# Gap Analysis Document: Personal Expense Tracker

| Category | Current State | Target State | Gap | Corrective Action | Priority | Owner | Due Date |
|---|---|---|---|---|---|---|---|
| **Business/ Quality Context** | Manual tracking of expenses with limited analytics insights. | Automated expense tracking with predictive modeling and enhanced analytics capabilities. | Lack of automation and predictive insights. | Develop an automated solution with predictive modeling and data analysis. | High | Project Manager | 11/03/2024 |
| **Stakeholders/ Users** | Users can only track expenses with minimal categorization. | Users can categorize expenses in detail and receive insights on spending patterns and trends. | Limited categorization and insights for users. | Expand categorization and provide trend analysis features. | Medium | Product Owner | 11/04/2024 |
| **Data Processes** | Basic data collection without advanced cleaning or feature engineering. | Data cleaning, transformation, and feature engineering implemented. | Incomplete data processes affect data quality. | Implement data cleaning, feature engineering, and transformation processes. | High | Data Analyst | 11/05/2024 |
| **Tools/ Techniques** | No predictive analytics or visualization tools used. | Use of predictive models (e.g., regression models) and interactive dashboards. | Lack of analytics and visualization capabilities. | Integrate predictive models and create interactive dashboards for users. | High | Data Scientist | 11/06/2024 |
| **Team/Training** | Limited understanding of data analysis and predictive modeling techniques among some team members. | Trained team with a clear understanding of data analysis, predictive modeling, and visualization tools. | Skills gap in advanced data analytics. | Provide training sessions and workshops on data analytics and visualization tools. | Medium | HR | 11/07/2024 |

| Category | Current State | Target State | Gap | Corrective Action | Priority | Owner | Due Date |
|---|---|---|---|---|---|---|---|
| **User Experience (UX)** | Limited user interface with minimal interactivity. | Intuitive and interactive user interface for better user engagement. | Lack of user-friendly interface. | Enhance UI design for usability and interactivity. | Medium | UI/UX Designer | 11/08/2024 |
| **Security** | Basic data security measures in place. | Enhanced data security with encryption and secure data storage. | Insufficient data security protocols. | Implement advanced security measures like encryption and access controls. | High | Security Team | 11/09/2024 |
| **Performance** | Limited scalability with potential performance issues as user base grows. | Scalable application capable of handling large datasets and concurrent users. | Scalability and performance limitations. | Optimize database and application architecture for scalability. | High | DevOps | 11/10/2024 |

# 1. Introduction

## Project Objective:

The primary goal of the Personal Expense Tracker is to create a web-based tool that enables users to monitor and categorize expenses, track financial patterns, and predict future spending. This project aims to improve users' financial literacy and budgeting capabilities by providing meaningful insights into their financial habits.

## Purpose of Gap Analysis:

This document highlights the gaps between the current state of expense tracking (if any) and the desired state with the new tool. By identifying these gaps, we can establish a roadmap to bridge them effectively, aligning the project deliverables with business objectives.

## 2. Current State Analysis

**Current State:**

- Manual Expense Tracking: Most users currently track expenses manually using spreadsheets or paper-based methods.
- Limited Insights: There is limited insight into spending patterns, and users struggle to identify trends without visual tools.
- No Predictive Capability: Users do not have predictive insights to help plan or forecast their expenses for future months.
- Inconsistent Categorization: Categorizing transactions is inconsistent, leading to difficulties in analyzing and grouping expenses effectively.

## 3. Desired Future State

**Future State (Desired Outcome):**

- Automated Expense Tracking: Provide an intuitive interface where users can log transactions or upload data easily.
- Categorization & Analysis: Automatically categorize expenses and provide trend analysis and insights.
- Predictive Modeling: Use machine learning models to predict monthly expenses based on past spending patterns.
- Data Visualization: Interactive dashboards for users to view and analyze spending trends over time, helping them make informed decisions.
- User-Friendly Interface: Create a web-based tool that is accessible and easy to use for a non-technical audience.

## 4. Gap Identification

| Area | Current State | Desired State | Gap |
|---|---|---|---|
| Expense Tracking | Manual or spreadsheet-based | Web-based automated tracking | Lack of digital infrastructure for automated logging |
| Categorization | Inconsistent manual categorization | Automated categorization with customization options | Inconsistent tracking methods prevent structured categorization |
| Trend Analysis | Minimal trend analysis due to limited tools | Comprehensive trend analysis with monthly, quarterly, and yearly insights | Lack of analytical tools for users to understand spending patterns |
| Predictive Modeling | No predictive insights | Predictive modeling to forecast expenses based on historical data | No machine learning models or algorithms currently applied to the data |
| Visualization | Static charts or none | Interactive dashboards and charts for dynamic insights | No visualization platform to support interactive and customizable analysis |
| User Experience (UX) | Complex, non-centralized tools (e.g., spreadsheets or apps with limited features) | User-friendly, centralized platform with easy navigation | Lack of cohesive user interface tailored for comprehensive expense tracking |
| Data Entry & Upload | Manual entry with potential for data inconsistencies | Ability to upload bulk data and reduce manual entry errors | No bulk data upload functionality, making data entry time-consuming |

## 5. Gap Analysis Summary

| Gap | Recommendation |
|---|---|
| Lack of digital infrastructure for automated logging | Develop an automated expense entry system, allowing users to add expenses or import transaction files. |
| Inconsistent tracking methods for categorization | Implement an automated categorization algorithm to standardize and simplify categorizing transactions. |
| Absence of analytical tools for spending patterns | Create interactive dashboards and incorporate trend analysis features for easy visualization. |
| No predictive models applied to data | Develop and integrate predictive models, such as time-series forecasting or regression analysis. |
| No platform for interactive visualizations | Utilize data visualization tools (e.g., Tableau, Power BI) for real-time, interactive reporting. |
| Lack of cohesive UX for tracking and analysis | Design a streamlined, user-friendly interface with clear navigation and comprehensive features. |
| Data entry is time-consuming and error-prone | Enable bulk data upload and entry error validation to streamline the data entry process. |

## 6. Action Plan

| Action Item | Responsible | Priority | Timeline | Status |
|---|---|---|---|---|
| Develop automated expense logging system | Dev Team | High | Month 1-2 | In Progress |
| Implement categorization algorithm | Dev Team | High | Month 1-2 | Pending |
| Design trend analysis dashboards | Data Analyst | Medium | Month 2-3 | Planned |
| Integrate predictive modeling functionality | Data Scientist | Medium | Month 3-4 | Planned |
| Create interactive visualization features | Data Analyst | Medium | Month 3-4 | Planned |
| Design and test user-friendly UX | UX Designer | High | Month 1-2 | In Progress |
| Enable bulk data upload option | Dev Team | Medium | Month 2-3 | Planned |