# Group Project

Application Development

# OUR TEAM

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# Content

1. Problem Statement
2. Stakeholders
3. Project Challenges
4. Business Application Solutions
5. Risk Management and Mitigation
6. Functional and Non-functional Requirements
7. Conclusion

# 1. Problem Statement

"Current Problem: BudgetWise Solutions lacks a modern mobile application that can help users manage their finances effectively. Customers struggle with budgeting, tracking expenses, and setting financial goals through existing tools, which are either outdated or not user-friendly."

# User Requiments

Ease of Use: Users need an intuitive and simple interface to manage their finances without complexity.

Expense Tracking: Users want to track daily, weekly, and monthly expenses efficiently.

Financial Goals: Users need tools to set and monitor savings or financial goals, with visual feedback on their progress.

Accessibility: The app should be available on both iOS and Android, with offline functionality to ensure access even without internet connectivity

# System Requirements

Cross-platform Compatibility: The app must work seamlessly on both iOS and Android devices.

Security: Strong data encryption and secure authentication are essential to protect sensitive financial information.

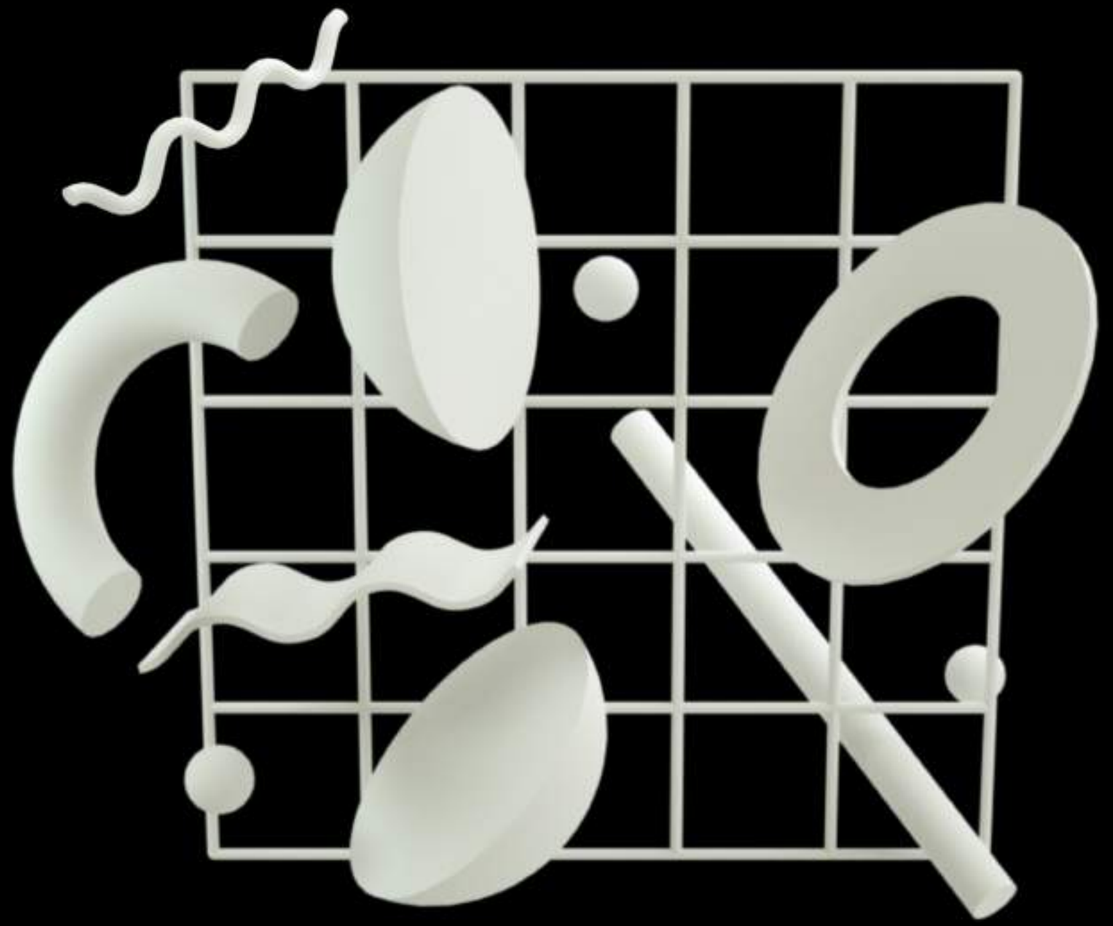
API Integration: The system must integrate with third-party financial APIs (such as banking services) to fetch real-time transaction data and enable automatic expense categorization.

Scalability: The system should be able to handle a growing number of users and data without performance issues.

# 2. Stakeholders

In this project, several key parties (stakeholders) are involved, each with distinct expectations and desires. Understanding these stakeholders is essential for delivering a product that meets their needs and ensures the project's success.

- Customers
- Development Team
- Management/Business Owners
- Investors (if applicable)



# Customer

Target Audience:

- University students (undergraduates & postgraduates)
- Need a mobile-based personal finance management app

Key Expectations:

- Ease of use: Simple, intuitive interface with minimal learning curve
- Real-time updates: Instant spending tracking and financial insights
- Security: Strong protection of financial data
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# Development Team

Who they are: Software developers, UX/UI designers, QA testers, and project managers responsible for building and maintaining the mobile app.

The team is responsible for designing, developing, and maintaining the app. They focus on:
Building a stable, functional app that meets all user and system requirements.
Ensuring cross-platform compatibility to provide a seamless experience on both Android and iOS.

# Management / Business Owners

Responsibilities:

- Project Oversight: Ensure timeline, budget, and scope are maintained
- Business Alignment: Make sure the app supports BudgetWise's financial management goals for students
- Resource Allocation: Provide support and coordinate with stakeholders

Business Owners' Role (if partnerships exist):

- Partnership Benefits: Offer student deals or discounts
- Marketing Channel: Use the app to engage students and drive sales
- Return on Investment: Expect financial gains from collaborations

# 3. Project Challenges

- Budget Constraints
- Short Deadlines
- User Adoption
- Data Security

# Budget Constraints

Impact on Development:

- Limited funds → Fewer features, delayed phases
- Affects tech stack and hiring → Longer cycles, design/functionality compromises

Managing Expectations:

- Balance budget with stakeholder needs
- Prioritize essential features for initial release
- Plan future updates when more funding is available

# Short Deadlines

Impact on Development Team:

- Rushed development → More errors, technical debt, lower product quality
- High stress and workload → Risk of burnout, missed deadlines

Quality Assurance Impact:

- Less time for testing → Bugs, security issues, usability problems
- Limited user feedback and iteration time → Less refined product

Mitigation Strategy:

- Break project into smaller milestones
- Use agile development practices
- Focus on core MVP (Minimum Viable Product)

# User Adoption

Challenges:

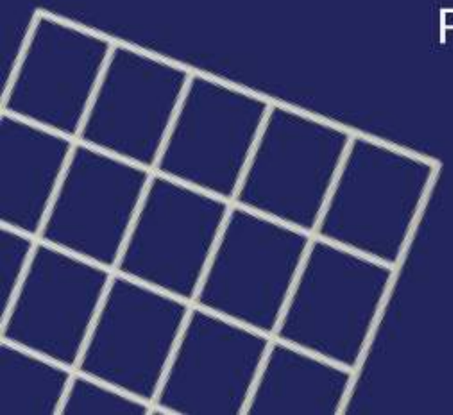
- Students may hesitate to adopt a new financial app.
- App must stand out with:
  - Ease of use
  - Mobile accessibility
  - Incentives or rewards

Encouraging Adoption:

- Effective marketing:
  - Student discounts
  - Rewards for expense tracking
  - Collaborations with student organizations
- Seamless onboarding with tutorials

Feedback & Improvement:

- Regularly gather user feedback
- Continuously improve based on user needs
- Boost engagement for long-term use



# Data Security

Importance of Protecting Student Data:

- Students enter sensitive financial data into the app.
- Data breaches or mishandling can damage the app’s reputation.
- Securing user data is both a legal requirement and essential for building user trust.

Security Measures:

- Implement strong encryption protocols for data storage and transmission.
- Conduct regular security audits.
- Ensure compliance with data protection laws like GDPR or local regulations.
- Use multi-factor authentication (MFA) and secure APIs to protect against cyber threats.

User Awareness:

- Educate users on protecting their data.
- Promote strong password usage and enable two-factor authentication.
- Minimize security risks through user awareness and good practices.

# Proposed Solution: Develop a Mobile App with Future Desktop Integration Options

Overview:

- The primary focus will be on developing a mobile application that addresses the immediate needs of users for ease of access and engagement while ensuring robust functionality.

Key Features of the Mobile App:

- Real-time Expense Tracking: Users can log expenses and track budgets on-the-go.
- Goal Setting: The app will allow users to set and monitor financial goals easily.
- Notifications: Users will receive reminders and alerts to stay engaged with their budgeting.

Future Desktop Integration:

- Seamless Syncing: Once the mobile app is established and user feedback is incorporated, a desktop version can be developed that syncs data with the mobile app, providing users with a comprehensive view of their finances.
- Expanded Features: The desktop version can offer more advanced features for detailed financial analysis and reporting, taking advantage of larger screens and processing power.

# 4. Business  Application Solutinons

Comparison of Mobile App vs. Desktop Solution

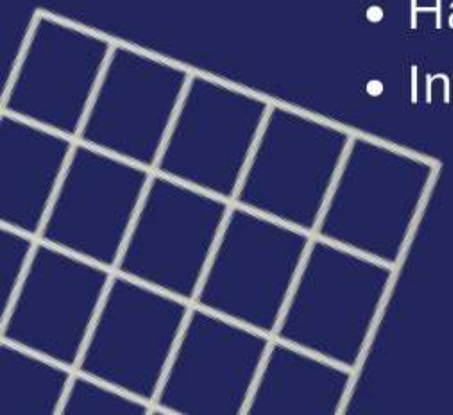
Mobile App

Advantages:

- Accessibility: Available anytime, anywhere for real-time expense tracking.
- User Engagement: Higher engagement through push notifications for reminders.
- Camera Integration: Easy receipt capture for quick expense input.
- Touchscreen Interface: Intuitive and user-friendly interaction.

Disadvantages:

- Limited Screen Space: Smaller screens can hinder complex data display.
- Hardware Limitations: Performance may be affected by device capabilities.
- Internet Dependency: Often requires a stable internet connection.



# Comparison of Mobile App vs. Desktop Solution

## Desktop Solution

Advantages:

- Larger Screen: Better for displaying detailed reports and data analysis.
- Performance: More powerful processing and storage for resource-intensive tasks.
- Robust Functionality: Supports complex features like multi-window operations.

Disadvantages:

- Accessibility: Limited to desktop use, restricting on-the-go management.
- User Engagement: Lower engagement due to lack of notifications.
- Setup and Maintenance: Installation and updates can be cumbersome.

# Proposed Solution: Develop a Mobile App with Future Desktop Integration Options

Overview:

- The primary focus will be on developing a mobile application that addresses the immediate needs of users for ease of access and engagement while ensuring robust functionality.

Mobile App Features:

- Real-time expense tracking
- Goal setting and monitoring
- Notifications and reminders

Future Desktop Integration:

- Seamless data syncing with the mobile app
- Advanced financial analysis and reporting

# 5. Risk Management and Mitigation

- In the BudgetWise Solutions project, managing risks is crucial to ensure its success.
- For instance, scope creep is a common challenge, where uncontrolled changes can expand our project beyond its initial goals. Technical failures are also a concern; issues like software bugs or system crashes can disrupt our timelines and affect user experience.
- By identifying these risks early, we can implement strategies to mitigate them and keep our project on track.

# Potential Risks

Scope Creep

- Uncontrolled changes beyond the original plan.
- Impact: Delays, increased costs, jeopardized timelines.

Technical Failures

- Software bugs, crashes, performance issues.
- Impact: Poor user experience, data loss, reputational damage.

Security Risks

- Exposure to data breaches and cyber-attacks.
- Impact: Loss of user trust, legal consequences, financial repercussions.

# Short Development Time

Impact on Quality:

- Short development time makes it challenging to ensure a high-quality product.
- Rushing through critical stages like design, coding, and testing.
- Increased likelihood of bugs and other issues in the final product.
- Limited ability to conduct thorough testing, leading to potential security vulnerabilities or poor user experience.

Mitigation Strategy:

- Prioritize core features essential for the app’s functionality (MVP – Minimum Viable Product).
- Defer less essential features for future updates.
- Use agile development practices and break the project into smaller sprints for better time management.
- Maintain regular communication with stakeholders to align expectations and manage scope creep.

# Limited Mobile App Development Experience

Impact on Development Efficiency:

- Lack of experience in building mobile apps can cause delays or errors.
- Challenges in optimizing for different platforms (iOS, Android).
- Difficulty implementing essential features like push notifications or in-app security measures.

Mitigation Strategy:

- Use cross-platform frameworks like Flutter or React Native.
- Hire external consultants or collaborate with mobile app experts.
- Ensure the app meets industry standards.
- Use early prototyping and get feedback from experienced developers.

# Lack of User Experience (UX) Knowledge

Impact on Functionality:

- Poor UX design can lower app adoption and retention rates.
- Ignoring end-users' needs (ease of navigation, intuitive design) can lead to confusion and difficulty in use.
- Users may abandon the app for alternative solutions.

Mitigation Strategy:

- Involve UX/UI designers early to create a user-friendly, optimized interface.
- Conduct user testing with the target audience (students) during development.
- Gather and iterate on user feedback to improve functionality and satisfaction before launch.

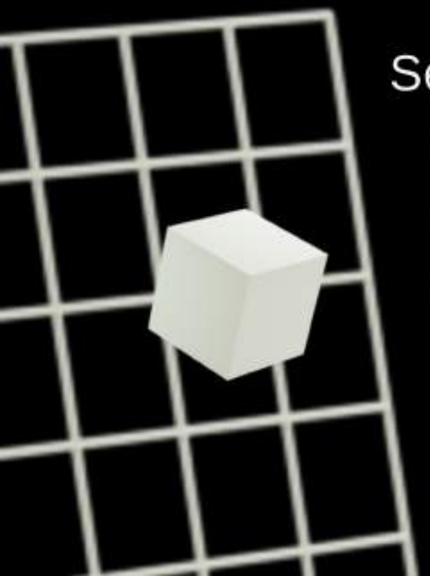
# Strategies for Managing Risks

Scope Creep:

- Define clear project requirements.
- Conduct regular reviews and approvals for changes.
- Prioritize essential features for the initial release.

Technical Failures:

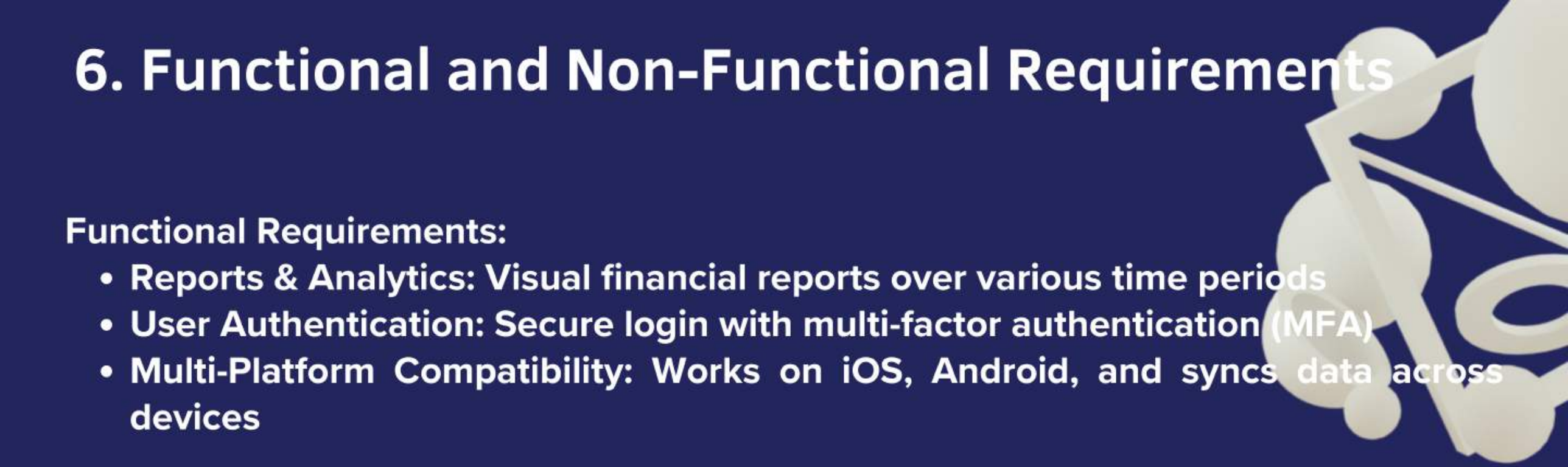
- Perform rigorous testing phases (unit, integration, UAT).
- Use version control for tracking changes.
- Monitor performance proactively post-launch.



Security Risks:

- Implement strong security protocols (encryption, authentication).
- Educate users on best security practices.
- Stay updated with security patches and updates.

# 6. Functional and Non-Functional Requirements



**Functional Requirements:**

- **Reports & Analytics: Visual financial reports over various time periods**
- **User Authentication: Secure login with multi-factor authentication (MFA)**
- **Multi-Platform Compatibility: Works on iOS, Android, and syncs data across devices**

**Non-Functional Requirements:**

- **Performance: Fast load times (<3s), supports 10,000 concurrent users**
- **Security: Data encryption (SSL/TLS), strong protocols, GDPR compliance**
- **Usability: Intuitive, student-friendly interface with accessibility support**
- **Scalability: Accommodates user and feature growth**
- **Reliability: 99.9% uptime, regular data backups**

# 7. Conclusion

**Key Benefits of the Proposed Mobile Application:**

1. **Enhanced User Experience: Intuitive interface and real-time expense tracking for easy financial management.**
2. **Increased Accessibility: Access financial information anytime, anywhere, supporting on-the-go management.**
3. **Greater Engagement: Push notifications encourage users to track expenses and financial goals.**
4. **Data Security: Strong security measures protect user information, building trust and confidence.**
5. **Scalability and Future Integration: Mobile-first approach with plans for desktop integration for a cross-platform financial management system.**

Thanks for
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