" Mobile application Development" Subscription Tracker

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Abstract

With the increasing use of digital platforms, subscription-based services have become a routine part of everyday life. Users often subscribe to multiple applications such as OTT platforms, learning tools, music services, and cloud storage systems. As the number of subscriptions increases, managing renewal dates, tracking expenses, and handling shared payments becomes difficult. This frequently results in missed reminders, unexpected deductions, and inefficient financial planning.

This paper introduces SubMasterPro, a mobile application developed to help users monitor and manage all their subscriptions in one place. The application provides features such as renewal reminders using a calendar system, detailed expense tracking, and subscription cost sharing among multiple users. By offering timely alerts and transparent cost splitting, SubMasterPro helps users avoid unnecessary charges and gain better control over recurring expenses. The system aims to improve financial awareness, reduce subscription-related losses, and provide a simple and reliable subscription management solution.

1. INTRODUCTION

In recent years, the subscription-based model has become the foundation of many digital services. From entertainment and fitness applications to professional and educational platforms, users depend heavily on recurring services. While subscriptions are convenient, managing multiple active subscriptions can be confusing and time-consuming. Many users forget renewal dates or continue paying for services they no longer use.

One of the major problems faced by users is the absence of a unified platform to track subscriptions. Information related to billing amounts, renewal dates, and payment cycles is scattered across different applications and emails. This lack of organization often leads to poor financial tracking and unnecessary spending. Additionally, shared subscriptions among family members or friends further complicate expense management.

SubMasterPro is designed to address these challenges by providing a centralized mobile application that stores and manages all subscription details. The application notifies users before renewal dates through calendar reminders and allows users to divide subscription costs among participants. The primary goal of this project is to simplify subscription management and support smarter financial decisions.

2. LITERATURE SURVEY

Several studies have focused on personal finance and expense tracking applications. Early solutions mainly involved manual budgeting methods such as spreadsheets or basic expense-recording tools. Although these methods helped track spending, they lacked automation and were not effective for managing recurring subscription payments.

Modern budgeting applications introduced automatic expense categorization and visual summaries. However, most of these applications treat subscriptions as regular expenses, making it difficult for users to identify recurring charges clearly. Research indicates that users often overlook small recurring payments, which accumulate into significant expenses over time.

Reminder-based systems have proven to be effective in reducing missed payments and improving financial awareness. Applications that use calendar alerts and push notifications show higher user engagement and better payment management. Studies also emphasize the importance of simple and intuitive user interfaces in financial applications.

Expense-splitting systems have been explored in group finance applications, but most do not support recurring subscription models. This creates limitations for users who share subscription costs regularly. Based on the analysis of existing systems, SubMasterPro combines subscription tracking, reminder mechanisms, and shared expense management into a single mobile solution.

3. PROPOSED METHODOLOGY

The proposed methodology of **SubMasterPro** focuses on providing van efficient, accurate, and user-friendly approach to managing digital subscriptions. The system is designed in multiple stages to ensure smooth data handling, timely notifications, and clear financial insights for users.

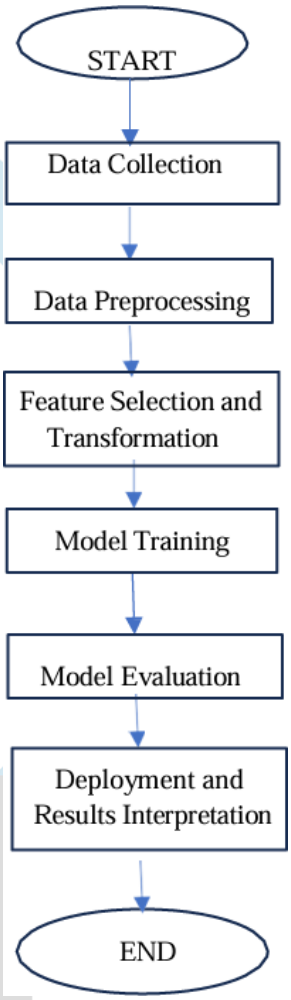
The first stage involves **user interaction and data entry**. Users register and log in to the application securely. Once logged in, users manually add subscription details such as the subscription name, service provider, billing amount, billing cycle (monthly or yearly), renewal date, and payment method. For shared subscriptions, users can add multiple participants and define how the subscription cost is divided among them. This ensures transparency and accurate expense tracking from the beginning.

In the second stage, **data storage and management** is carried out. All entered subscription information is stored securely in the application database. The system ensures data consistency and allows users to edit, update, or delete subscription records whenever required. This centralized storage helps maintain an organized record of all active and inactive subscriptions.

The third stage focuses on **calendar integration and reminder scheduling**. Based on the renewal date provided by the user, the system automatically schedules reminders using a calendar-based notification mechanism. Notifications are sent prior to the renewal date, ensuring users receive sufficient time to review, renew, or cancel subscriptions. This feature significantly reduces the risk of missed renewals and unwanted charges.

The fourth stage includes **expense calculation and subscription analysis**. The system computes total monthly and yearly subscription expenses by aggregating individual subscription costs. For shared subscriptions, the application automatically calculates each participant's contribution and tracks pending payments. This helps users understand their spending patterns and manage shared financial responsibilities effectively.

Finally, the processed data is presented through a **user-friendly dashboard interface**. The dashboard displays active subscriptions, upcoming renewals, total expenses, and shared payment status in a clear and structured format. By following this step-by-step methodology, SubMasterPro ensures e fficient subscription tracking, improved financial awareness, and enhanced user convenience.



4. OVERALL SYSTEM OUTPUT

The SubMasterPro mobile application was implemented and tested to evaluate its functionality, accuracy, and usability. The overall system output demonstrates that the application effectively manages subscriptions and improves user awareness of recurring expenses. The major system outputs are explained below:

- **Centralized Subscription Dashboard:**
  The system provides a single, organized dashboard where users can view all their active subscriptions. Each subscription displays important details such as service name, renewal date, billing cycle, and amount. This centralized view reduces confusion and allows users to manage multiple subscriptions efficiently without switching between different applications.
- **Reliable Renewal Reminder Notifications:**
  The calendar-based reminder system successfully sends notifications to users before subscription renewal dates. These alerts ensure that users are informed well in advance, helping them decide whether to continue, renew, or cancel a subscription. This feature minimizes the chances of missed renewals and unwanted automatic deductions.
- **Accurate Expense Calculation and Analysis:**
  The system calculates monthly and yearly subscription expenses accurately by analyzing all stored subscription data. Users can clearly understand how much they are spending on subscriptions over time. This output supports better budgeting and helps users identify high-cost or unused subscriptions.
- **Efficient Shared Subscription Cost Splitting:**
  For shared subscriptions, SubMasterPro automatically divides the total subscription cost among participants based on predefined sharing rules. The system tracks individual contributions and pending payments, ensuring transparency and fairness among users. This feature simplifies group subscription management and avoids payment-related misunderstandings.
- **User-Friendly and Responsive Interface:**
  The application output is presented through a clean and intuitive mobile interface. Information is displayed in a structured manner using lists and summaries, making it easy for users to understand subscription status and expenses. The smooth performance and responsive design enhance user experience and encourage consistent application usage.

5. FUTURE WORK

Future enhancements of SubMasterPro can focus on improving automation, intelligence, scalability, and overall user convenience. One important extension is the integration of automatic subscription detection through email scanning or bank transaction analysis. By identifying recurring transactions automatically, the application can reduce manual data entry, minimize user effort, and ensure that no active subscription is missed.

Another significant improvement involves incorporating artificial intelligence–based spending analysis. Using machine learning techniques, the system can analyse user subscription behaviour and provide personalized recommendations such as identifying unused or rarely accessed subscriptions, suggesting cancellations, downgrades, or more cost-effective alternatives. This feature would greatly assist users in optimizing their monthly and yearly expenses.

Future versions of SubMasterPro can also support multi-currency and international subscriptions, which is essential for users who subscribe to global services such as international OTT platforms or cloud services. Implementing cloud-based data synchronization would allow users to securely access their subscription data across multiple devices, ensuring flexibility and continuity.

Additional enhancements may include in-app renewal and payment integration, allowing users to renew subscriptions or settle shared payments directly within the application. Security can be further strengthened by implementing biometric authentication, encrypted storage, and secure access controls. These advancements will transform SubMasterPro into a more intelligent, scalable, and comprehensive subscription management system.

6. CONCLUSION

Future work can focus on expanding the system to handle larger and more diverse datasets from multiple industries. Currently, the model is trained on a specific dataset, but integrating cross-domain customer data—such as telecom, banking, and e-commerce—would improve its adaptability and generalization. This enhancement would help the system perform accurately even when applied to new environments with different customer behaviours and churn patterns.

Another important direction involves incorporating advanced machine learning techniques, such as deep learning models and ensemble stacking methods. These approaches can capture more complex relationships within customer data and potentially improve prediction accuracy. Additionally, integrating time-series models may enable the system to identify churn trends over time, giving businesses a clearer understanding of evolving customer behaviour.

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Another valuable extension is integrating explainable AI (XAI) features to provide deeper insights into model decisions. Techniques such as SHAP or LIME can help explain why the system classified a customer as high or low risk. This transparency would build user trust, support managerial decision-making, and ensure the system is utilized responsibly.

Finally, future work could involve deploying the churn prediction model into real-time operational environments, such as CRM platforms or customer service tools. This integration would allow businesses to take immediate action when a customer is flagged as at risk. By combining real-time data processing, automated notifications, and personalized retention strategies, the system can become a powerful tool for reducing churn and improving long-term customer engagement.

7. REFERENCES

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