Campus Coin

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Table 1: Document version history

Version	Date	Reason for Change
1.0	15-November-2023	Proposal First Version Specifications are added
1.2	Dec-2023	Implemented GUI for the mobile application
2.0	14-Jan-2024	SRS First version's specifications are defined.

GitHub https://github.com/Samehh20/Campus-Coin.git

GitHub https://github.com/omarnagy31/Campuscoin$_{f}ront end.git$

Contents

Abstract

An inventive addition to a university's technology ecosystem is the CampusCoin mobile app, which serves as a specific digital wallet for employees, instructors, and students. This program provides a complete solution for managing cash, making purchases, and accessing on-campus services. It is seamlessly connected into the university infrastructure. Users can easily add money to their digital wallets using a number of methods, such as on-campus kiosks, bank accounts, and credit cards.The application meets a variety of on-campus demands, from cafeterias and eateries to bookstores, by including a virtualized financial repository and user-friendly features like QR code scanning. The application interface and institutional signage provide user instruction, highlighting the use of multi-factor authentication and crypto-graphic techniques to strengthen transaction security. This platform is a major advancement.

1 Introduction

1.1 Purpose of this document

This document serves to articulate the purpose and objectives of the Campus Coin project, a financial technology solution tailored for university environments. It is intended for university administrators, IT professionals, financial staff, professors, and students. The document succinctly outlines the transformative goals of Campus Coin in modernizing financial transactions within academic institutions, emphasizing security, efficiency, and a seamless user experience. It aims to garner support and understanding from stakeholders, paving the way for successful implementation and integration into the university's ecosystem. The intended outcome is a technologically advanced, secure, and user-friendly financial environment that aligns with the unique needs of higher education institutions.

1.2 Scope of this document

Software Requirements Specification for Campus Coin outlines the project's boundaries and functionalities within the university environment. The team involved in requirements elicitation includes end-users (staff, faculty, students), customers (administrators), system engineers, and developers. Constraints, such as predetermined schedules, budget considerations, and the software engineering environment, are detailed. The objective is to collaboratively collect, analyze, and document key features and limitations, ensuring that Campus Coin aligns effectively with university requirements and operates within specified constraints.

1.3 Business Context

The Campus Coin mobile app project seeks to transform financial transactions within a university setting by introducing a specialized digital wallet for students, staff, and parents. Integrated seamlessly into the university's infrastructure, the app streamlines cash management, on-campus purchases, and service accessibility. Users have the flexibility to add funds through various means, including on-campus kiosks and parental deposits. The application prioritizes user-friendly features like QR code scanning, transaction history tracking, and real-time notifications. A unique parental functionality enables direct charging to a child's account. With a strong emphasis on security through multi-factor authentication and cryptographic techniques, the initiative signifies a significant leap in optimizing financial transactions and fostering financial inclusivity within the university community.

1.4 System Overview

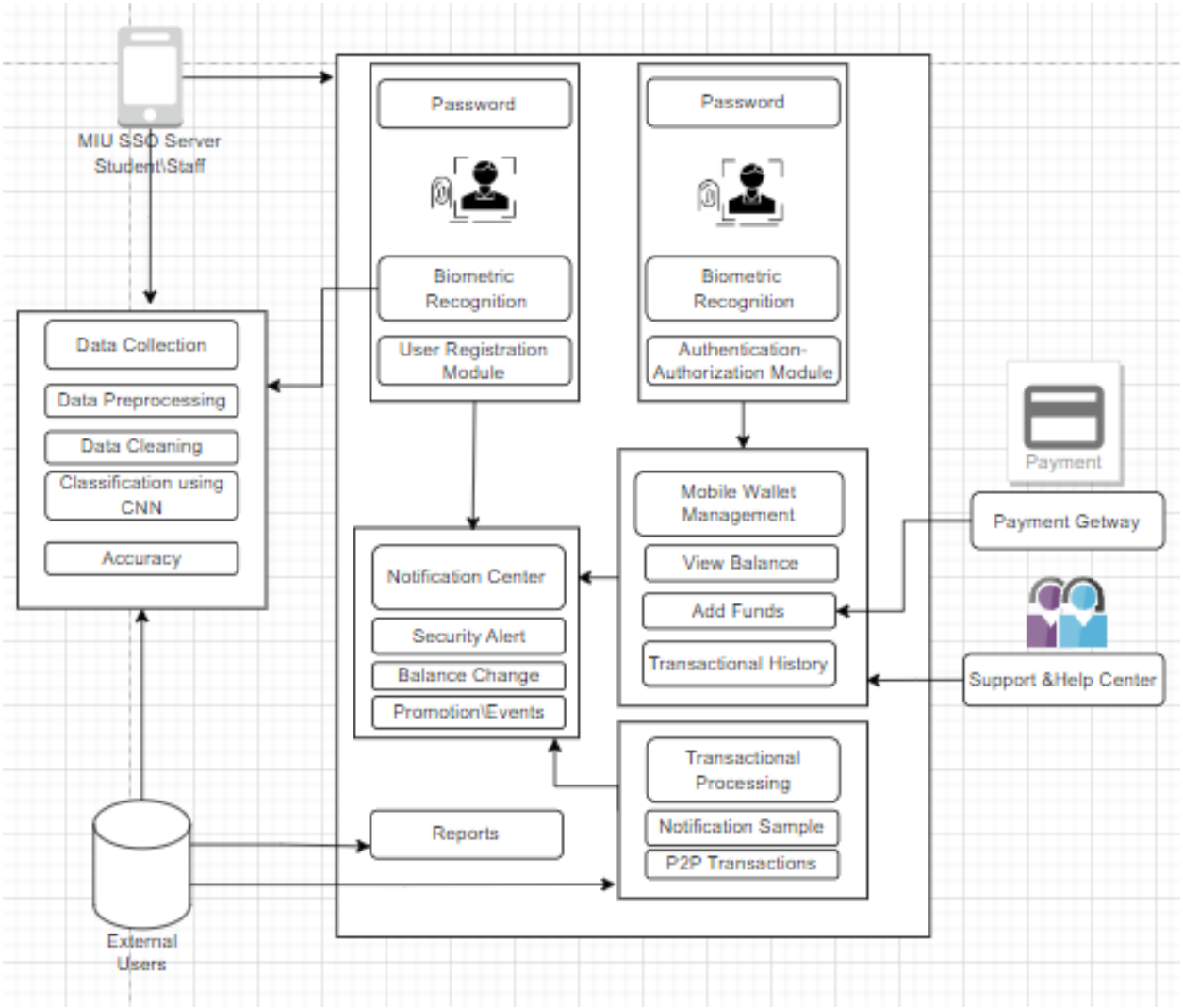

Figure 1: System Overview Diagram

Data Collection and Preprocessing Module

Objective:

Gather comprehensive user details during the account creation process. Refine and structure collected data for efficient system utilization.

Functionalities:

- Collects personal information, including name, contact details, and identification.
- Records transaction-related details to build a comprehensive user profile.
- Cleanses and organizes user data to eliminate redundancies.
- Prepares transaction data for analysis and reporting.

Registration and Log-in Authentication Module

Objective:

Ensure secure user access through biometric verification.

Functionalities:

- Captures and stores biometric data during the registration process.
- Utilizes biometrics for user authentication, enhancing system security.

Mobile Wallet Management Module

Objective:

Setting up wallet credentials and enhancing wallet user-profile. Efficiently manage digital wallets and associated financial activities.

Functionalities:

- Adding Balance:
  - Users can add funds through campus kiosks or receive parental deposits securely.
- View Transaction History:
  - Provides users with a detailed overview of their financial transactions.
- View Balance:

Transactional Processing Module

Objective:

Enable secure and swift peer-to-peer transactions within the system.

Functionalities:

- Facilitates seamless P2P transactions while ensuring data integrity.
- Sends timely payment notifications to recipients, confirming transaction details.

Notification Center Module

Objective:

Keep users informed about relevant system activities, promotions, and incentives.

Functionalities:

- Sends real-time transaction notifications to users.
- Delivers updates on system enhancements, promotions, and incentives.

Support and Help Center Module

Objective:

Provide users with comprehensive assistance and information.

Functionalities:

- Acts as a central repository for FAQs, troubleshooting guides, and user manuals.
- Offers real-time support for user queries and concerns.

Database Management Module

Objective:

Efficiently manage user data for retrieval and reporting purposes.

Functionalities:

- Stores and organizes user profiles, transaction history, and other system-related data.
- Generates detailed reports for system administrators to analyze user trends and system performance.

Conclusion

Each module is intricately designed to fulfill specific objectives, ensuring that Campus Coin operates seamlessly and securely, providing users with a robust and user-friendly financial ecosystem within the university environment.

1.5 System Scope

Campus Coin aims to:

- Simplify and optimize financial transactions within the university community, reducing inefficiencies associated with traditional cash processes.
- Offer a dedicated digital wallet for employees, instructors, and students, enabling them to manage money, make purchases, and access on-campus services through a user-friendly interface.
- Seamlessly integrate into the university's existing IT infrastructure to ensure compatibility with other systems and minimize disruptions during implementation.
- Allow users to add funds to their digital wallets using various methods, including on-campus kiosks, bank accounts, and credit cards, providing flexibility in funding.
- Establish a centralized virtualized financial repository as a hub for managing funds and transactions, offering users a convenient and efficient financial management system.
- Implement user-friendly features such as OTP to enhance usability, making it easy for users to make on-campus purchases at different facilities.
- Strengthen transaction security through multi-factor authentication and cryptographic techniques, ensuring the protection of user accounts and financial information.

2 Similar Systems

2.1 Academic

- **Yuveta Rosabella** [1] The cashless system marks a significant advancement in moving away from physical currency to virtual alternatives like mobile banking and credit cards. However, the global uptake of mobile wallets, a crucial element of this system, remains inconsistent. This research investigates the worldwide impact and challenges associated with adopting mobile wallets, aiming to comprehend the factors influencing adoption rates. Challenges encompass issues like user mistrust, security concerns, and limitations in infrastructure . Specific figures highlight the significance of mobile payments, such as the 95 percent dominance of credit cards in U.S. e-commerce transactions and the expected increase in North America's use from 16 percent in 2018 to 28 percent in 2022. Proposed solutions involve building user confidence, enhancing security measures, introducing regulations, streamlining processes, and addressing infrastructure shortcomings to encourage widespread adoption of mobile wallets as a progressive cashless payment method.

- **Sujith T S, Julie C D[2]** The research paper titled "Opportunities and Challenges of E-Payment System in India," authored by Sujith T S and Julie C D, provides a comprehensive exploration of the digital payment landscape in India. The study encompasses an analysis of various digital payment modes prevalent in the country, including E-Wallets, UPI, Plastic Money, Net Banking, and Aadhaar Enabled Payment System. The authors delve into the multifaceted aspects of these modes, discussing their advantages, challenges, and potential future developments, particularly emphasizing the supportive role of the government. The core problem addressed in the paper revolves around mitigating challenges associated with the adoption of electronic payment systems in India. These challenges encompass difficulties faced by non-technical users, risks related to data theft, issues of overspending, and the presence of intermediaries in the payment process. The research objectives include investigating different modes of electronic payments, analyzing the opportunities and challenges of the e-payment system in India, and identifying the future prospects of digital payment systems in the country. It's noteworthy that the paper relies on secondary information, utilizing diverse sources such as journals, newspapers, books, and relevant websites. However, the specific dataset used in the research is not explicitly mentioned, indicating a reliance on existing literature and information sources for analysis. The paper lacks specific numerical results or percentages; instead, it provides qualitative insights into the current state of digital payments in India and the potential impacts on various sectors. Overall, the study contributes to a nuanced understanding of the complexities surrounding electronic payment systems in the Indian context.

- **Sofian Rosbi[3]** With an emphasis on Islamic financial engineering, the paper "E-Wallet Transactional Framework for Digital Economy: A Perspective from Islamic Financial Engineering" examines the creation and application of an electronic wallet (e-wallet) transactional framework in the context of the digital economy. The study offers a process for the e-wallet payment system with the goal of promoting the use of digital payments for safer, cashless, and efficient transactions. The transactional process is covered by the writers, from

user and service provider registration to payment composition and e-wallet providers' profit-making. The framework aims to increase public knowledge of e-wallet transactions and promote the expansion of small and medium-sized businesses within the digital economy. The advancement of electronic wallet technology is essential for advancing digital money and assisting the activities of the government. A secure and effective transactional framework that complies with Islamic financial principles is required, and this need is addressed in the study. It attempts to address the drawbacks of conventional transactions—such as lack of tracking and security issues—by outlining the benefits of e-wallet systems. Provide a transactional framework for digital economy e-wallet payments Describe the steps involved in completing an e-wallet transaction, such as registering the user and service provider, making a payment, and making a profit. The paper does not explicitly mention the use of a specific dataset. Instead, it focuses on conceptualizing The paper delves into the pervasive influence of mobile payments and electronic wallets on daily life, spotlighting technologies like Square, PayPal Here, and Google Wallet, particularly in Malaysia and China. It underscores challenges such as limited merchant support for specific e-wallets, leading users to rely on diverse payment methods. Examining the APU campus payment system as a case study, the paper highlights the need for an efficient payment system, addressing issues like cash preparation and card loss. Employing the Rapid Application Development (RAD) model, the research aims to optimize electronic payment methods for enhanced user experience. While the Information Gathering Method, utilizing questionnaires, collects user feedback for informed application development, the paper lacks specific datasets.

- **Cheng Ma [4]** The paper delves into the pervasive influence of mobile payments and electronic wallets on daily life, spotlighting technologies like Square, PayPal Here, and Google Wallet, particularly in Malaysia and China. It underscores challenges such as limited merchant support for specific e-wallets, leading users to rely on diverse payment methods. Examining the APU campus payment system as a case study, the paper highlights the need for an efficient payment system, addressing issues like cash preparation and card loss. Employing the Rapid Application Development (RAD) model, the research aims to optimize electronic payment methods for enhanced user experience. While the Information Gathering Method, utilizing questionnaires, collects user feedback for informed application development, the paper lacks specific datasets. However, global projections from Gartner indicate a substantial growth trajectory, with mobile payments surpassing 171.5 billion in the current year, a 60 percent increase from 2011. Gartner anticipates a 617 billion mobile payments market by 2016, reflecting a 42 percent annual growth rate and 448 million users, providing a broader context for the transformative potential of mobile payments.the paper advocates for the continued development and refinement of electronic payment systems, highlighting the significance of user feedback and the application of the Rapid Application Development (RAD) model. The findings underscore the transformative potential of mobile payments and emphasize the need for ongoing innovation to maximize their impact on convenience and efficiency in financial transactions.

- **Norulhuda Abdullah[5]** stated in a paper, titled "E-Wallet: Factors Influencing User Acceptance towards Cashless Society in Malaysia among Public Universities," addresses the persistent challenge of low acceptance of e-Wallets in Malaysia, specifically among students

and employees of public universities in the Klang Valley. The research employs the Unified Theory of Acceptance and Use of Technology (UTAUT) model, a comprehensive framework widely used in technology acceptance studies. The model considers various factors, including Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Security (S), and Trust (T), aiming to unravel their influence on the behavioral intention to use e-Wallets. The study formulates its problem statement by highlighting the existing gap in understanding the factors hindering the widespread acceptance of e-Wallets in Malaysia, despite governmental initiatives promoting a cashless society. The key research objectives include identifying these influencing factors, exploring potential differences in acceptance factors between students and employees, and assessing how these factors impact the behavioral intention to use e-Wallets. To achieve these objectives, the study collects data through an online survey, engaging 400 respondents from six public universities in the Klang Valley. The Likert scale, ranging from 1 to 5, measures respondents' agreement with various statements related to e-Wallet acceptance. The dataset undergoes thorough statistical analysis, incorporating techniques such as Factor Analysis, Pearson Correlation, and Multiple Linear Regression. The results indicate that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy, a measure of the suitability for factor analysis, is 0.944, signifying the appropriateness of the data for such analysis. The Pearson Correlation reveals moderate to strong relationships between acceptance factors (PE, EE, SI, FC, S, and T) and behavioral intention (BI). The Multiple Linear Regression analysis, a powerful statistical tool, produces an R2 value of 0.573, indicating that 57 percent of the variation in BI is explained by the considered independent variables. Importantly, Facilitating Conditions (FC) emerges as the most significant factor influencing e-Wallet acceptance. Key findings of the study highlight that factors like Performance Expectancy (PE), Social Influence (SI), Facilitating Conditions (FC), and Trust (T) significantly influence e-Wallet acceptance. Moreover, an intriguing observation is made regarding differences between students and employees. Students' acceptance is notably influenced by PE, SI, FC, and T, while employees' acceptance is influenced by PE and FC.

2.2 Business Applications

2.2.1 Tapingo

Tapingo provides a mobile app for college campuses that allows students to order food from on-campus dining facilities, pay through the app, and schedule pickup or delivery. The emphasis is on convenience and reducing wait times.

2.2.2 Blackboard Transact

Blackboard Transact offers a comprehensive campus card system that integrates various functionalities, including campus identification, access control, and financial transactions. It enables students to make cashless payments for campus services and goods.

2.2.3 Venmo

Venmo is a popular mobile payment app that facilitates peer-to-peer transactions. Users can split bills, pay friends, and make secure payments, enhancing the convenience of financial transactions.

3 System Description

3.1 User Problem Statement

Cash transactions pose various challenges in a university dining setting. Firstly, cash is more susceptible to theft or loss, presenting a security concern with limited possibilities for recovery. Operationally, accepting cash transactions can lead to inefficiencies, particularly during peak hours, as handling physical money demands additional time. Tracking expenses becomes challenging for students using cash, hindering budgeting and expense management compared to electronic alternatives. Additionally, students relying on cash may face the inconvenience of locating physical ATMs on campus for withdrawals, adding complexity to the payment process. Furthermore, the use of cash hampers the optimization of reward programs and discounts offered by university restaurants, limiting students' ability to maximize benefits from frequent dining. Overall, transitioning to electronic payment methods could address these issues and enhance the efficiency and security of financial transactions in university dining facilities.

3.2 User Objectives

1. **Robust Security Measures:**
    - Security is a paramount concern for users.
    - The system incorporates robust security protocols to safeguard user data and transactions.
    - It employs advanced encryption methods and authentication mechanisms.
2. **Real-Time Transaction Tracking:**
    - Users expect the ability to track their transactions in real-time.
    - The system provides a feature for users to monitor their financial activities promptly.
3. **Intuitive Interface:**
    - The system prioritizes an intuitive and user-friendly interface.
    - Users expect a design that is easy to navigate and understand.
4. **Payment Security:**
    - Ensuring payment security is a top priority.
    - The system implements highly-secured and time-stamped transactions.
    - It adopts state-of-the-art security measures to protect user payments.
5. **Cashless Campus Experience:**
    - The overarching goal is to create a cashless campus environment.
    - Users anticipate reduced transaction times at on-campus locations through digital payments.
    - The system aims to align with current technological trends in campus financial transactions.

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3.3 User Characteristics

The user community for the Campus Coin application comprises a diverse group, including students, instructors, parents and administrators within the university setting. Here are key features:

- **Students:**

Features: Digital wallet functionalities for managing personal finances, making on-campus purchases, and accessing various services. Integration with student-centric needs such as cafeteria payments, bookstore transactions, etc.

- **Instructors:**

Features: May use the application for on-campus purchases, expense tracking, and managing funds allocated for academic purposes.

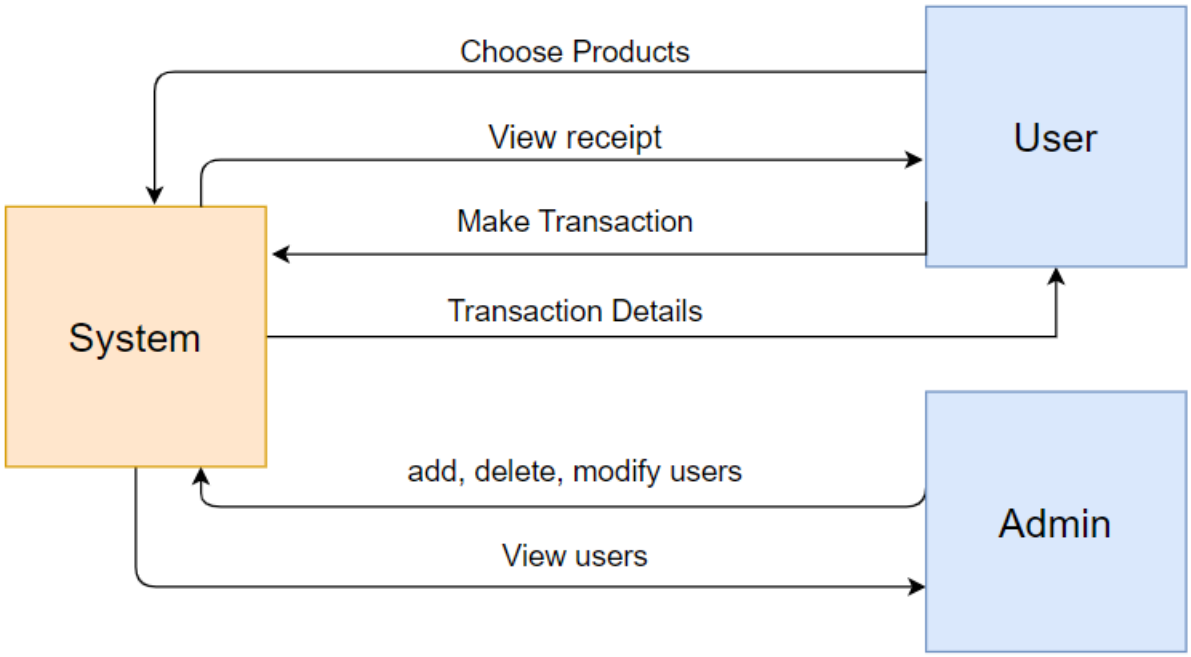
- **Parents:**

Features: May interact with the system for funding student accounts, monitoring transactions, and receiving notifications.

- **Administrators:**

Features: Oversee and manage system permissions, configurations, and user access. Utilize features for system monitoring, security settings, and generating reports.

3.4 System Context



4 Functional Requirements

4.1 System Functions

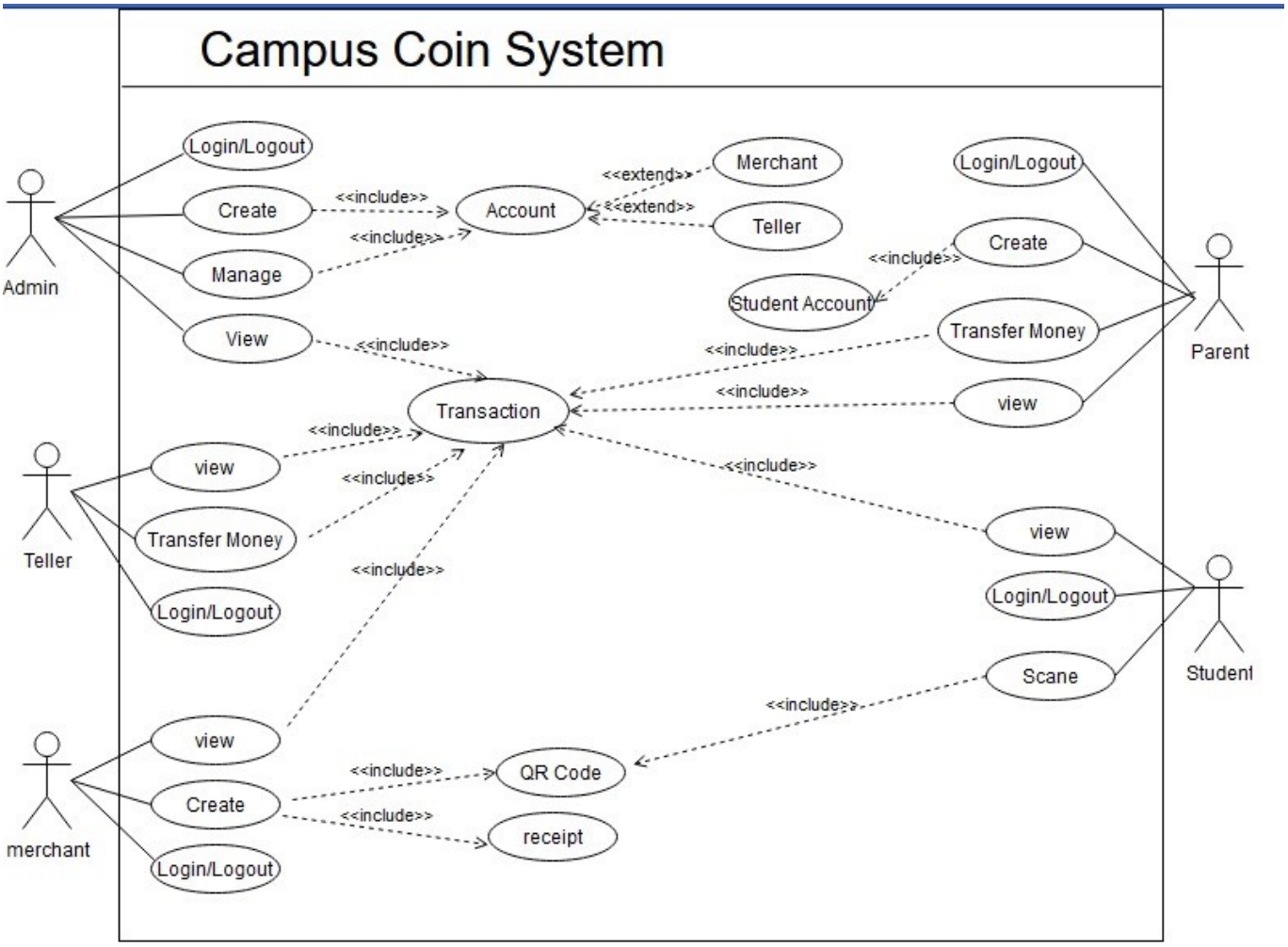


Figure 2: Use Case Diagram

1. User should register a new account by entering required details: university e-mail, personal information.
2. The system shall validate the information and send a verification email to the provided university email address.
3. User should be logged in and directed to setup their wallet.
4. User should enter any credentials related to his user account management which are redirected to our database with different access controls.
5. User shall view his wallet balance, view transactions history.

6. User can add balance by selecting adding balance method.
7. User shall be able to request money from his parent-user account.
8. Parent-user shall be able to transfer cash into child-user account.
9. System should notify the user by the specified balance added on his wallet balance.
10. User should be able to view live non-paid orders, as a notification sample within the order page.
11. User shall pay his live non-paid purchase, clicking on pay button after checking his order recipient (notification sample).
12. The system should notify the user of the cash-transfer happened within the account, remaining balance, timing of the order taken.
13. The user shall be able to contact our support and help center when he faces a problem, troubleshoot within transaction process, error propagation and prevention to occur.
14. The system should notify the user about every promotions, incentives, new updates, and bug-fixes.
15. The user shall be able to edit his account.
16. The user shall be able to log out of his account.
17. The user should be able to delete his account.

4.2 Detailed Functional Specifications

Table 2: SignUp Function Description

Name	SignUp
Code	CCF1
Priority	High
Critical	To make users able to create an account in the system.
Description	Function allow users to create new account.
Input	Email, Full Name, Password, Mobile Number, SSN, Address, (BirthDate).
Output	Boolean: true if account created
Pre-condition	User entered the Email, Full Name, Password, Mobile Number into the required text fields.
Post-condition	User is redirected to the home page, with a successful account created notification.
Dependency	The functions FR01 depends on: Filling all required fields in the sign Up form
Risk	Connection interruption, the data is lost and user needs to re-fill the form

Table 3: Validate Register Form Function Description

Name	Validate Register Form
Code	CCF2
Priority	High
Critical	Making sure user's entered data in the form is valid before adding it in the database.
Description	Checking if required fields of Register Form is valid before adding it to database.
Input	Email, Full Name, Password, Mobile Number, SSN, Address, (BirthDate).
Output	ist of incorrect fields if exist, null otherwise.
Pre-condition	User enter required fields.
Post-condition	User inserted in DB
Dependency	depends on : CCF1
Risk	Database access error , user encouraged to try again later.

Table 4: Create Wallet Function Description

Name	Create Wallet
Code	CCF3
Priority	High
Critical	
Description	Create electronic Wallet to facilitate buying/selling processes within University Campus.
Input	
Output	
Pre-condition	Successful user Registration.
Post-condition	New Wallet is added to DB
Dependency	depends on : CCF1 and CFF2
Risk	Database access error, retry wallet creation until success.

Table 5: Fund Wallet Cash Function Description

Name	Validate Register Form
Code	CCF4
Priority	High
Critical	
Description	Increase wallet balance with specific amount.
Input	Wallet Number , Money Amount
Output	Boolean: true if balance updated successfully
Pre-condition	Verify wallet existence , Money amount value.
Post-condition	Balance increased .
Dependency	depends on : CCF3
Risk	Connection interruption, the data is lost and user is not created.

Table 6: Fund Wallet Fawry Function Description

Name	Fund Wallet Fawry
Code	CCF5
Priority	High
Critical	
Description	Increase wallet balance through fawry transfer process
Input	Fawry Transfer receipt , wallet owner or client account.
Output	Boolean: true if balance updated successfully
Pre-condition	Verify wallet existence , Money amount value.
Post-condition	Balance increased .
Dependency	depends on : CCF3
Risk	Connection interruption, the data is lost and user is not created.

Table 7: Transfer Money Function Description

Name	Transfer Money
Code	CCF6
Priority	High
Critical	
Description	Transfers money amount from one wallet to another upon purchase process
Input	Payment Request (Merchant Account, customer Account, fees, Timestamp)
Output	Boolean: true if balance updated successfully
Pre-condition	Verify customer wallet existence,Merchant wallet existence, verify customer balance
Post-condition	Customer confirmation,customer balance decreased, Merchant balance Increased.
Dependency	depends on : CCF3
Risk	Database error during transfer execution, rollback mechanism should be followed

Table 8: Upload Payment Request details Function Description

Name	Upload Payment Request details
Code	CCF7
Priority	High
Critical	
Description	Upload Payment receipt image
Input	Input Payment Request No. , details image
Output	Boolean: true if image uploaded successfully
Pre-condition	Verify customer wallet existence,Merchant wallet existence, verify customer balance
Post-condition	
Dependency	depends on : CCF6
Risk	Risk Connection interruption during image upload, customer encouraged to try to upload.

5 Interface Requirements

5.1 User Interfaces

5.1.1 GUI

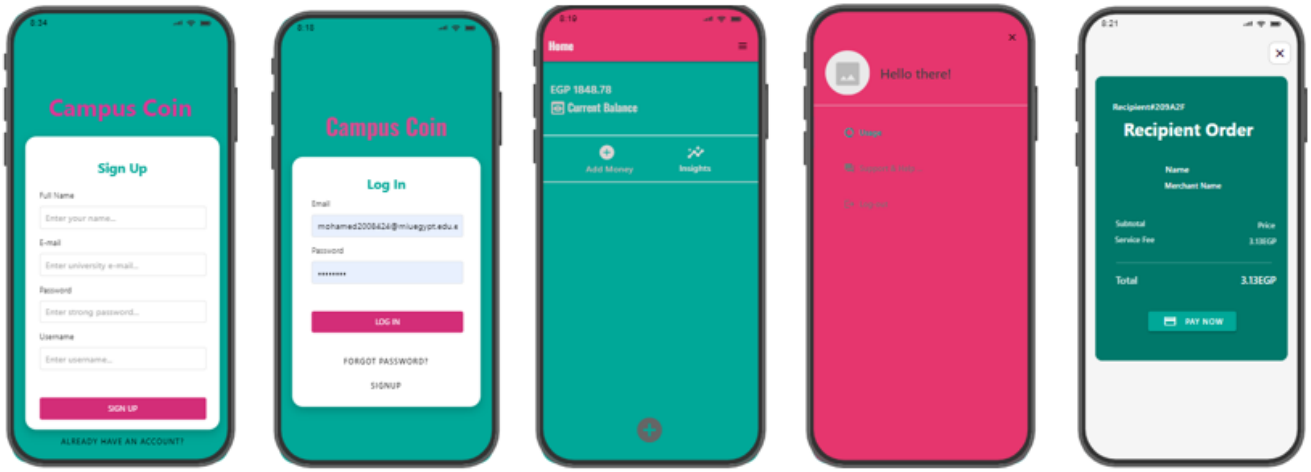


Figure 3: User Interfaces

6 Design Constraints

6.1 Hardware Limitation

The Campus Coin application is designed to run on smartphones with operating systems starting from Android 5.0 or iOS 9.5. It requires an internet connection for online features and relies on high processing speed for efficient task execution and challenges. The processing tasks are offloaded to a server for optimized performance.

7 Non-functional Requirements

7.1 Maintainability

Campus Coin emphasizes maintainability through modular coding, comprehensive documentation, and a flexible architecture, facilitating seamless updates and modifications. This approach ensures efficient system management, allowing administrators to adapt to evolving needs, integrate new features, and maintain compliance with financial regulations without causing disruptions to the university's financial environment.

7.2 Portability

Campus Coin ensures portability with a versatile system, delivering a consistent user experience across devices and platforms. Users can access their digital wallets and conduct transactions seam-

lessly from computers, tablets, and mobile devices, enhancing convenience. This adaptability supports easy deployment and integration within the university's diverse technological ecosystem.

7.3 Security

Campus Coin places a paramount emphasis on security, implementing robust measures such as end-to-end encryption, multi-factor authentication, and secure access controls, including a one-time password (OTP) feature. This additional layer of security enhances the protection of financial transactions and user data. Regular security audits and proactive monitoring contribute to a secure environment within the university's financial ecosystem, instilling confidence in users and reinforcing trust in the Campus Coin platform.

7.4 Availability

Ensuring 24/7 accessibility is crucial for Campus Coin, with scheduled maintenance communicated in advance. The system employs backup servers and failover mechanisms to handle unexpected downtime, ensuring continuous operation. Automated detection and response to server issues, redundancy, and proactive performance monitoring enhance system availability. A comprehensive disaster recovery plan with off-site backups swiftly restores services after major failures, maintaining a robust and consistently accessible financial platform.

7.5 Data Integrity

Campus Coin ensures data integrity by employing advanced cryptographic techniques to safeguard the accuracy and consistency of financial transactions and user information. The system implements checksums and data validation mechanisms, coupled with real-time monitoring, to detect and rectify any potential anomalies, preserving the reliability of the data within the university's financial ecosystem. This commitment to data integrity contributes to the overall trustworthiness and dependability of the Campus Coin platform.

7.6 Usability

Campus Coin enhances the financial experience in universities, prioritizing security, efficiency, and user-friendly interactions. Tailored for administrators, IT professionals, and students, it modernizes transactions for a seamless, technologically advanced financial environment within higher education.

8 Data Design

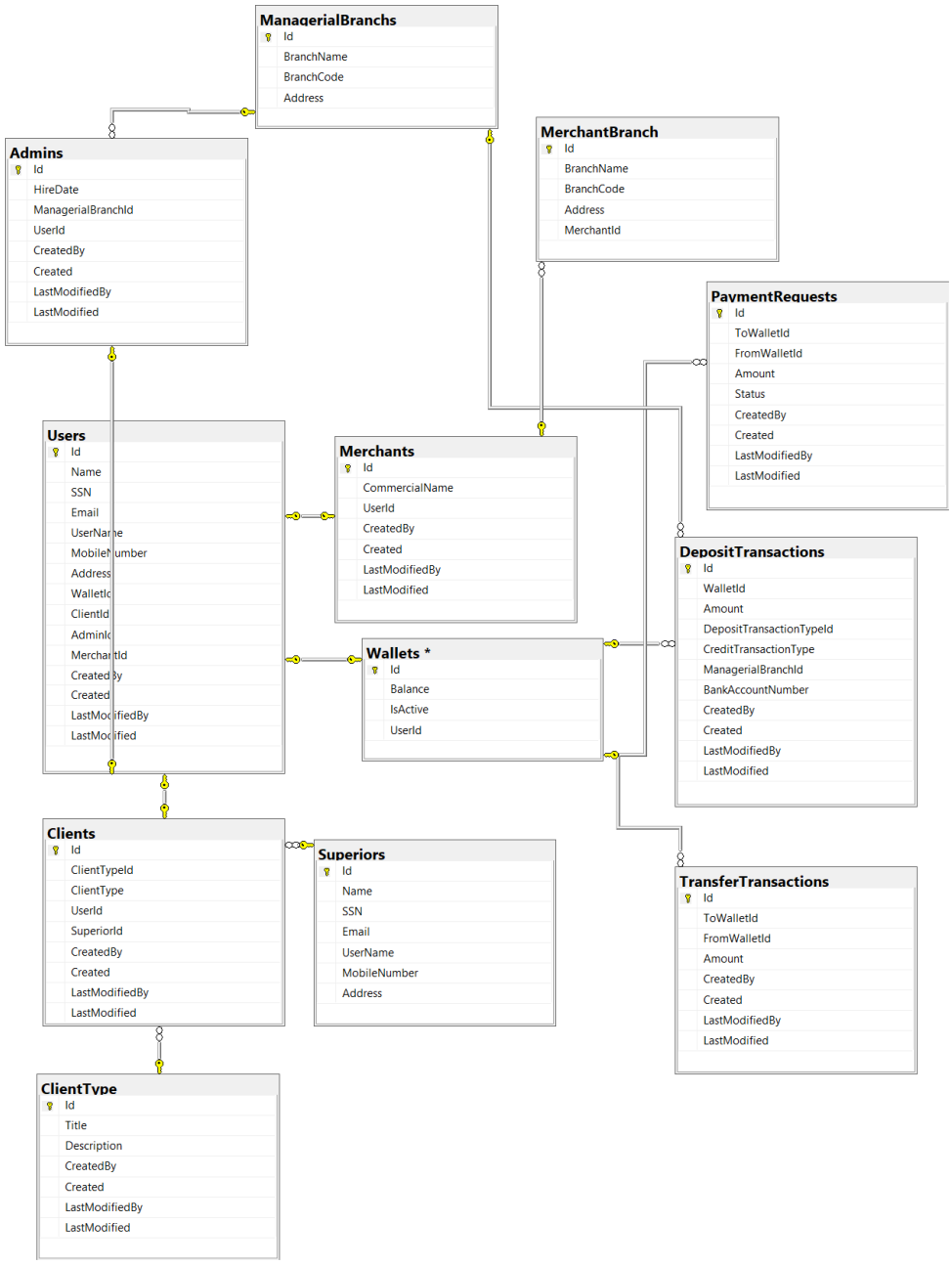


Figure 4: Database Diagram

8.1 Database design description

The Entity-Relationship (ER) diagram outlines a database structure for a financial or banking application. It includes tables like Admins, Users, Clients, and Merchants, representing entities and their relationships. Admins store details about system administrators, Users contain general user information, Clients specify client types, and Merchants represent businesses or individuals selling goods. Important tables like Wallets track user balances, and PaymentRequests record payment details. The diagram showcases relationships between tables, denoting one-to-one, one-to-many, or many-to-many connections. Foreign keys link tables for data integrity.

Key tables, marked by asterisks, likely involve financial transactions or are vital to the application. Each table includes identifiers, personal information, and metadata. For instance, Wallets store balances and status, while PaymentRequests detail wallet transactions. The diagram acts as a blueprint, illustrating the structured organization of data and interactions within the system. It emphasizes relational connections through foreign keys for consistency and integrity.

9 Preliminary Object-Oriented Domain Analysis

9.1 Inheritance Relationships

In Campus Coin, clients, merchants, and admins exhibit an inheritance relationship as diverse user types. While sharing common attributes, each has distinct roles—clients engage in transactions, merchants manage products, and admins oversee system functionality.

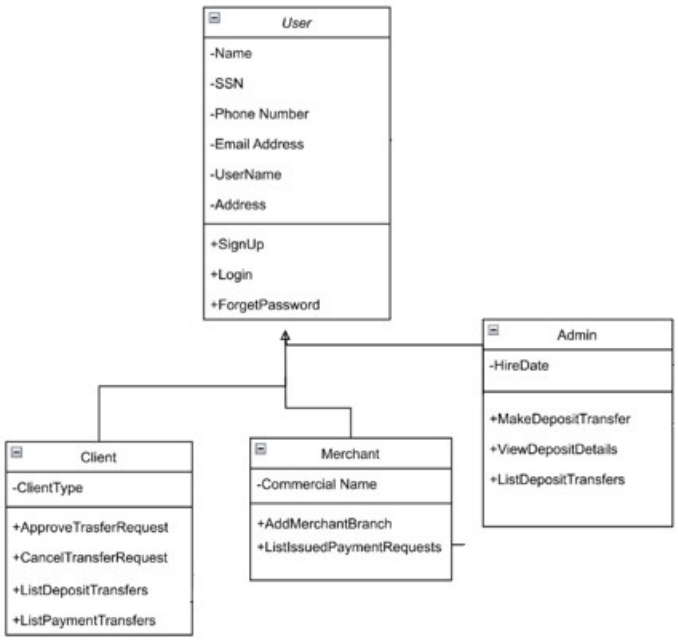


Figure 5: Inheritance Relationship

9.2 Class descriptions

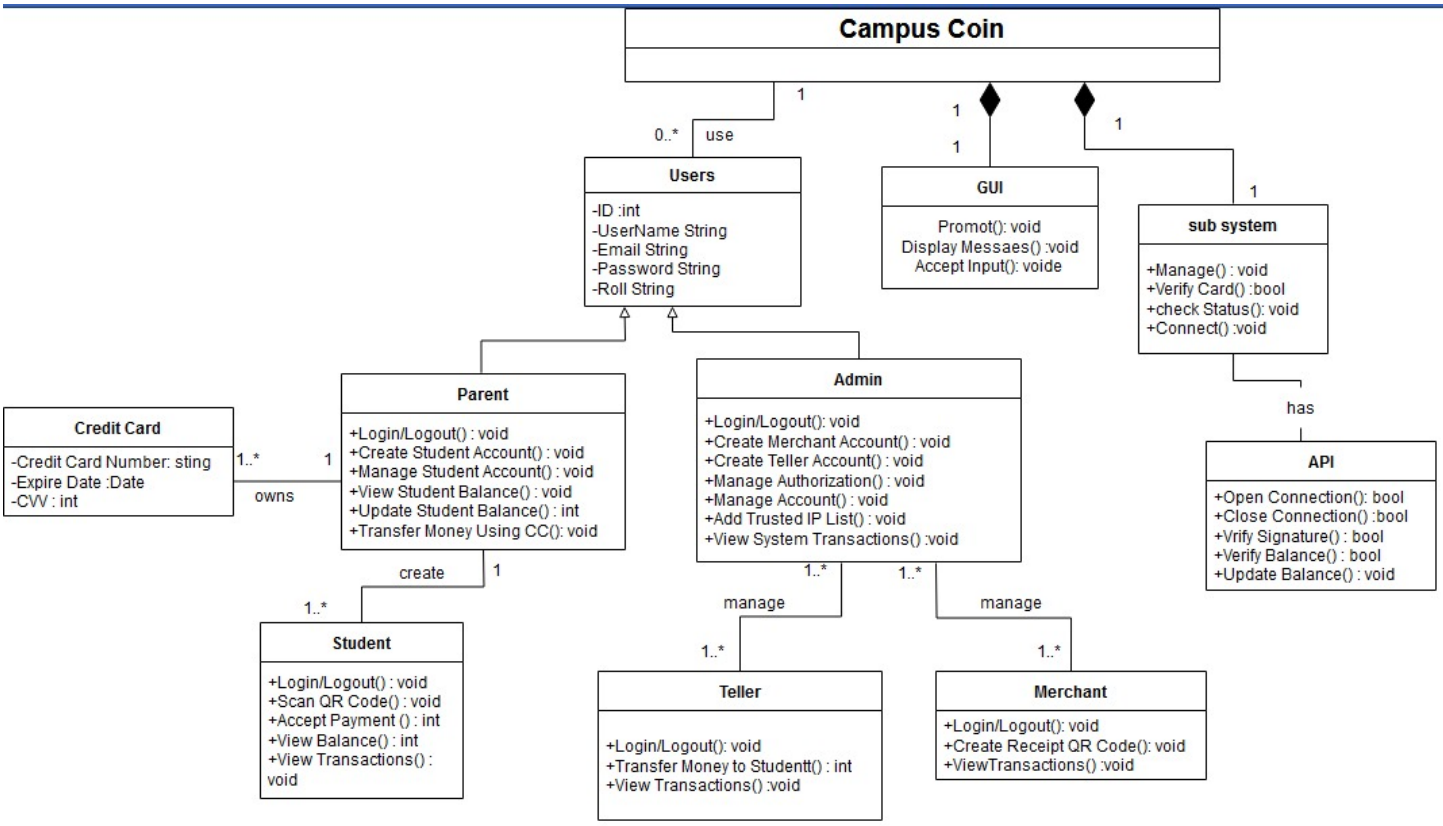


Figure 6: Class Diagram

10 Operational Scenarios

1. Scenario 1 "Admin Transaction Oversight: "
An administrator logs into the system dashboard to monitor live transactions, ensuring adherence to security and policy standards. They use system tools to troubleshoot and resolve transaction errors, reviewing and approving/denying money transfer requests between parent and child accounts.
2. Scenario 2 " New User Registration and Wallet Setup: "
A new user initiates the registration process by entering university email and personal details. Upon validation, a verification email is sent. After logging in, the user sets up their wallet, entering relevant credentials redirected to the database with access controls.
3. Scenario 3 " Transaction and Balance Management: "
A registered user logs in to view their wallet balance and transaction history. The user adds balance through the selected method. Additionally, they can request money from a parent-user, who can transfer cash into the child-user account.
4. Scenario 4 " Order Placement and Payment: "
The user views live non-paid orders as notifications within the order page. After checking order details, the user proceeds to pay. The system notifies the user of the cash transfer, remaining balance, and the timing of the order.

11 Project Plan

Task	Start Date	End Date	Duration	Role
Idea and Supervisor	13-9-2023	14-11-2023	61 days	All Team Members
Information Collection and Researches	22-9-2023	14-11-2023	52 days	All Team Members
Survey And Proposal	10/11/2023	20-11-2023	10 days	All Team Members
Preprocessing Stage	10/11/2023	21-11-2023	11 days	All Team Members
Classify Dataset	30-11-2023	13-12-2023	13 days	All Team Members
SRS Preparation	18-12-2023	14-1-2023	26 days	All Team Members
SRS Presentation	17-1-2024	17-1-2024	1 day	All Team Members
SDD Preparation	10/1/2024	10/3/2024	60 days	All Team Members
SDD Presentation	12/2/2024	21-2-2024	9 days	All Team Members
Mobile Application Development	3/3/2024	8/4/2024	35 days	All Team Members
Technical Working Implementation	22-2-2024	17-4-2024	55 days	All Team Members
Final touches in the prototype	17-4-2024	24-4-2024	7 days	All Team Members
System Prototype Submission	24-4-2024	30-4-2024	6 days	All Team Members
Technical Evaluation	1/5/2024	7/5/2024	7 days	All Team Members
Test and Validate	1/5/2024	15-5-2024	10 days	All Team Members
Final thesis	24-5-2024	12/6/2024	18 days	All Team Members

Figure 7: Time Plan based on MIU Calender

12 Appendices

12.1 Definitions, Acronyms, Abbreviations

SRS - Software Requirements Specification

UTAUT - Unified Theory of Acceptance and Use of Technology

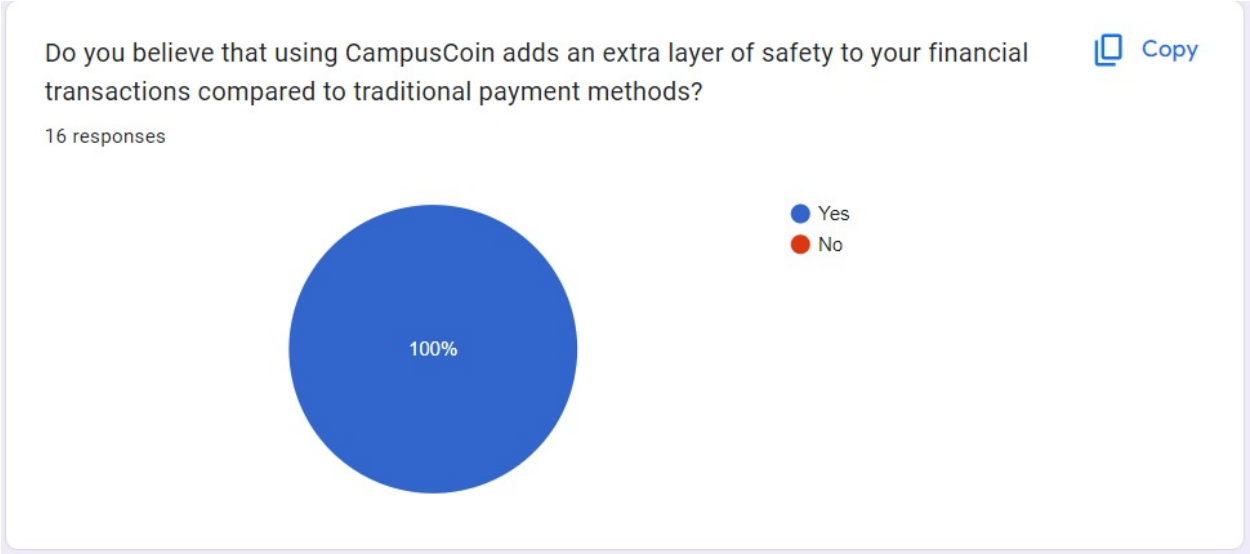
PE - Performance Expectancy

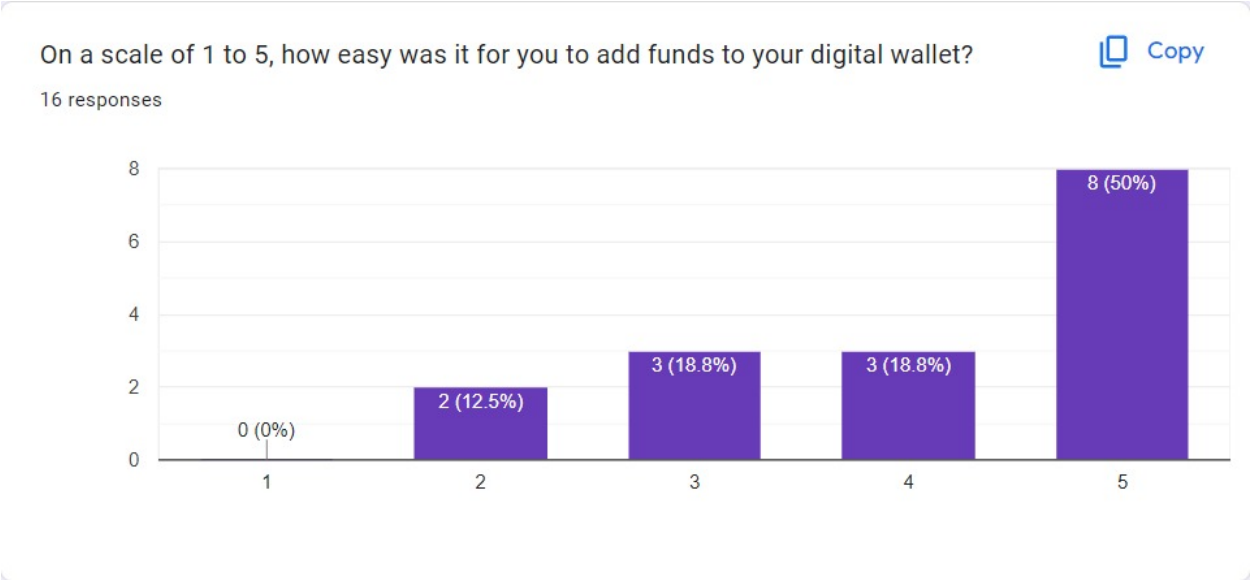
API - Application Programming Interface

GUI - Graphical User Interface

FAQs - Frequently Asked Questions

12.2 Supportive Documents

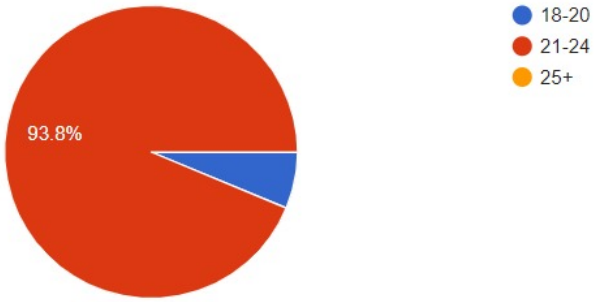




Age

Copy

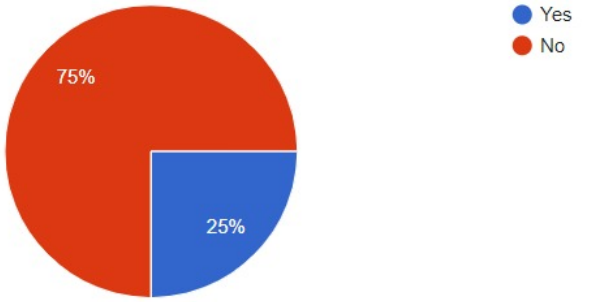
16 responses



Have you used digital wallet for any transactions on campus?

Copy

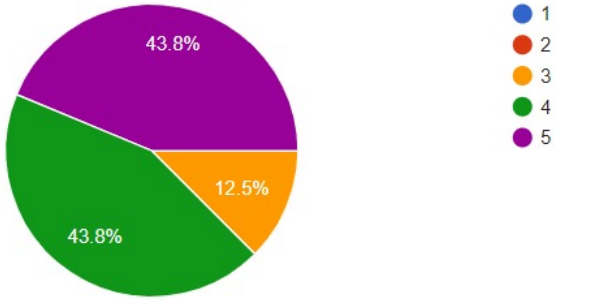
16 responses



To what extent do you think CampusCoin effectively communicates and educates users about security practices and features

Copy

16 responses



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