# Predictive Models for Personal Expense Tracker

1. **Spending Forecast Model**
   * **Objective**: Predict future monthly expenses based on historical data trends.
   * **Model**: Utilizes linear regression to forecast monthly spending, allowing users to anticipate potential financial outflows and adjust budgets accordingly.
   * **Outcome**: Provides users with estimated monthly expenses, supporting proactive financial planning.
2. **Category-Based Budget Prediction**
   * **Objective**: Estimate spending for each category based on past behavior, such as food or entertainment.
   * **Model**: Applies time series analysis to categorize expenditures and predict category-specific spending trends.
   * **Outcome**: Offers insights into expected spending for each category, helping users set more accurate budget limits.
3. **Anomaly Detection Model**
   * **Objective**: Identify unusual spending spikes that deviate from normal patterns.
   * **Model**: Uses anomaly detection algorithms to monitor daily spending and flag irregularities.
   * **Outcome**: Alerts users to unexpected high expenses, allowing them to review and control impulsive or unplanned expenditures.
4. **Seasonal Spending Prediction**
   * **Objective**: Anticipate seasonal spending changes (e.g., holidays).
   * **Model**: Leverages historical data to identify seasonal trends, making it possible to forecast holiday-related expenses.
   * **Outcome**: Provides users with insights into anticipated seasonal expenses, encouraging better financial preparation.
5. **Future Development**
   * **Goal**: Implement machine learning for personalized predictive analytics as the dataset grows.
   * **Model**: Exploring ML models such as neural networks could enable deeper personalization, enhancing the user experience with more accurate financial forecasts.