

Smart Transaction Search & Spending Insights Platform

Objective

The purpose of this project is to design a transaction intelligence solution that categorizes financial transactions, enables smart search, and provides spending insights to improve financial awareness.

Problem Statement

Bank statements typically present long lists of transactions that are difficult to interpret. Without categorization and analysis, users struggle to understand spending habits, identify high-expense areas, and make informed financial decisions.

Solution Overview

This project transforms raw transaction data into meaningful financial insights through structured data processing, automated categorization, intelligent search, and visual analytics.

Dataset Description

The dataset simulates real bank transactions and includes:

- Transaction date
- Description (merchant/payment details)
- Transaction type (credit/debit)
- Account and payment channel
- Category (auto-classified)
- Month (derived for analysis)

Data was cleaned and formatted to ensure consistency and accurate analysis.

System Workflow

The system processes transaction data through the following stages:

- Data cleaning and formatting
- Automated categorization using keyword logic
- Smart search and filtering functionality
- Spending analysis using aggregation and pivots
- Visual dashboard for insights and trends

(Refer to the process flow diagram at the end)

Key Features

Automated Categorization: Transactions are classified into categories such as Food, Groceries, Transport, and Health using keyword-based logic.

Smart Transaction Search: Users can search transactions using merchant names or category keywords for retrieving transaction records.

Spending Analysis: Monthly spending totals and category-wise breakdowns are generated to identify patterns.

Visual Insights Dashboard: Charts and summaries present spending trends and financial behaviour in an easy-to-understand format.

Dashboard Insights & Findings

The dashboard highlights:

- Identification of highest spending category

- monthly spending trends
- category-wise spending patterns
- recurring subscription expenses
- essential spending such as health and utilities



Business Value

This solution helps users:

- understand spending patterns
- identify high-expense areas
- track financial behaviour over time
- Support better financial planning and decision making

Limitations

Categorization is rule-based and may require updates for new merchants
Insights are based on historical data and do not predict future spending

Future Enhancements

- AI-based auto categorization
- spending anomaly alerts
- budget tracking and notifications
- mobile application integration

System workflow diagram

