Kathmandu University

Department of Computer Science and Engineering

Dhulikhel, Kavre

A Project Proposal

On

"BudgetBuddy"

[Code No: ENGG 102]

(For partial fulfillment of ENGG 10 I/II in Computer Science)

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Abstract

This proposal has been drafted to build a real-world project as our semester project for subject ENGG102 as provided by the Department of Computer Science and Engineering. Through this project, we hope to achieve some experience in developing, programming, designing, presenting and maintaining an application.

We have come to a conclusion to develop an application for a personal finance tracker. BudgetBuddy is a personal finance tracker that aims to address the limitations of many existing budgeting tools that rely on internet, subscription models and complex features. The app creates an accessible, user-friendly environment for managing income and expenses while the main feature of the app i.e. Secure local data storage and real-time budget monitoring is still available to the users. Through this project we would like to develop an app which is easily accessible to users and help develop strong finance management skills.

We see this as a perfect platform to improve our programming skills as well as adopting new skills. We hope to make this project a success and achieve our objective.

Keywords: BudgetBuddy, finance tracker

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Acronyms/Abbreviations:

GUI:	Graphical user interface
YNAB:	You Need a Budget

Chapter 1 Introduction

In today's fast-paced digital economy, effective personal financial management has become increasingly essential. However, many individuals struggle to maintain control over their income and expenses due to a lack of accessible, user-friendly tools. Traditional methods such as spreadsheets or manual tracking are often time-consuming and prone to error, making them impractical for consistent use.

1.1 Background

The rise of subscription services, online shopping, and cashless transactions has complicated the way people manage their finances. Without proper tracking, it becomes easy to overspend or lose sight of financial goals. This is especially true for students like us and working professionals who may have limited financial literacy or time to manage budgets effectively.

To address this issue, a finance tracking application can serve as a practical and empowering tool. By providing real-time expense monitoring, budget planning, and financial insights all in one place, such an app can help users make informed decisions, avoid unnecessary debt, and build stronger financial habits.

This proposal advocates for the development of such an app—a tool that combines technology, usability, and education to address a real-world need for better personal finance management. By making budgeting accessible and engaging, the app can contribute meaningfully to improving financial wellness across diverse user groups.

1.2 Objectives

1. To provide users with a secure and easy platform to track their daily expenses and income.

2. To allow users to set monthly budget goals.

3. To help users gain insight into their financial habits by categorizing transactions.

4. To provide a simple, intuitive interface that makes financial tracking accessible to all users.

1.3 Motivation and Significance

The motivation behind developing BudgetBuddy is to address the issues with personal finance management tools. Current budgeting applications require internet connectivity, impose subscription fees, or confuse users with complex features, making them inaccessible and impractical for everyday use. Unlike cloud-based solutions, this offline system prioritizes privacy, simplicity, and customization, allowing users to track expenses without compromising data security. By incorporating real-time budget alerts, transaction categorization and financial summaries, this project provides a smooth alternative to unmanageable financial software. Its console-based design ensures quick data entry while features like local storage and monthly goal tracking helps users to manage their finances effectively. This tool stands out by combining essential budgeting functionalities with a cost-free approach, making financial management more accessible to individuals who need a reliable solution.

1.4 Expected Outcomes

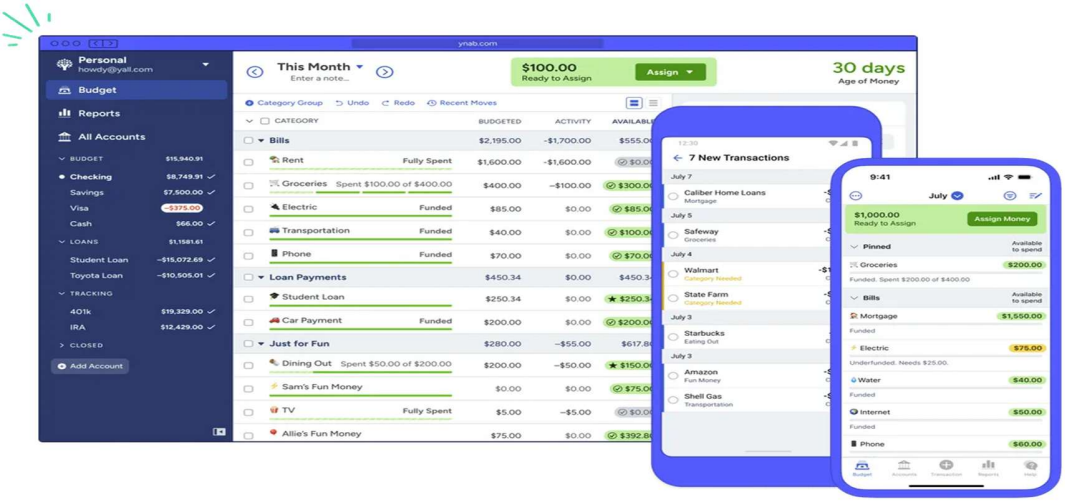
Our project BudgetBuddy aims to deliver a streamlined, offline solution for personal finance management. By implementing secure transaction logging, real-time budget alerts, and expense categorization, it will help users track spending efficiently while maintaining data privacy. The console-based design ensures simplicity and accessibility, offering a practical alternative to complex commercial apps. Ultimately, the tool aims to improve financial awareness and reduce overspending through organized tracking and actionable insights.

Chapter 2: Related Works

For our project, we have taken inspiration from mainly the following two existing applications.

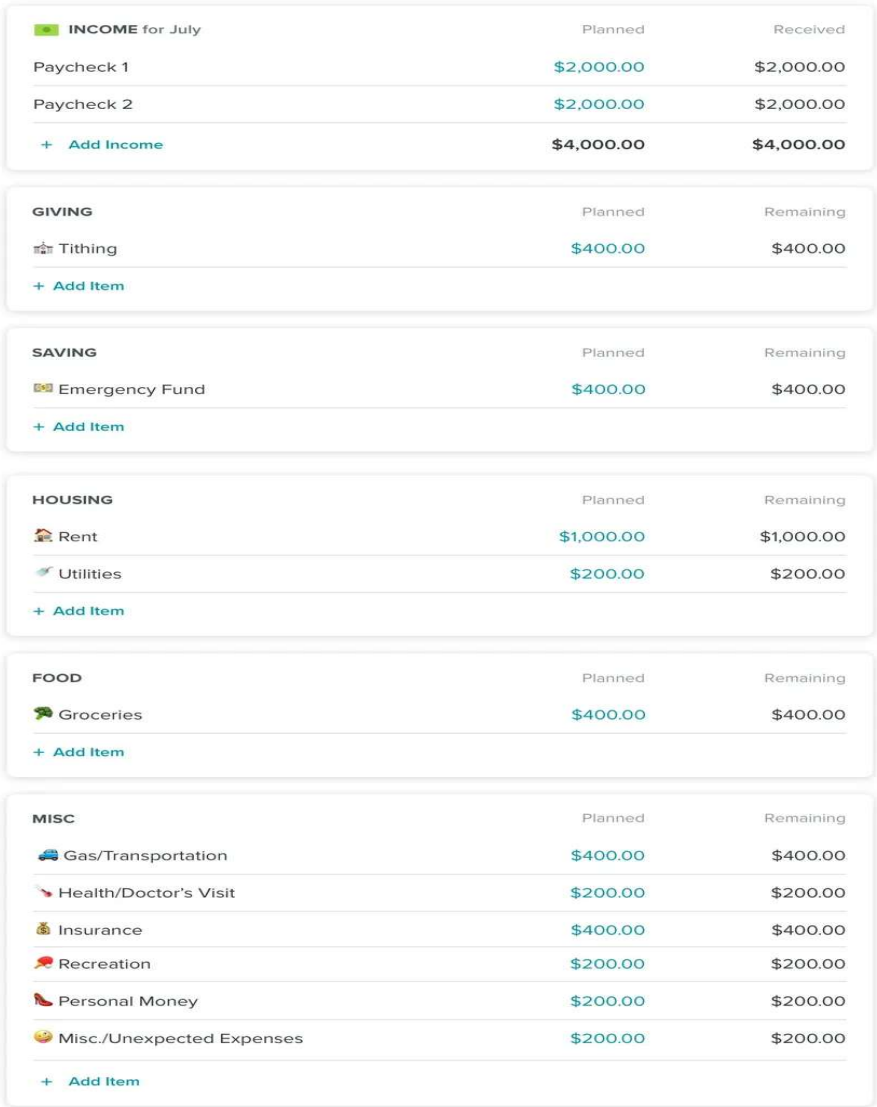
2.1 YNAB (You Need a Budget)

YNAB is a budgeting app that uses a zero-based budgeting method, meaning every dollar is assigned a specific purpose. It offers real-time sync, goal tracking, detailed reports, and educational resources. Though it has a subscription fee, it is highly regarded for transforming user habits and long-term money management.



2.2 EveryDollar

The app allows users to plan monthly expenses and allocate every dollar of income toward a purpose, such as spending, saving, or debt repayment. It features a simple and intuitive interface and offers premium features like bank syncing and real-time transaction tracking through a subscription plan.



Chapter 3: Procedure and Methods

A list of works to be done to ensure the successful completion of project is given below:

3.1 Idea pitching

For the completion of the project, we will choose a topic that ensures every team member's approval and field of interest.

3.2 Proposal Writing

After deciding upon a topic, we will move on to preparing a well-structured proposal that outlines the ideas of the project.

3.3 Research and Learning

We will then conduct research about how the project development is to be done after the project proposal to clearly outline the ideas and implement them. We will also learn about the software required to make the best out of our project.

3.4 Planning and Work Division

After learning the required software and the completion of research, we divide the work to every individual in the group such that the workload is balanced, and we will have adequate time for the code and idea implementation.

3.5 Development

Based on the project proposal and research, do the actual coding and prepare the software and functionalities mentioned.

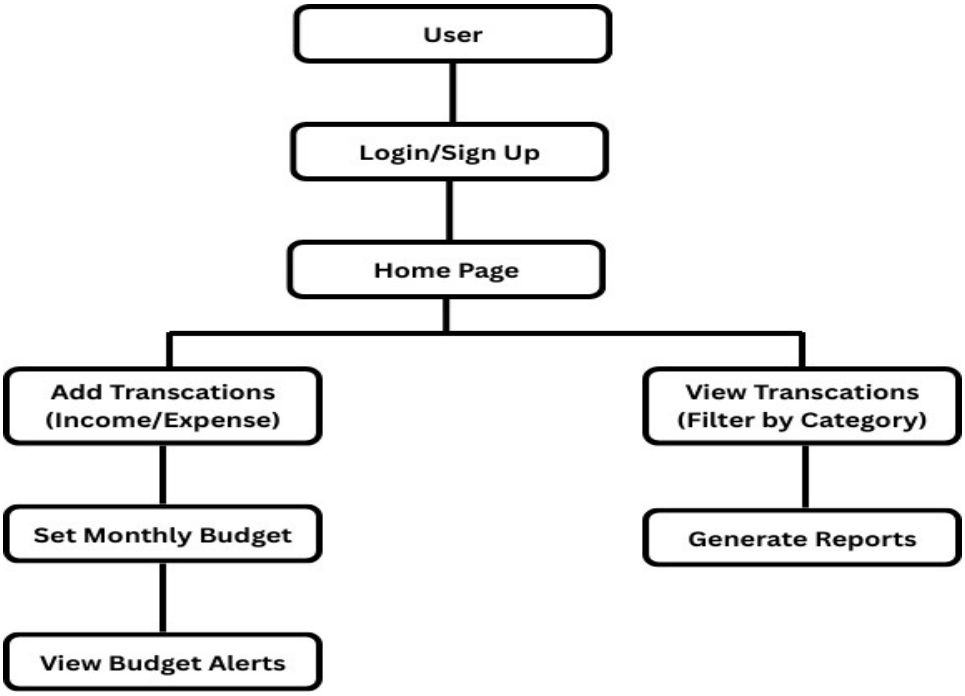
3.6 Debugging and Testing

We will test the code daily and fix the errors or bugs generated during the code compiling.

3.7 Documentation

Ensure that your work is supervised timely and make sure to maintain the logbook.

3.8 Use-Case Diagram



Chapter 4: System Requirement Specification

4.1 Hardware Requirement

Since our project is simple, any sophisticated hardware is not necessary.

4.2 Software Specification

4.2.1 Front-end Specification

The front end of LMS is created using Qt

4.2.2 Qt creator (Open source)

Qt is a C++ framework mainly used to develop applications and GUI frameworks. It supports WOCA principle which means it is a cross-platform framework. Qt components simplify the creation of applications and provide functionality for documentation, UI controls, network access, web content management, etc.

4.2.2 Back-end Specification

The back end of LMS is created using C++ and SQLite.

4.2.2.1 C++ Programming Language

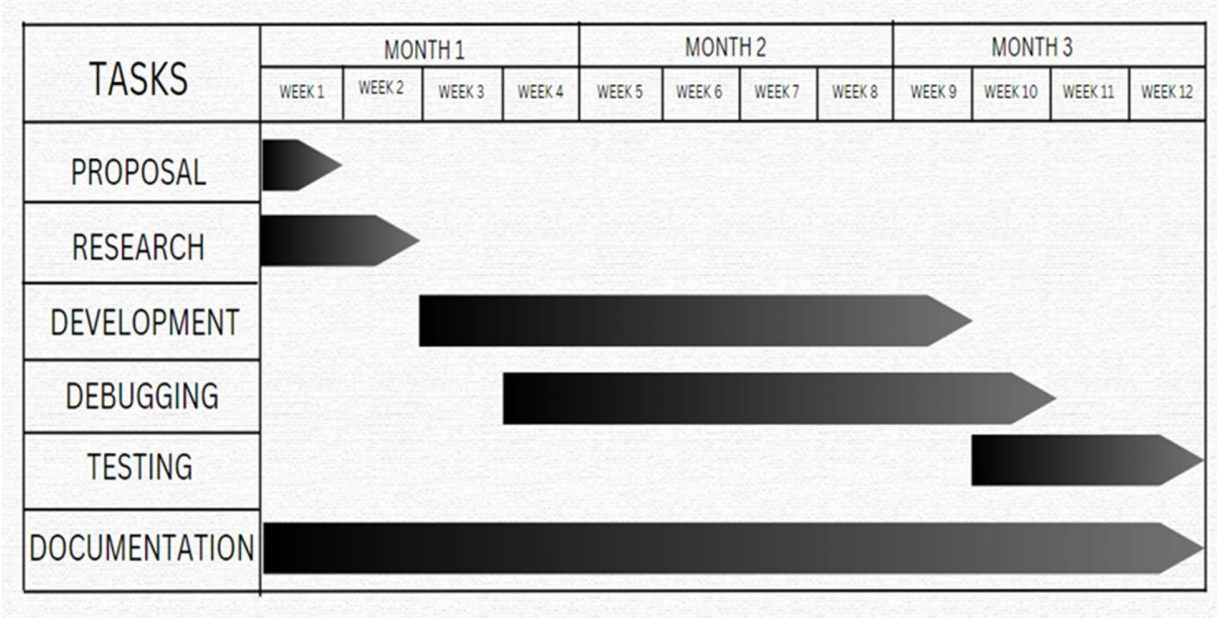
C++ is an object-oriented programming language created by Bjarne Stroustrup as an extension to C++ to create high performance applications. C++ is a general purpose, case-sensitive, free-form programming language that supports object-oriented, procedural and generic programming.

4.2.2.2 SQLite

SQLite is a popular open-source RDBMS that is easy to handle small to medium sized data. SQLite is a database engine created by using C++ programming language. SQLite can directly connect the required DBMS to C++

Chapter 5: Project Planning and Scheduling

Since we are new to the concept of object-oriented programming and the use of GUI, this project moves forward simultaneously with our gain in knowledge. Thus, the following Gantt chart shows a rough estimation of the time calculation for a list of different works such that the time is adequate for the successful completion of the project.



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