University of Houston-Victoria

Department of Computer and Information Science

Group Project

Expense Tracker

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# **Abstract**

The "Expense Tracker" aims to revolutionize personal finance management by offering a user-friendly platform to track and understand expenses effectively. By enabling users to categorize expenses, set budgets, and visualize spending patterns, the application empowers individuals and groups to achieve financial discipline. Targeting a diverse user base including students, families, and shared households, our platform provides personalized experiences and innovative features like group expense management.

Looking ahead, we envision integrating AI for personalized financial insights and AR for seamless expense tracking. Anticipating challenges in data security, user adoption, and technical compatibility, our team is committed to delivering a robust and scalable solution. Through this project, team members seek professional growth by mastering technologies like ReactJS, Java, and MySQL, and embracing agile methodologies. With a vast market potential and innovative characteristics, the "Expense Tracker" promises to redefine financial management for modern users.

# **Project Description**

The "Expense Tracker" project is envisioned to provide a robust software solution aimed at assisting individuals and groups in managing their finances efficiently. The primary goal of this project is to develop a comprehensive expense tracking application that will be commercially available in the marketplace. Through a user-friendly interface and innovative features, our aim is to empower users to gain insights into their spending habits, set financial goals, and achieve financial discipline.

## **Main Goals**

The main goal of the "Expense Tracker" project is to offer a sophisticated yet intuitive platform for managing expenses effectively. This software-based product will enable users to categorize their expenses, set budgets, track spending, visualize financial data, and manage group expenses seamlessly. Ultimately, our objective is to provide users with the tools they need to take control of their finances and achieve their financial goals.

## **Main Functionality and Characteristics**

The "Expense Tracker" will encompass several key functionalities, including user registration, expense categorization, budget creation, expense tracking, visualization of expenses through reports/charts, management of group expenses, and setting savings goals. The application will prioritize user-friendliness, personalization, and collaborative financial management.

## **Intended Users and Key Usability Goals**

Our target users include individuals, families, students, and shared households seeking to manage their finances effectively. The usability goals of the "Expense Tracker" are to provide an easy-to-use platform that offers a transparent view of finances, personalized experiences tailored to individual needs, insightful visual reports, and collaborative financial management features. By meeting these goals, users will benefit from improved financial control, informed decision-making, and streamlined expense management.

## **Potential for Further Development Beyond This Course**

Beyond the initial development phase, the "Expense Tracker" project holds significant potential for further enhancement and expansion. Future development areas may include integration with AI for personalized financial insights, incorporation of augmented reality for expense tracking, integration with financial sources such as bank accounts and digital wallets, internationalization with support for multiple currencies, notifications for various financial events, and social integration for sharing financial tips and tricks.

## **Challenges and Intended Technology**

Challenges anticipated during the project's development include ensuring data security and privacy, overcoming integration complexities, fostering user adoption, adhering to regulatory compliance, ensuring technical compatibility across different devices and platforms, and managing project timelines and unforeseen hurdles. The intended technology stack for the project includes ReactJS for front-end development, Java for backend, and MySQL for the database.

## **Professional Growth**

Participation in the "Expense Tracker" project offers team members opportunities for professional growth. By working on a full-stack application in an agile environment, team members will enhance their skills in areas such as front-end and back-end development, database management, project management, collaboration, and problem-solving. Additionally, exposure to cutting-edge technologies and real-world development challenges will contribute to the team members' professional development.

## **Team Members**

1. Aradhana Sharma: Has obtained a bachelor’s degree in computer science, along with 2 years of experience as a programmer and 3 years of experience as a programming instructor. Skills include C++, Java, JavaScript, Python, HTML, CSS, SQL/NoSQL, PHP, C#, Machine Learning, Deep Learning, Android Programming, PHP Programming, Game Development, Web & Mobile Application Development, Design and Analysis of Algorithms, Database Management System, Ethical Hacking.
2. Kapil Suryawanshi: Has obtained a bachelor’s degree in computer science, along with over two decades of experience in the software industry. Skills include project management, estimations, requirement analysis and solution architecting. On the technical front I am fond of and good at OOAD, UML, Java, JavaScript, HTML, CSS, SQL, ReactJS, Git and VBA.
3. Shayan Khan: Has obtained a bachelor’s degree in computer science, along with 2 years of experience as a full-stack developer. Skills include Java, JavaScript, C#, Python, MySQL, MongoDB, JQuery, and Git.
4. Suraj Odedra: Has obtained a bachelor’s degree in computer science. Skills include Java, JavaScript, HTML, CSS, Scala, Kotlin, SQL, Android App Development, React, and GIT.

# **Market Potential or Open-Source Significance**

The "Expense Tracker" project holds substantial market potential, driven by the growing demand for personal finance management tools and the increasing emphasis on financial literacy and discipline. The personal finance app market is vast and expanding rapidly, with a projected value of USD 1.4 billion in 2022 and an expected Compound Annual Growth Rate (CAGR) of 13.7% by 2028 (source: Yahoo Finance). This signifies a lucrative market opportunity for the "Expense Tracker" to tap into.

## **Commercial Promise and Differentiation**

The "Expense Tracker" aims to differentiate itself by focusing on specific user groups and offering innovative features not readily available in existing solutions. While established players like Mint and YNAB provide comprehensive budgeting tools, they often lack features such as group expense management and personalized insights. By addressing these gaps, our solution aims to carve a niche in the market and attract users seeking a more tailored and collaborative approach to financial management.

## **Technology and Market Entry Barriers**

Potential barriers to entry include integration complexities with AI/AR providers, cloud services, and third-party applications, as well as challenges posed by established competitors with existing customer bases and well-established business operations. Overcoming these barriers will require robust technical infrastructure, strategic partnerships, and a differentiated value proposition.

## **Operational and Support Challenges**

Operational challenges may arise in terms of user support, documentation, app updates and maintenance. Implementing FAQs, tutorials, and a dedicated support channel will be essential for efficient assistance. Additionally, regular updates for bug fixes, security patches, and new features will be required to ensure customer satisfaction and continued relevance in the market.

## **Scalability**

Scalability is critical for accommodating the growing user base and expanding functionalities of the "Expense Tracker." Cloud-based infrastructure with flexible architecture and efficient resource allocation will be essential to handle increasing data volume and maintain consistent performance. Moreover, a modular design will allow for seamless integration of future features without compromising stability.

## **Evidence of User Interest**

Evidence of user interest can be gleaned from market research reports, online forum discussions, and social media engagement. These sources can provide insights into user pain points and preferences, as well as indications of positive responses to financial management tools. By leveraging user feedback and market insights, the "Expense Tracker" can refine its features and offerings to better meet user needs and preferences.

## **Similar/Related Products**

Similar products in the market include Mint (<https://mint.intuit.com/>) and YNAB (<https://www.ynab.com/>) , which offer comprehensive budgeting tools but may lack certain features such as group expense management and personalized insights. The "Expense Tracker" aims to differentiate itself by combining the strengths of existing solutions with unique features tailored to specific user groups.

## **Novelty of Solution and Innovative Characteristics**

The "Expense Tracker" stands out with its innovative features such as group expense management, personalized financial insights leveraging AI, and augmented reality expense tracking. These features offer users a more collaborative, tailored, and intuitive approach to financial management, setting the "Expense Tracker" apart from competitors and addressing unmet needs in the market.

# **References**

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- Source: [Yahoo Finance](<https://finance.yahoo.com/news/global-personal-finance-software-market-091900876.html>)

2. Mint - Personal Finance and Budgeting App:

- Website: [Mint](<https://mint.intuit.com/>)

3. YNAB (You Need a Budget) - Budgeting Software:

- Website: [YNAB](<https://www.ynab.com/>)

4. Market Research Reports on Personal Finance Apps:

- [Statista] (<https://www.statista.com/>)

- [MarketWatch] (<https://www.marketwatch.com/>)

- [Grand View Research] (<https://www.grandviewresearch.com/>)

5. Online Forums and Discussions:

- [Reddit - Personal Finance] (<https://www.reddit.com/r/personalfinance/>)

- [Quora - Personal Finance] (<https://www.quora.com/topic/Personal-Finance>)

- [Stack Exchange - Personal Finance & Money] (<https://money.stackexchange.com/>)

6. Social Media Engagement:

- Twitter, Facebook, LinkedIn, YouTube.