Product Requirements Document (PRD)

1. Product Overview

Product Name: Predictive Analytics for Personal Expenses and Financial Planning
Purpose: To help individuals track, analyze, and predict their personal expenses and financial behavior, enabling smarter budgeting, savings optimization, and long-term financial planning using data-driven insights.

---

2. Problem Statement

Many individuals struggle to manage personal finances due to lack of visibility into spending patterns, poor forecasting of future expenses, and limited guidance on savings and budgeting. Existing tools often provide historical tracking but fail to offer accurate predictions and actionable insights for future financial planning.

---

3. Goals & Objectives

- Predict future personal expenses based on historical data
- Identify spending patterns and financial trends
- Support better budgeting and savings decisions
- Enable proactive financial planning and goal tracking
- Provide personalized financial insights

Success Metrics: - ≥85% prediction accuracy for monthly expenses - Increased user budget adherence rate - Improved savings rate over time - High user engagement with insights and forecasts

---

4. Target Users

- Students managing monthly expenses
- Working professionals planning budgets and savings
- Families tracking household expenses
- Individuals interested in financial discipline and planning

---

5. Scope

In Scope

- Expense data collection and categorization
- Historical expense analysis
- Expense prediction and forecasting
- Budget recommendations
- Savings and financial goal tracking

• Visual dashboards and reports

Out of Scope

• Direct bank transaction execution
• Investment portfolio management
• Tax filing and compliance features

---

6. Key Features & Requirements

6.1 Expense Tracking

• Manual and file-based expense input
• Categorization (food, rent, travel, utilities, etc.)
• Date-wise and category-wise tracking

6.2 Predictive Analytics

• Time-series based expense forecasting
• Monthly and yearly expense predictions
• Detection of recurring expenses

6.3 Budget Planning

• Personalized budget recommendations
• Alerts for overspending risks
• Budget vs actual expense comparison

6.4 Financial Goal Planning

• Savings goal definition (short-term and long-term)
• Progress tracking against goals
• Predictive insights on goal achievement timeline

6.5 Analytics & Insights Dashboard

• Interactive charts and trend analysis
• Category-wise expense breakdown
• Forecast vs actual comparison

---

7. Functional Requirements

• Users can upload or enter expense data
• System cleans and preprocesses data
• Predictive models generate expense forecasts
• Dashboards update dynamically based on data
• Users receive actionable financial insights

---

8. Non-Functional Requirements

- **Performance:** Predictions generated within acceptable response time
- **Scalability:** Support growing user data volumes
- **Security:** Secure storage of financial data
- **Usability:** Simple and intuitive user interface
- **Reliability:** High availability and data accuracy

---

9. Data & Analytics Requirements

- Historical expense data (minimum 6 months recommended)
- Feature engineering for trends and seasonality
- Use of regression, time-series, or ML models
- Model evaluation using accuracy and error metrics

---

10. Assumptions & Constraints

- Users provide accurate expense data
- Predictions depend on historical spending behavior
- Initial model accuracy may improve over time with more data

---

11. Risks & Mitigation

Risk	Mitigation
Inaccurate predictions	Continuous model tuning
Incomplete user data	Data validation and prompts
User adoption issues	Simple UI and clear insights

---

12. Future Enhancements

- Automated bank data integration
- AI-driven personalized financial advice
- Scenario-based financial simulations
- Mobile application support

---

13. Stakeholders

- Product Owner
- Data Science Team
- Development Team

• End Users

---

14. Conclusion

This PRD defines the requirements for a predictive analytics system focused on personal expenses and financial planning. The solution aims to empower users with foresight into their financial future, enabling informed decisions, better budgeting, and improved financial stability.