

# DUGBET VISION DOCUMENT

## Group 03

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## Revision History

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# Vision (Small Project)



## 1. INTRODUCTION

This document serves to collect, analyze, and define high-level requirements for the **Dugbet - Budget Management** system in terms of the needs of end users. It concentrates on the capabilities needed by the stakeholders and the target users, and why these requirements exist. A comprehensive breakdown of how Dugbet fulfills these needs is detailed in the use case and supplementary specifications.





The **Vision Document** applies to the **Dugbet - Budget Management** system, which will be developed by the **Dugbet** team. The **Dugbet** team will develop this mobile application for end users to track their own and/or their fund's financial status.

The **Dugbet - Budget Management** system will enable end users to simply input their daily transactional information into the database and view summary diagrams/figures of their incomes and expenses. The system also supports fund managers to govern their money.

### 1.1 REFERENCES

## 2. POSITIONING

### 2.1 PROBLEM STATEMENT

	THE PROBLEM OF	the increase of personal financial crises
	AFFECTS	young individuals
	THE IMPACT OF WHICH IS	struggling to manage personal budgets effectively, inability to plan for future financial goals and emergencies, leading to a lack of financial security
	A SUCCESSFUL SOLUTION WOULD BE	a user-friendly system that supports multiple input methods for managing budget with a feature for frequent notifications to help users fully track and control over their finances effectively

### 2.2 PRODUCT POSITION STATEMENT

	FOR	young individuals and groups, especially Vietnamese students and clubs
	WHO	seeking better control over their finances and event fund tracking for collaborative financial management
	THE DUGBET - BUDGET MANAGEMENT SYSTEM	is a budget management software
	THAT	simplifies financial tracking, allowing convenient data input and unique evmoney resources management
	UNLIKE	current finance management applications that are relatively less user-friendly to youngsters, inconvenient in inputting data, and lack features in storing temporary event fund for later splitting
	OUR PRODUCT	prioritizes user-friendliness, ensures convenient data input in applying Artificial Intelligence in recording bills and transactions. The system supports group moneykeeper by tracking balance, giving notifications and reminds

### 3. STAKEHOLDER AND USER DESCRIPTIONS

#### 3.1 STAKEHOLDER SUMMARY

Name	Description	Responsibilities
Development team	Students in group 03	Build, maintain and develop the Dugbet application. Ensure that the system is always stable, secure, and able to meet customer requirements.
Project manager	A key stakeholder that primarily ensures the development of the systems.	Organize, plan, and execute projects according to schedules and budgets. Monitor the progress, identify and resolve risks. Ensure that the software project is completed successfully
Business analyst	A key stakeholder that understands the business needs and translates them into technical requirements.	Gather requirements, prioritize them, and ensure that they are complete and accurate. The BA also works with the development team to implement the requirements and ensure that the software meets the business needs.
System architect	A key stakeholder that designs and implements the	Selects the appropriate technologies and tools to be used in the project. Works with the development team to implement the system architecture

	overall structure of the project.	
Test manager	A key stakeholder that plans, executes, and manages the software testing process.	Ensure the software is thoroughly tested and meets all of its requirements before it is released to users.
Security managers	A stakeholder that plans, executes, and manages the software testing process.	Ensure the privacy and security of user-sensitive data.
Mentor	A stakeholder that has experience in the software development process.	Give advice and help the developer team improve job skills and overcome obstacles in different tasks.
Financial institutions	Financial institution that holds the user's account. This could be a bank, credit union, or other financial institution.	Provide the app with access to user account data through a secure connection. This data allows the app to provide users with accurate and up-to-date information about their spending and financial status.
End user	Principal users of the application (young people, students, etc.)	Using the application, giving feedback to enhance the experiences

Payment service	Payment service	Provide customers a range of payment methods and manage the processing of these payments.
External service or integrated component	A Optical character recognition(OCR) engine	Extracts text from images, bills used for bill scanner feature

## 3.2 USER SUMMARY

Name	Description	Responsibilities	Stakeholder
Administrators	End-user of the application	Manage user accounts, modify data if necessary. Monitors the app's usage and performance	Self-representative
Normal user	Primary end-user of the application	Use Dugbet application to manage their financial status. Report any bugs to the developers.	Self-representative
Premium user	Primary end-user of the application	Use Dugbet application to manage their financial status. Report any bugs to the developers.	Self-representative



### 3.3 USER ENVIRONMENT

The budget management application is designed for individuals from low to medium income levels, with a focus on young individuals (e.g. students). The users must have their personal devices such as smartphones and tablets.

These users are looking for a method to set budget goals and track their progress. They also need a budget management application that is convenient, responsive, and trendy, and that allows them to quickly and easily track their expenses and income by time and category on their personal devices.

The operating systems (listed following) that are compatible with the application: Smartphones (Android and iOS), Tablet (Android and iOS).

The budget management application is accessible to users from any location with an internet connection. Users can access the application from their preferred device, the data is consistent and secure within an account.

To enhance the smoothness and quickness of the tracking feature, the utility has several functions such as: allowing access to read payment results in SMS from banks, which can be established in the user's devices.

### 3.4 SUMMARY OF KEY STAKEHOLDER OR USER NEEDS

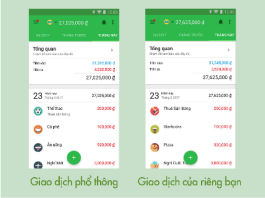
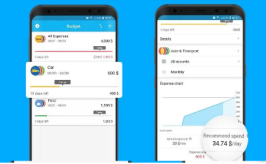
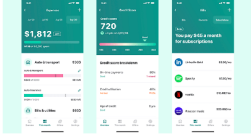
Need	Priority	Concerns	Current Solution	Proposed Solutions
Keeping track of transactions	High	The user forgot to add transactions in the application	None	Create push notification at the end of the day to remind users to update their transactions. Connect with e-wallets, and banks to monitor transactions in user's account

Safe and secured data	High	Personal data is exposed.	None	Users must sign in to obtain information. The personal data of users should be secured and no one can access user personal data.
Tracking financial status quickly	High	Updating financial status change by transactions for a group of people is tedious	None	Provide event tracking feature, that allows counting the transaction for a group of user, automatically calculate the amount of money split up and update to personal status
Easy to add transaction	Medium	The process of adding transaction is tedious	None	Provide a friendly user interface and are easy to navigate.

User feedback	Medium	User feedback and complaints are not properly considered. And it's not easy to identify what kind of services they want and what services they want to improve.	Feedback is conducted through survey forms. This process is time-consuming. And customers are not willing to give feedback.	Users can provide feedback through online survey forms.
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### 3.5 ALTERNATIVES AND COMPETITION

Regarding personal finance management applications, there are many large competitors on the market who have effectively taken advantage of this idea: Money Lover, MISA, and Mint. All of them provide basic features for managing budgets and spending, as well as utility tools for managing assets. In addition, those applications also link to banking applications to control the transactions of users.

	Money Lover	MISA	MINT
Screenshots			
KEY FEATURES			
Web-version	✓	✗	✓
Reminders and Alerts	✓	✓	✓

## STRENGTHS AND WEAKNESSES

<b>Strength</b>	<ol style="list-style-type: none"> <li>1. Beautiful and user-friendly interface.</li> <li>2. Diverse and eye-catching icon sets.</li> <li>3. Offers features like budget tracking, scheduled transactions, and the ability to manage savings and debts.</li> <li>4. Travel Mode for handling expenses while traveling.</li> <li>5. The ability to share wallets with others.</li> <li>6. Automatic backup and data synchronization across multiple devices.</li> <li>7. Web version for accessing the app from a web browser.</li> </ol>	<ol style="list-style-type: none"> <li>1. Allows categories to be used across different wallets, addressing a limitation of Money Lover.</li> <li>2. Offers features like budget tracking, scheduled transactions, and managing savings and debts.</li> <li>3. Ability to export data to Excel and PDF.</li> <li>4. Travel Mode for handling expenses while traveling.</li> <li>5. No device limit for automatic backup and data synchronization.</li> <li>6. Have initialize template</li> </ol>	<ol style="list-style-type: none"> <li>1. Allows users to link and closely control all types of accounts and e-wallets.</li> <li>2. Offers effective solutions to improve your spending habits.</li> <li>3. Payment due date reminders for bills, credit cards, and loans.</li> <li>4. End-of-month reports summarizing expenditure in the form of charts for each category.</li> </ol>
<b>Weaknesses</b>	<ol style="list-style-type: none"> <li>1. Free version limitations on important features.</li> <li>2. Inability to use categories across multiple accounts, which can be restrictive when creating budgets.</li> <li>3. Additional costs for features like bank linking and certain icon packs.</li> <li>4. Limitation of syncing on up to 3 devices.</li> <li>5. Limited to 1 wallet and 1 budget for free users.</li> <li>6. The need for a subscription to access certain features like bank linking.</li> </ol>	<ol style="list-style-type: none"> <li>1. Free version limitations on the number of wallets and budget.</li> <li>2. Limited icon options for user customization.</li> <li>3. Interface may be considered too colorful by some users.</li> <li>4. No lifetime Premium package, requiring a subscription for access.</li> </ol>	<ol style="list-style-type: none"> <li>1. It takes time to set up</li> <li>2. Automatic category assignments wrong or miscategorized</li> <li>3. Account connection issues</li> <li>4. Recommended financial products may feel intrusive</li> </ol>

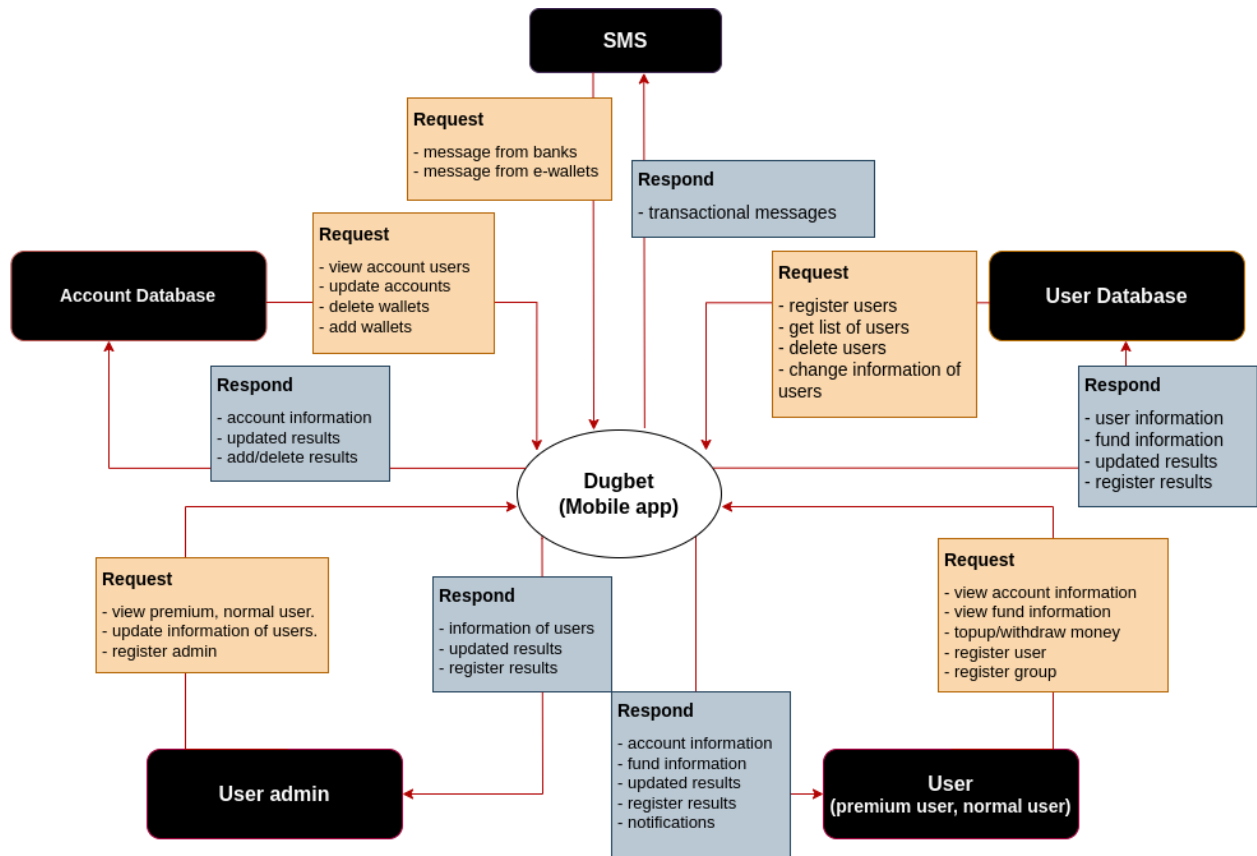
Ultimately, the best app for you depends on your specific financial needs and preferences. Money Lover is well-suited for personal budgeting, while MISA is more business-focused. Mint offers comprehensive personal finance

management, including investment and credit score tracking, but you should consider its security and advertising aspects.

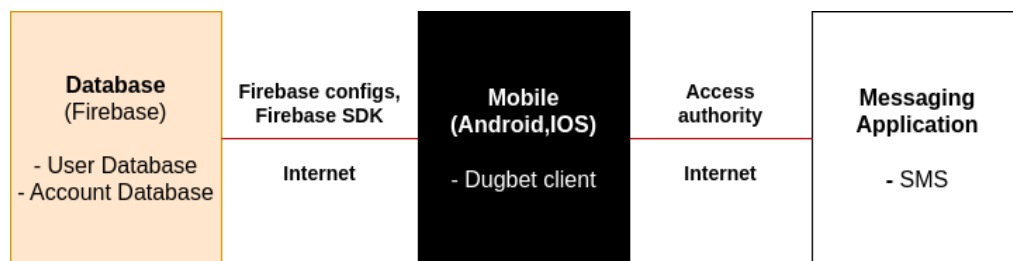
## 4. PRODUCT OVERVIEW

### 4.1 PRODUCT PERSPECTIVE

- The Dugbet application is installed on the phone. It has the ability to connect directly to the Firebase database. In addition, the application also communicates with messaging applications such as SMS to be able to extract payment messages from users via a bot to update accounts. **(Figure 4)**
- Dugbet is an application designed based on the MVC model. In this, the controllers of Dugbet will communicate with external systems or databases. Users install Dugbet on their phones. During the use of Dugbet, Dugbet will communicate with Firebase and automatically connect to Firebase through Firebase configs when there is internet. In addition, Dugbet requests access authority to be able to connect to external systems (Messaging Applications) when there is internet to perform requests from users. When the systems respond, Dugbet processes and updates the contents to the user. **(Figure 5)**



**Figure 4:**  
Dugbet Context Diagram



**Figure 5:** Dugbet System Overview

## 4.2 ASSUMPTIONS AND DEPENDENCIES

- The minimum requirement for Android is API level 19 (Android 4.4 KitKat). It is assumed that devices have cameras.
- Assume the application is responsive on both iOS and Android

environments and can adapt to various phone sizes.

- The cost of expanding the Firebase database when the number of users is large. Assume the number of users supported for free by Firebase and Firebase's usage policy does not change.
- The cost of paying for the API Key for connecting messaging applications. Assume the use of the API Key is provided for free.
- Assume that the extraction of information from the application is allowed and valid by the user.

## 5. PRODUCT FEATURES

No.	Feature	Description	Priority
1	<b>Sign up, sign in, and forget password</b>	<p>New users shall <b>sign up</b> for a new account on the system that contains basic information.</p> <p>Users who have signed up before shall use their registered username or email and password to <b>sign in</b> to the system.</p> <p>In case they <b>forget the password</b>, the system shall provide a procedure for regaining their account by email confirmation and password recreation.</p>	High
2	<b>Public account profile</b>	<p>Once the account is created successfully, the system shall allow the user to <b>modify</b> their <b>public profile</b>: Full name, avatar, date of birth, and location. A user can see others' public profiles.</p>	High
3	<b>Private access</b>	<p>The system shall provide features for managing internal/private account information as follows:</p>	High



3.1	Wallets	<p>Initially, the system shall initialize a default wallet for new users with a balance of 0.</p> <p>Users should be able to declare/ <b>add wallets</b> to the system that reflect their existing budget. Despite the optional property of this feature, wallets' information is critical for the system to notify them about their financial status.</p>	High
3.2	Categories	<p>The system shall provide a section for users to <b>modify their categories</b> of income, expense, and transfer.</p> <p>Essential categories, such as "Food &amp; Beverages" for the expense category or "Salary/ financial support" for the income category, should be available initially.</p> <p>Users should be able to tailor the categories to their contexts.</p>	Medium
3.3	Export tools	<p>Users should be allowed to <b>export their wallets' information</b>, categories, and/ or transactional information to common file formats such as CSV or XLS.</p>	Low

3.4	Account settings	<p>The system shall provide users with means of personalizing their experience</p> <p><b>Appearance:</b> App theme; Displayed language; Date format; Currency for Wallet; Money label's style: Show/not show currency symbol, number of digits after the decimal point, decimal separator (comma or dot), color of income/expense, etc.;</p> <p><b>Notifications:</b> Notifications tone, daily remind of adding transaction, etc.;</p> <p><b>About:</b> App information, app walkthrough (user manual guide).</p> <p><b>Login and Password:</b> The system shall allow users to update their login information, including email and password.</p>	High
4	<b>Add a New Transaction</b>	<p>The system shall allow users to effortlessly record their financial activities by <b>adding a new transaction</b>. This feature prompts users to input the following details in either one of the two supported methods: <b>manual input</b> or through</p>	High

		<b>scanning.</b>	
4.1	Amount of Money	Specify the monetary value associated with the transaction.	High
4.2	Category	Choose from personalized categories set up in the account profile, such as "Food & Beverages," "Entertainment," or user-defined ones.	High
4.3	Note for the Transaction	Add any additional notes or details relevant to the transaction	Medium
4.4	Date of Transaction	Select the date when the transaction occurred.	Medium
4.5	Wallet	Choose the wallet from the account profile that was used for this transaction.	High
4.6	Scan Bill	Users should be able to expedite the transaction entry process by utilizing the device's camera to scan bills. The system will extract relevant information from the bill and auto-fill transaction details where possible.	Low
5	<b>View Transaction</b>	This feature shall empower users to review their financial transactions conveniently:	High
5.1	Timeframe	Users can filter transactions based on	Medium

	Selection	specific timeframes such as last month, last week, yesterday, today, or a custom date range.	
5.2	Categorization	Transactions can be viewed categorically, allowing users to assess their spending or income in specific areas.	Medium
5.3	Wallet Filter	Users can also filter transactions by individual wallets, providing a detailed breakdown of financial activities associated with each wallet.	Medium
6	<b>Generate Financial Reports</b>	Users can gain insights into their financial patterns and trends through comprehensive reports:	High
6.1	Chart Views	Display the chart(s) according to a specific time period, such as this month, last month, etc.	Medium
6.2	Chart Options	Choose from various chart formats, including bar charts, pie charts, and line charts, to visualize spending and income.	Low
6.3	Basic Statistics	Receive summarized statistics on overall income and expenses.	Medium
6.4	Top Spending by	Identify and understand top	Low

	Category	spending categories, presented as a percentage of total spending or actual figures.	
7	<b>Event Finance Tracking</b>	The Event Finance Tracking feature streamlines the management of shared expenses within a group during an event. When a user initiates an event, participants can collectively contribute to expenses incurred during the event. The application ensures accurate tracking, equitable distribution, and transparent settlement of financial obligations among participants. Key functionalities are as follows:	High
7.1	Initiating an Event	<p>Users can create an event within the application, specifying details such as event name, duration, and participating members.</p> <p>The member creating the event is the facilitator, and any participating member can contribute to expenses.</p>	High
7.2	Adding Event Members	The event creator can add to the event other users who also use the app and participate in the event in	High

		the real-world.	
7.3	Expense Recording	<p>Participants can record expenses incurred on behalf of the group during the event.</p> <p>When a user inputs transaction details (including, but not limited to, amount spent, description, and category), they can select specific members from the event to share the expense.</p>	High
7.4	Real-time Calculation	<p>The application dynamically calculates the total expenditure during the event, considering only the expenses involving the selected participants.</p> <p>At the end of the event, the total expense is divided equally among the selected participating members.</p>	Medium
7.5	Adjustment for Previous Transactions	<p>The calculated amount is subtracted from the total transactions made by each selected participant during the event.</p> <p>This ensures that the true amount</p>	Medium

		owed by each participating member is accurately determined.	
7.6	Financial Settlement Suggestions	<p>The application suggests financial transactions to settle outstanding balances among the participants in an event.</p> <p>Suggestions include transactions to reimburse participants who have overpaid or prompt users to settle their remaining balances.</p>	High
7.7	Transaction History	<p>A comprehensive transaction history for the event is maintained, detailing each expense and the corresponding settlement transactions.</p> <p>Users can review this history to track the flow of funds within the group during the event.</p>	Medium
7.8	Terminating an Event	The event creator can end the event once it is deemed finished in the real world. Full transactional history is still retained, but other event activities can not be updated.	Low
8	<b>Premium feature</b>	Users pay a one-time fee to become Premium users and gain access to	High

		<p>premium features permanently.</p> <p>Premium users have more power to access advanced features of the application (.e.g. export financial files, unlimited wallets, and budget target setting), which helps them reach their financial goals.</p>	
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## 6. Non-Functional Requirements

### 6.1 Applicable Standards

The mobile user interface shall be Android 4.4+ (API level 19+) compliant.

### 6.2 System Requirements

The system shall connect directly to the Firebase database.

The system shall communicate with messaging applications, such as Messenger and SMS, to be able to extract payment messages from users via bot to update accounts.

### 6.3 Performance Requirements

The system shall support up to 100 simultaneous users against the central database at any given time.

The system shall have a high run time speed and respond quickly to users' interaction within 2 seconds.

### 6.4 Environmental Requirements

None.



## 6.5 Documentation Requirements

This section describes the documentation requirements of the Dugbet Budget Management system.

### 6.5.1 User Manual

The User Manual shall describe use of the Dugbet system for end users. The User Manual shall include:

- Minimum System Requirements
- Installation of the software
- Logging in/out
- All system features
- Customer support information

### 6.5.2 On-line Help

Online Help shall be available to the user for each system function. Each topic covered in the User Manual shall also be available through the online help.