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MAKERERE UNIVERSITY BUSINESS SCHOOL

DEVELOPING A PERSONAL FINANCE MANAGEMENT SYSTEM FOR UNIVERSITY STUDENTS A CASE IN POINT MUBS

BY

NAME	REGISTRATION NO.	PHONE NUMBER
Isaac Odoi Geno	23/U/0422	+256783723196
Marvin Joseph Senoga	23/U/1383	+256765932452
Patricia Banura	23/U/24622/PS	+256762932802
Sheillah Nkinzi Kagga	23/U/08621/PS	+256756855173
Ronald Ssempijja Ssemanda	23/U/17535/PS	+256785381330

Supervised by

Ms. Hillary Nagawa

Department of Applied Computing & IT

**A Project Proposal Submitted to the Faculty of Computing & Informatics of Makereres
University Business School in Partial Fulfillment for the Award of the Degree of Bachelor of
Business Computing of Makerere University**

November, 2025

DECLARATION

We, the undersigned, declare that to the best of our knowledge, this proposal is our original piece of work, and has never been published and/or submitted for any award in any other University or Higher Institution of Learning.

NAME	REGISTRATION NUMBER	SIGNATURE
Isaac Odoi Geno	23/U/0422	
Marvin Joseph Senoga	23/U/1383	
Patricia Banura	23/U/24622/PS	
Sheillah Nkinzi Kagga	23/U/08621/PS	
Ronald Ssempijja Ssemenda	23/U/17535/PS	

Date:

APPROVAL

This project proposal has been submitted with my approval as supervisor and my signature is here appended:

Signed.....

Date:

Ms. Hillary Nagawa

Makerere University Business School

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INTRODUCTION

1.1. Project Background

Financial management is the strategic planning, organizing, directing and controlling of financial resources to achieve an organisation's objectives efficiently (Rahimi, 2025). Effective financial management is beneficial in allocating resources, managing risks, achieving financial goals and ensuring long term stability. Lack of financial management can lead to overwhelming debt, inability to meet financial goals, chronic stress which can affect both physical and mental health. For businesses, poor financial management can result in excess expenditure, capital mismanagement and missed opportunities, potentially leading to failure. Most businesses across the globe carryout financial management in order to improve profitability and value, enhance efficiency and ensure regulatory compliance.

Personal finance management is concerned with the management of an individual's financial resources, which include income, expenses, assets and liabilities (Intellipaat, 2024). The key aspects of personal finance are; managing income, spending, budgeting, saving, investing and debt management. This helps individuals make informed decisions on how to spend and save. It has been shown that a commitment to good financial behavior reduces one's borrowing habits which results in higher rates of saving and greater success in investment. Nearly 70% of adults budget or use finances in developed countries to manage income, savings and investments proactively (OECD, 2022). The financial literacy campaign and the saving scheme are being introduced to fast-growing economies, in an effort to promote good financial behaviour and drive countries toward development, but particularly the countries which have been at the verge of increasing. The picture is not the same in Africa. Mobile money and microfinance have made it easier for people to access financial services, but proper preparation still takes a lot of people. The last few statistics by FinMark Trust (2021) state that the number of budget regular consumers are only around a third in sub-Saharan Africa. The same holds true in Uganda. Despite 60% of Ugandans saving in one form or another, only 7% of those people retain their money in banks, and 17% like to keep cash at home (FinScope Uganda, 2023). The figure is even worse and approximately 70% of people in Uganda spend more than they earn, indicating that budgeting and managing money remain big challenges in the society. Some personal finance experts also think that "money is 80% behaviour

and 20% head knowledge”. The direct link between personal finance health, measured in terms of increased purchasing power, higher saving, lower household indebtedness and improved financial stability, the national economic growth and financial stability. For the above reasons, this study attempts to design the digital expense tracking and budgeting system to improve students’ individual financial management. The aim of the solution will eliminate the many problems that exist within organizations: bad financial planning, bad habits regarding budgeting, spending for fun without saving and stressed to spend well when not budgeting. To enable students with easy reading and management of your budget, and a structured user friendly platform, the scheme will help students to manage their finances, to act smartly in an environment which encourages them to maintain their financial stability for a sustainable future. So the purpose of this study is to develop a digital expense keeping and budgeting system for students that can save them money personally. It can also help with frequent issues like bad budgeting, unlimited spending, lack of saving discipline and financial strain due to poor planning. The system, will help in facilitating an ordered and easy to handle system for the student to track/look after their financial information, will help with the support in informed decision making, help in financial sustainability down the line..

1.2. Statement of the Problem

Students are often new to personal finance. Usually they feel the need to make spur-of-the-moment purchases but do not know how to budget financially and have little experience with budgeting (Muwonge et al., 2020). For example, the majority of students make calculations through informal means (mental calculation, notebooks) which are impractical for life with irregular income or modern urban lifestyle (Muwonge et al.). There are several factors to consider here, but most notably, not all students are accustomed to budgeting for themselves and some are also non-income earners. Poor financial management is caused by lack of exposure to financial tools and programs that teach financial management, biases, peer pressure, or market trends. For example by UCU research reports (2024), students with high financial knowledge are prepared (83% budgeting) and expenditure (72% expenditure) planning for their expenses, vs just very little to very low for the poor literacy. Poor discipline over money can cause us to carry that habit into adulthood which in turn can negatively affect independence (sufficiency), saving, investing and entrepreneurship. Hence, a digital financial management system with personalized tracking of expenses, budget

support, and saving assistance is proposed for financial education. The system intends to equip students to become owners of their money use every day and to help them prepare for more extensive financial objectives such as opening their business or making preparations for a life with an uncertain future, which will enhance further education on finance knowledge and responsibility management for one's money that is pertinent to fulfilling SDG 8 (Decent Work and Economic Growth). Good personal finance management teaches individual disciplined habits which transform into worker and consumer, and entrepreneur for the future which create jobs and strengthen the economy, all of which fuel job creation and economic growth.

1.3. Project Goals and Objectives

1.3.1. Project Goal

To design and develop a personal finance management system.

1.4. Project Objectives

- To examine the personal finance management challenges faced by university students of Mubs.
- To design a digital financial management system.
- To evaluate the effectiveness of the developed system

1.5. Project Scope Summary

1.5.1. Geographical Scope:

This project revolves around the Makerere University Business School (MUBS), Uganda in its geographical context. Choosing MUBS as the site of study enables the research to focus on a large, diverse student population actively managing finances for the first time. Moreover, the university's urban environment makes it easy to use digital platforms and mobile money tools, which suits a school's need to test and build the system.

1.5.2. Time Scope:

This project has a duration of one semester (four months). This time is in sync with the academic calendar and lets the system be tested and reviewed in real time as the students try to budget for tuition, basic living and personal spending. It also offers a suitable timeframe for data gathering, system building and user feedback, with the same depth and accuracy.

1.5.3. Technical Scope:

The technical scope will center on designing the personal finance management system. Income and expenses tracking, savings goals, spending alerts, and basic financial reporting systems of the system shall be integrated into my plan. It will implement web technologies, including HTML, CSS, JavaScript, PHP and SQL, to create a user-friendly and accessible platform. Students will also be able to track their finances at any time from their mobile phone as well as with simple dashboards designed for those who aren't on mobile.

1.6. Project Justification

Numerous Uganda university students are challenged dealing with their personal finances. Their struggle with budgeting, controlling their expenditure, and making saving/investing decisions is not uncommon and it can lead to debt which causes some of them financial stress. Research indicates that young adults tend to have difficulties in budgeting well, keeping records of their spending and planning money matters and the way they save or invest making it difficult to avoid debt and financial strain (Nanziri & Leibbrandt, 2021; Lusardi & Mitchell, 2023). The rapid increase in digital finance and mobile money platforms is creating an opportunity for practical tools to enable students to improve their financial behaviors. Financial literacy is being increasingly emphasized, especially among young professionals moving towards entering the workforce or considering entrepreneurship. Not only does the study in this paper teach students how to manage their finances, but it also provides benefits to all who are concerned, such as universities, legislators, and financial institutions, to invest heavily in building up young people's financial literacy programs. These two items are closely related and this study supports SDG 8: Decent Work and Economic Growth by educating students to make informed financial choices that aid them in economic independence and in later life when they are engaged in productive activities.

1.7. Anticipated Significance of The Project

To Students;

It will help university students learn about managing money correctly in a way that they can do in reality. Budgeting, monitoring spending, regular savings and sensible investing can shield students from unnecessary debt as well as spontaneous spending. It is a place to develop skills in financial

discipline when you are young and set the stage for independence and stability in the years after graduation. Aside from creating overall better financial security, SDG 8 (Decent Work and Economic Growth) will be promoted by the project as it fosters financial discipline and autonomy for a graduate transitioning to tomorrow's workforce.

To Policy Makers and Educational Institutions;

This research can be beneficial for policymakers and university leaders who should understand the financial behaviors and dilemmas of young adults. Such insights will help for the development of financial literacy programmes, as well as for the support for such initiatives as those to promote the responsible management of money, and also guide the direction in which students should be economically empowered.

To the Community and Society;

When students handle their finances effectively, the payoff goes beyond their lives. Graduate students who are financially responsible are more inclined to start businesses, invest money judiciously and add value to the economy. Over time this builds stronger communities, spurs economic growth and serves the aims of SDG 8: Decent Work and Economic Growth by raising a generation of efficient, independent and socially responsible adults.

To Financial Institutions and Technology Providers;

The results of this study also suggest opportunities for banks, fintech firms and mobile money providers to offer products to young adults. Knowledge of student behaviors assists these institutions in creating tools and solutions that can enhance financial inclusion, lead to improved savings, and foster trust in formal financial systems.

1.8. Project Assumptions

The research team based on the assumption that all the students in Makerere University Business School (MUBS) possess smart gadgets and reliable internet that have made possible their use of the suggested personal finance solution.

It was implied, too, that mobile money services like MTN MoMo and Airtel Money are well-established and available to students, giving reasonable ground for system testing and application.

It also assumed that learners have rudimentary level of financial literacy with regards to their course work and they are willing to get involved in the research work. Participating will entail activities including surveys, interviews and usability testing where they are anticipated to honestly and accurately report their financial practices and behaviors.

To conclude, from the research stage, the project works under the premise that the required software tools, hardware devices and online platforms for system development and data collection will exist and work properly during analysis.

It is assumed financially that sufficient funding will be provided to facilitate the design, testing, and evaluation phases of the system.

To facilitate pilot testing and feedback collection, the project assumes cooperation from MUBS management in providing access to university facilities, computer labs, and student participants structurally.

REVIEW OF LITERATURE

2. Introduction

In this section of the proposal, the study reviews previous research, scholarly articles, and relevant publications related to financial management and personal finance. This aims to ascertain what other scholars have written, connect those insights to this study, and identify the gaps. The review is structured according to the theme of evolving financial management, personal finance, university students and personal finance, challenges faced by students, and current personal financial management systems. Each sub-section lists important contributions made by scholars, cross-compares different perspectives, and considers how what has been covered in the new study adds to or separates itself from the existing findings.

2.1. Evolution of Financial Management

For generations, financial management was commonly considered to be the structured planning, organization, direction, and control of financial resources within an organization. Digital transformation has been in the spotlight of scholars in recent years for shifting the practice away from the traditional manual accounting techniques and towards the digital systems that are needed.

Thottoli (2023) notes that in the financial world today, it is possible to say that digital transformation is very much interlinked with financial management, and that companies today are depending (increasingly) on automation, cloud accounting, and real-time analytics to drive better decision making. Likewise, Li (2025) notes that digital finance has sped up companies' digitalization process, offering both efficiency-enhancing prospects and challenges associated with cyber security and governance. The resulting changes not only have turned financial management from a back-office task but also have turned it into a strategic undertaking and have contributed to the stability of firms in turbulent economic environments. The themes redefining the paradigm in financial management can be found as digitalization, automation, and integration with financial ecosystems (Thottoli, 2023; Li, 2025).

2.2. Personal Finance

Personal finance is conceptually distinct from financial management, and is primarily centered on personal and household money-related decisions relating to budgeting, saving, investing, and managing debt. Di Domenico et al. (2022) define personal finance as a self-regulatory process of decisions driven by psychological factors, like self-control, financial literacy, and goal orientation. New research highlights the extent of financial literacy in influencing behaviour but emphasises that knowing things doesn't cut it. Bai et al. (2023) state that mental budgeting and self-control have significant impact on saving behaviour, and financial education interventions work best if linked to behavioural tools. This dichotomy between organisational financial management and personal finance at the individual level is crucial because personal finance is not only conditional by income, but also by the capacity to choose well, and to act decisively. Recent literature indicates that sound personal finance practices are linked to rising the savings rate, lower debts borne by individuals and increased resilience to financial shocks (Di Domenico et al., 2022; Bai et al., 2023).

2.3. University Students and Personal Finance

University students are an unusual group to study since their experience of financial independence was typically for the first time but they are also usually constrained by their small means. Recent research has found that students all over the country struggle to budget, save for essentials, and not binge-buy. Studies in Uganda, from 2024 to 2025 by Uganda Christian University (UCU) among several international universities, found that students in Uganda had low to moderate financial literacy, that directly relates to budgeting and saving behaviour (UCU, 2025). For instance, students with better-defined literacy scores were more likely to enter formal saving

behaviour and to use basic investment policies. These observations are supported by international studies which found that student finances are a struggle with budgeting discipline and they often prioritize immediate consumption, rather than long term financial stability. The Global Financial Literacy Excellence Center (GFLEC) conducted a study in 2022 investigating the Mint personal finance app among college students. The GFLEC research that examined the Mint personal finance app on campus found that integrating digital financial tools with educational modules led to better financial awareness and behavioural patterns (Davis et al., 2021). These studies highlight the need of financial literacy for students as well as how technology-enabled interventions can help foster better financial behaviour.

2.4. Challenges Faced by University Students in Financial Management

The vast majority of recent literature on the financial situation of university students is in this context. Students who are so caught in such difficulty often have little to no predictable income, irregular income flow, large shares of parental benefits, and excessive discretionary spending. These barriers are exacerbated by peer pressure and by lifestyle norms that drive students beyond their means. Weak budgeting ability and insufficient knowledge related to saving and investing are prevalent in Ugandan university contexts associated with financial instability among students (UCU, 2025). As with other countries, students face limited resources and new consumption needs, making it difficult for students to cope with limited resources and growing consumption needs (Davis et al., 2021). Researchers have published a catalogue of solutions to these. One of them is that the inclusion of financial literacy programs into the academic program curricula has already been shown to improve students' financial management knowledge. The latest research suggest that knowledge-based interventions typically do not suffice. Bai et al. (2023) contend that behavioural tools such as digital budgeting apps and nudges towards automatic saving are significant in bridging knowledge with implementation. The GFLEC Mint trial contributes to this literature by establishing that pairing brief academic modules with app-based budgeting tools had a positive effect on financial behaviours for student respondents (Davis et al., 2021). However, there are still gaps in what is currently being done, most notably in low-income contexts like Uganda where most students rely on mobile money instead of established banking systems. The above has implications for what sort of context-sensitive tools are required to combine mobile money applications with financial literacy and behavioural design.

2.5. Existing Personal Financial Management Systems

Emerging literature on PFM systems like Mint, You Need A Budget (YNAB) and a number of fintech apps assess the effectiveness of such systems. Mint has been extensively studied in academia revealing an easy-to-access application for budgeting and financial monitoring (Davis et al., 2021). In the case of YNAB (Investopedia, 2023), which as a medium does not receive academic study as often, it has a known strong behavioural framework and a strong behavioural challenge model that demands that users ‘assign every dollar a job’. But since both platforms are mostly developed for banked demographics in developed capitalist countries, they cannot be adapted to students in Uganda who use mobile money services, who are mostly dependent on mobile money providers.



Mint. (n.d.). Spending over time [Mint system dashboard]. Mint. <https://mint.intuit.com>

In the African setting, fintech like Chipper Cash and Eversend are used by students. Most of the apps were payment and transfer systems, but some have added saving features. These technologies are commonly available and adapted to the local financial habits, but they do not have the full budgeting and behavioural capabilities of apps such as Mint or YNAB (Eversend, n.d.). Even mobile money providers like MTN MoMo and Airtel Money are dominating student transactions in Uganda but they only provide a small degree of personal finance management options, such as basic transfers and airtime purchases.

System	Strengths	Weaknesses
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Mint (Intuit)	Strong budgeting UI, automatic transaction import, widely studied in student pilots (GFLEC, 2022)	Requires linked bank accounts/credit cards for best functionality; privacy concerns; less suitable where mobile money dominates (Alawan, 2020).
YNAB (You Need A Budget)	Active, behavioural budgeting philosophy (assign every dollar a job), strong user community (Xiao et al., 2019).	Paid subscription; assumes regular banking flows; steeper learning curve (Sabri & MacDonald, 2020).
Chipper Cash	Low-cost cross-border transfers; wallets and card features; widely used in Uganda and regionally (Ouma et al., 2017).	Primarily payments/investments; limited PFM budgeting features; not primarily a budgeting app.(Alawan,2020)
Eversend	Multi-currency wallets, cross-border capacity, savings/virtual accounts for remittances (Ouma et al., 2017).	Focus on transfers/currency exchange—PFM features limited compared to Mint/YNAB. Integration with mobile money useful but budgeting features limited (Nguyen et al., 2021)
Local mobile money & bank apps (MTN MoMo, Airtel Money, Bank apps)	Very high penetration among students in Uganda; enable payments, airtime, and sometimes savings (Kintu et al., 2022)	Limited budgeting tools or analytics; fragmented ecosystem (many wallets, few unified views) (Aboagye & Jung, 2018).

Comparative analysis therefore reveals a gap in the market: existing global PFM systems are not tailored to the realities of mobile money–driven economies, while local fintechs do not provide the full suite of budgeting and behavioural support needed to change student financial behaviours. The literature suggests that an ideal solution for Ugandan students would combine mobile money integration with budgeting and saving tools, while embedding behavioural nudges and financial education to improve literacy and practice.

2.6. Conclusion

The literature review revealed some clear trends as well as the gaps to be addressed in the financial management of university students at university level in Uganda and outside of it. The finance industry has also undergone a rapid transformation due to digitalisation where personal finance research pays attention to behavioural triggers along with knowledge. Research focusing on students demonstrates that students with low literacy, poor budgeting, and peer pressure consistently face various financial hardships, and there is potential to improve behaviour through digital interventions. Finally, previous PFM systems often have limited context-specific relevance or no incorporated behavioural design fit the needs of students growing up in low-banking environments. Together, these findings provide rationale for the design of a student-driven and financially responsible financial management system that leverages mobile money services, behavioural tools, as well as financial education, to cater to the specific challenges encountered by university students in Uganda.

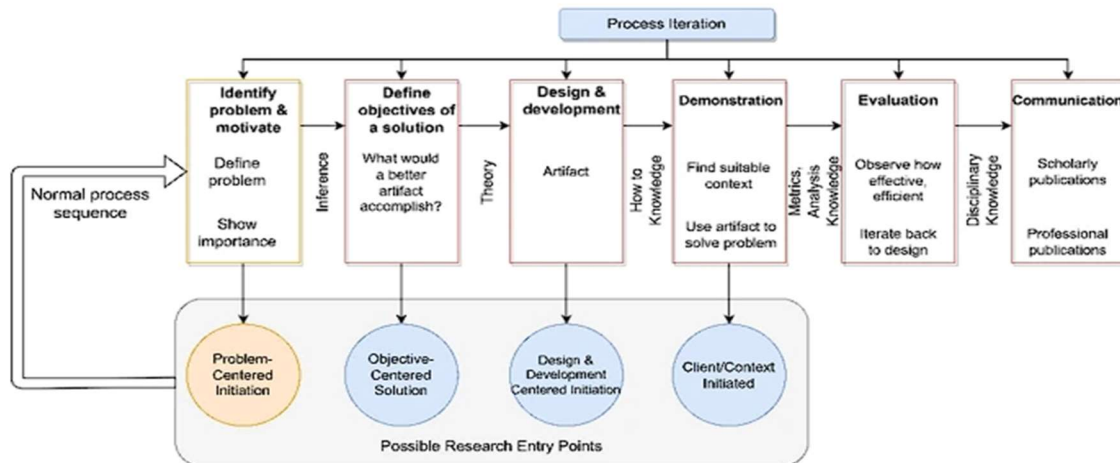
PROJECT METHODS

3. Section Introduction

The methodology of research on the personal finance management program is introduced and defined here, as intended to help the university students in tracking their expenses and budgeting efficiently. The process uses Design Science Research (DSR) in order to develop a feasible artifact, while implementing participatory strategies in order to capture and meet the real-world needs of the population in question.

3.1. Research Design / Research Approach

Design, development, and evaluation of the personal finance management system will follow Hevner et al.'s (2004) Design Science Research (DSR) approach in the project team. DSR is well-matched to this project because it emphasizes solid academic investigation as well as the construction of innovative new IT artifacts. By adopting this approach, the prototype continues to develop through iterative development with continuous feedback; it can thus meet university students' financial management requirements with continuing relevance.



[A Design Science Approach Model \(Peppers et al. 2017\)](#)

DSR Cycle Applied to the personal finance management system:

DSR Stage	Research objectives to be addressed	Proposed methods	Expected results
1.Problem Identification Motivation	a) To study and analyze the current financial management challenges faced by Mubs students.	Observation User meetings Interviews	A clearly articulated problem statement and identification of the main financial challenges faced by students.
2. Define Objectives of a Solution	a) To define system objectives such as real time expense tracking, automatic spending	Group Discussions User Meetings Participatory Appraisal	A refined list of objectives that guide the design

	categorization, personalized budgeting advice, and educational content on financial literacy.		and align with user needs.
3. Design and Development	To develop a preliminary prototype .	Use object-oriented design principles and participatory prototyping techniques (using UML, wireframes, and user journey maps). using RAD methodologies with open-source tools (Android Studio, Firebase)	-Logical Design of the system System elaboration diagrams -Physical design interfaces -Sample Code -A functional prototype of the personal finance management system.
Demonstration	To demonstrate the prototype to a selected group of students and academic advisors. - Conduct pilot testing sessions to observe real-time interactions		User feedback and practical insights into functionality and usability.
5. Evaluation	Presentation of the system and project report to the supervisors and faculty for evaluation.		Successful defense of the system to supervisors and faculty

6. Communication	<ul style="list-style-type: none"> - Completion of project report, upload on e-learning and presentation of the system to faculty. - Present the project in academic forums and, if applicable, at MUBS Research Week. 	Presentation through video demonstrations, physical screen sharing, online presentations of team members.	Completion of project report, approval by supervisor, upload on e-learning system, presentation.
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3.2. Project Organization [Client]

This research project target audience is the students of Makerere University Business School (MUBS). The proposed system aims to improve the financial management skills of students through the provision of tools for budgeting, the monitoring of various streams of income and targeted financial advice in personal terms. It is consistent with the institution's vision to develop graduates with a sound financial literacy and effective digital skills.

Stakeholders

End users: The main end users are undergraduate students between 18 and 25 years old with financial independence and frequent personal financial decisions. At university level, this group is the most involved in operations at MUBS, a considerable part being ready for piloting.

Project Owners: This study's project owners are MUBS students who are currently majoring in Bachelor of Business Computing. The team work under the direction of the Faculty of Computing and Informatics is at the academic level supported by methodological and technical assistance at all work stages of the study.

Population

According to the official Makerere University Business School website (2025), the institution has an estimated 30,000 students across diploma, undergraduate, and postgraduate programs. For the purposes of this study, the focus will be on the undergraduate population, which constitutes the majority and is most susceptible to financial management challenges. An initial pilot phase will target a representative sample of these students to test and refine system functionality before full-scale deployment.

Inclusion and Exclusion Criteria

✓ Inclusion Criteria

- Students aged 18–25 years currently enrolled in undergraduate programs at MUBS.
- Students who actively manage their personal finances, including budgeting, saving, or spending their own income or allowances.
- Participants who provide informed consent to take part in the research or system testing.

✓ Exclusion Criteria

- Students below 18 years or above 25 years of age.
- Postgraduate and diploma students, whose financial responsibilities and behaviors differ significantly from those of undergraduates.
- Students who are not directly responsible for managing their personal finances (e.g., fully sponsored dependents).

3.2.1. Sampling Design

The total undergraduate student population at Makerere University Business School (MUBS) is estimated at over 20,000 out of the total 30,000 students (MUBS official website, 2025). To determine a representative sample for this study, Krejcie and Morgan's (1970) sample size determination table was consulted. For a population of this size, the recommended minimum sample size is approximately 377 students.

Although a smaller, effective and manageable sample of 50 students will be selected during the initial pilot and system testing instead. The reason for this smaller sample, of course, is that the pilot has a focus on the usability, functionality and clarity of the prototype and survey instruments, and not so much generalizing the findings to the wider population. Pilot findings will guide more adjustments to the system before full-scale deployment. A Simple Random Sampling method will be used to choose participants. By using this approach, all students within the target population stand an equal chance of inclusion, minimizing bias and facilitating an unbiased depiction of undergraduate students in the population.

3.3. Sources of Project Data

The main data will come exclusively from primary research, directly collected from undergraduate students at MUBS, quantitatively so that we can determine how to be guided by this type of information in the personal finance management system. No secondary data will be utilized for the main findings, as the objective is to acquire fresh, firsthand insights into students' financial management behaviors.

Data will mainly be collected in structured questionnaires/surveys that will present the quantitative findings about:

- Budgeting and saving habits
- Sources and management of income
- Spending patterns and financial priorities
- Daily financial decision-making challenges

It is thus through this model that the research team gather number-driven data that enables statistical analysis, such that empirical analysis can be conducted to evaluate students' financial actions and impediments. The study uses primary quantitative only data so it is reliable, relevant, and directly applicable in the system development process.

3.3.1. Requirement Elicitation (Data Collection) Techniques

The function of requirement elicitation is the generation of data from what the target users want from the system design; This will help identify the perceived usability challenges and its realistic design. The quantitative methods will be used for the techniques of this study, in line with the choice of using primary data exclusively.

- Structured Questionnaires

System requirements could often be gathered using structured questionnaires delivered to undergraduate students. To obtain quantitative information related to the following, these surveys will be created:

- Functional needs (e.g., budgeting tools, income tracking, financial insights)
- User preference for system features and interface design
- Frequency and type of financial decision-making challenges

Structured questionnaires mean that their answers can be succinct and quantifiable, enabling the systematic analysis and ranking of the requirements using statistical trends and frequencies.

- Pilot Testing Feedback

By using a quantitative method the present study provides initial feedback to students on the system test prototype, though it will be piloted with a 50-student sample. Participants indicate numerically in a quantitative mode:

- The interface's ease of use
- Ease of navigation
- Usefulness of features

All this feedback is of a quantitative nature and must be analyzed so that design may be based on systematically analyzed.

- Data management & analysis

Data collected through questionnaires and prototype feedback will be coded and analyzed statistically. The analysis will focus on:

- Finding the most demanded features
- Finding where students struggle most
- Prioritizing system needs in a user-centered manner

This helps to organize quantitative information gathered as a list of user preferences/complaints from a set of information in the system to form a data set, from which a data driven design of the system based on the desired system-oriented approach from desired user needs and issues.

3.4. System Analysis and Design Approaches

For the technical development of the system, an Object-Oriented Design (OOD) approach will be utilized. OOD is preferred because it provides modularity, scalability, and ease of maintenance—critical features for an application which desires to change with time using constant feedback and iteration. This work will be developed in accordance with Agile development and will enable

small-scale frequent iterations at runtime. An agile approach guarantees user continuous involvement in incremental flow of feedback and system evolution based on user needs on the fly. It ensures that the final solution is responsive, consumer-centered, and adaptable for each stage of development.

3.4.1. Design Techniques

The personal finance management system will use the following design techniques and tools.

- **Use Case Diagrams:** To describe the major actions taken by undergraduate students to use the system. This helps to capture the primary purposes the system must provide.
- **Entity-Relationship Diagrams (ERDs):** Used to construct a stripped-down database design that showcases primary entities (students, transactions, budgets) that have the required relationships to function normally in the system.
- **Wireframes/Prototypes:** This is to create an intuitive interface and prototype to gain insight and learn from the test group, creating such designs with Figma or hand-drawn sketches. Those will focus on primary screens rather than the design.
- **System Block Diagrams:** Diagrams at a high level of the overall body for the system such as module of budgeting, storage and reporting module etc and interconnect on each other.

3.5. Anticipated Project Constraints

Several limitations will be expected by the project team to be constraints in the development and further implementation of the project. These issues are dealt with as such:

- There might be difficulty in obtaining up-to-date and reliable data relating to student financial behaviour. Because timely literature is not always readily available, the team will consult appropriate academic outlets and any available research databases to keep the study correct.
- The project may also meet with certain financial restrictions that might limit access to some premium product software or specialised development tools. To remedy this, the team will adopt powerful open-source alternatives in Android Studio, GitHub, and MySQL that offer the necessary functionality without any added cost.

- Team members sometimes lack skill set (technical) in other areas and their technical needs are less clear, particularly in areas needing more tech in terms of programming or developing systems which require a higher level of programming or system development competency. This can be overcome by the team completing structured online tutorials, short training courses, and reaching out to more experienced developers for guidance so that the system can remain working, polished, and easy to use.

Ethical Considerations

Informed consent: All participants involved in surveys, interviews or usability tests will be clearly briefed on the purpose of the research, the type of data being collected and how that data will be used. Participation will be entirely voluntary and respondents will provide explicit consent before contributing any information. They will also retain the right to withdraw from the study at any stage without any negative consequences.

Confidentiality: In order to secure the privacy of those participating, the personal information like student names, registration numbers and students numbers will be hidden during the processing of data. Survey responses and interview records will be anonymized to ensure that no data can be traced back to any specific individual. Only authorized members of the research team will have access to raw data.

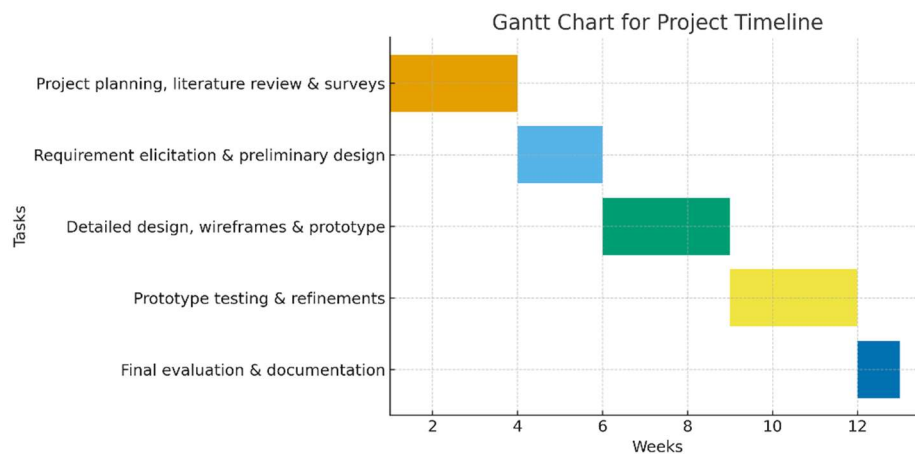
Data Security: Since the project deals with personal and financial information, strong data protection measures will be implemented. All collected data will be stored on secure, password-protected systems with restricted access. Backup copies will be encrypted and data will strictly be used for academic, analytical and system-development purposes only. No information will be disclosed to third parties without permission. The team will also comply with MUBS research ethics policies and general data protection best practices.

Ethical Use of AI: AI tools will be used responsibly during the course of the project. Their role will be to support academic tasks in terms of grammar checks, or code debugging without replacing our contributions. All AI-supported sections will be reviewed and validated by the project team to maintain academic integrity. The project will avoid generating misleading,

plagiarized or content that has been fully written by AI and therefore ensuring that the submitted work is in line with the rules and regulations of the university.

3.6. Timeline & Milestones

A detailed Gantt chart outlines the project timeline over 12 weeks with the following key milestones:



Weeks	Activities	Key Milestones
1–3	Project planning, literature review, and initial surveys	Completion of project planning and approval of study direction
4–5	Requirement gathering and preliminary system design	Requirements specification document approved
6–8	Detailed system design, wireframes, and initial prototype development	Prototype Version 1 completed
9–11	Prototype testing, user feedback sessions, and iterative refinements	Prototype Version 2 and refined system features completed

12	Final evaluation, documentation, and presentation preparation	Final system sign-off and presentation submitted
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3.7. Disclosure and Declaration Statement

AI tools will be utilised exclusively to support idea generation, code development, and formatting under supervisory guidance from the research team. The use of AI assistance will be transparent, ensuring that all work adheres to academic ethics and university rules and regulations. There are no conflicts of interest and all project work is wholly created by the research team.

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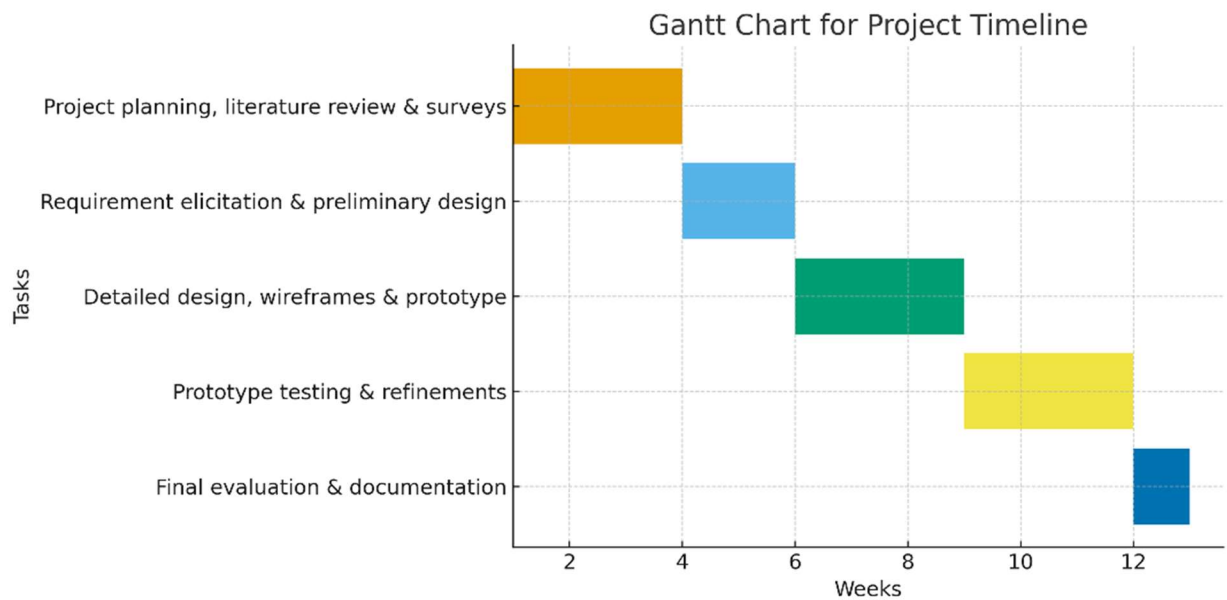
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APPENDICES

I. Proposed Budget

ITEM	UNIT	UNIT PRICE	TOTAL
COMPUTERS	5	UGX 1,000,000	UGX 5,000,000
INTERNET	60GB	UGX 300,000	UGX 300,000
RESEARCH		UGX 200,000	UGX 200,000
DEVELOPING		UGX 4,000,000	UGX 4,000,000
STATIONARY		UGX 100,000	UGX 100,000
TOTAL			UGX 9,600,000

II. Schedule of Activities/ Gantt chart



Weeks	Activities	Key Milestones
1–3	Project planning, literature review, and initial surveys	Completion of project planning and approval of study direction
4–5	Requirement gathering and preliminary system design	Requirements specification document approved
6–8	Detailed system design, wireframes, and initial prototype development	Prototype Version 1 completed
9–11	Prototype testing, user feedback sessions, and iterative refinements	Prototype Version 2 and refined system features completed
12	Final evaluation, documentation, and presentation preparation	Final system sign-off and presentation submitted