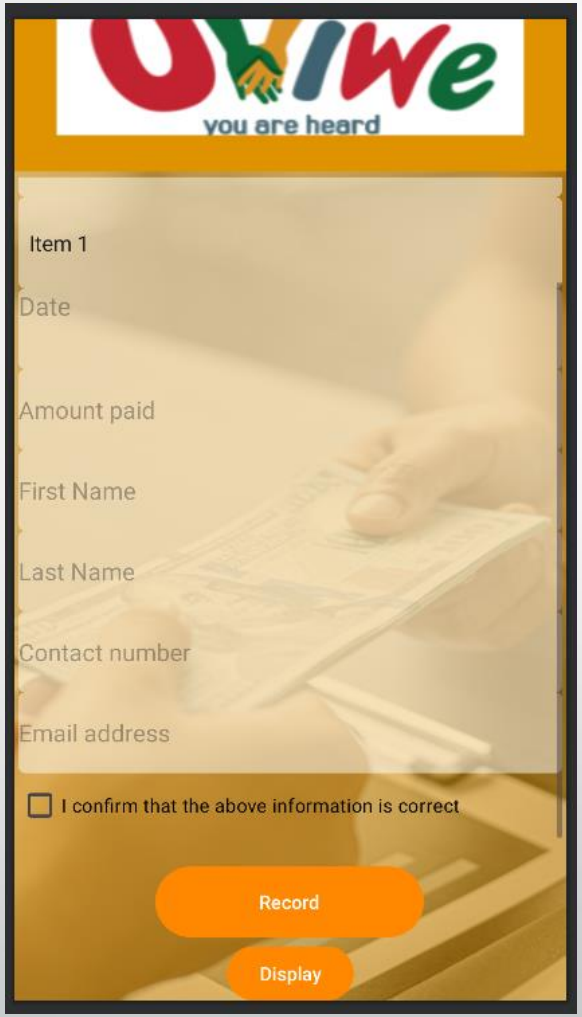
Attendance Display Page:



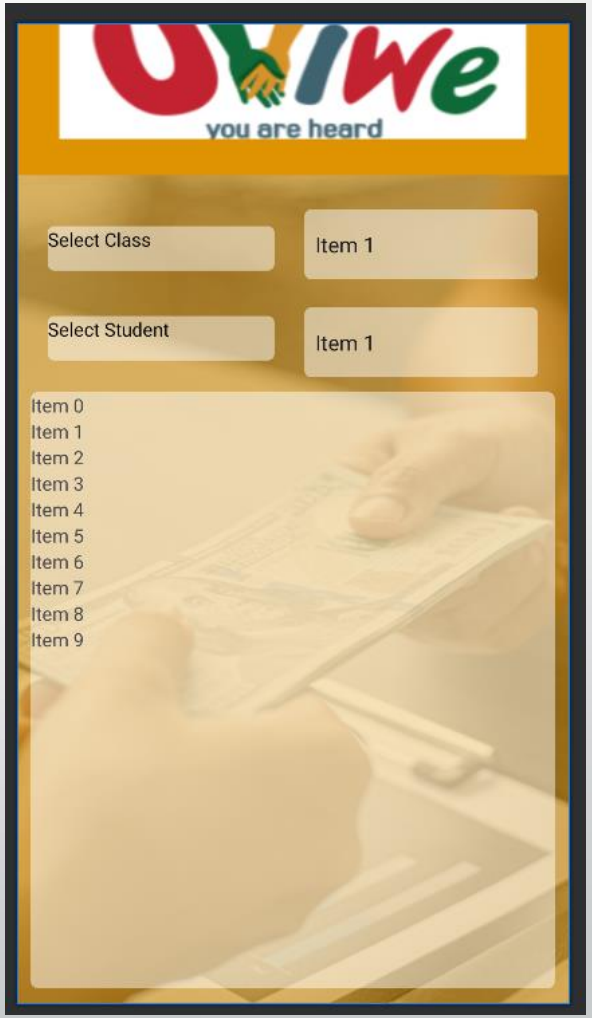
Program Screenshots Part 3

Finance Page:



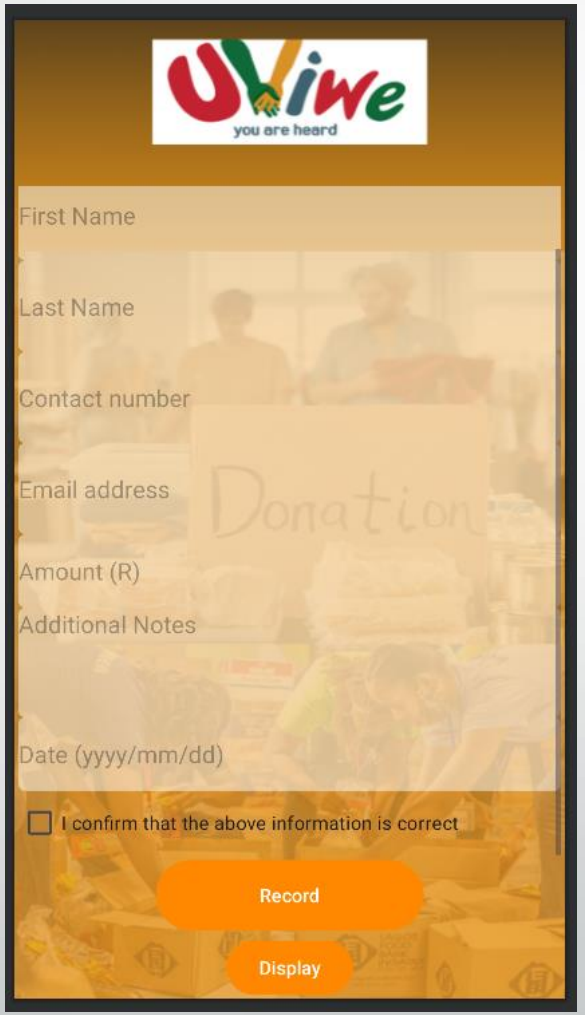


Finance Display page:



Program Screenshots Part 4

Donation Page:



Donation display Page:

~Thank you for your time~