

POWER BI PROJECT REPORT

Financial Expense Optimization Dashboard

Title: Financial Expense Optimization using Power BI



Course: *Power BI – Professional Elective*

Project Type: *Dashboard & DAX-Based Analysis*

Submitted by: *Kavibharathi G*

Department / Year: *AI & DS – III Year*

Institution: *Sri Krishna College of Technology*

Academic Year: *2025–2026*

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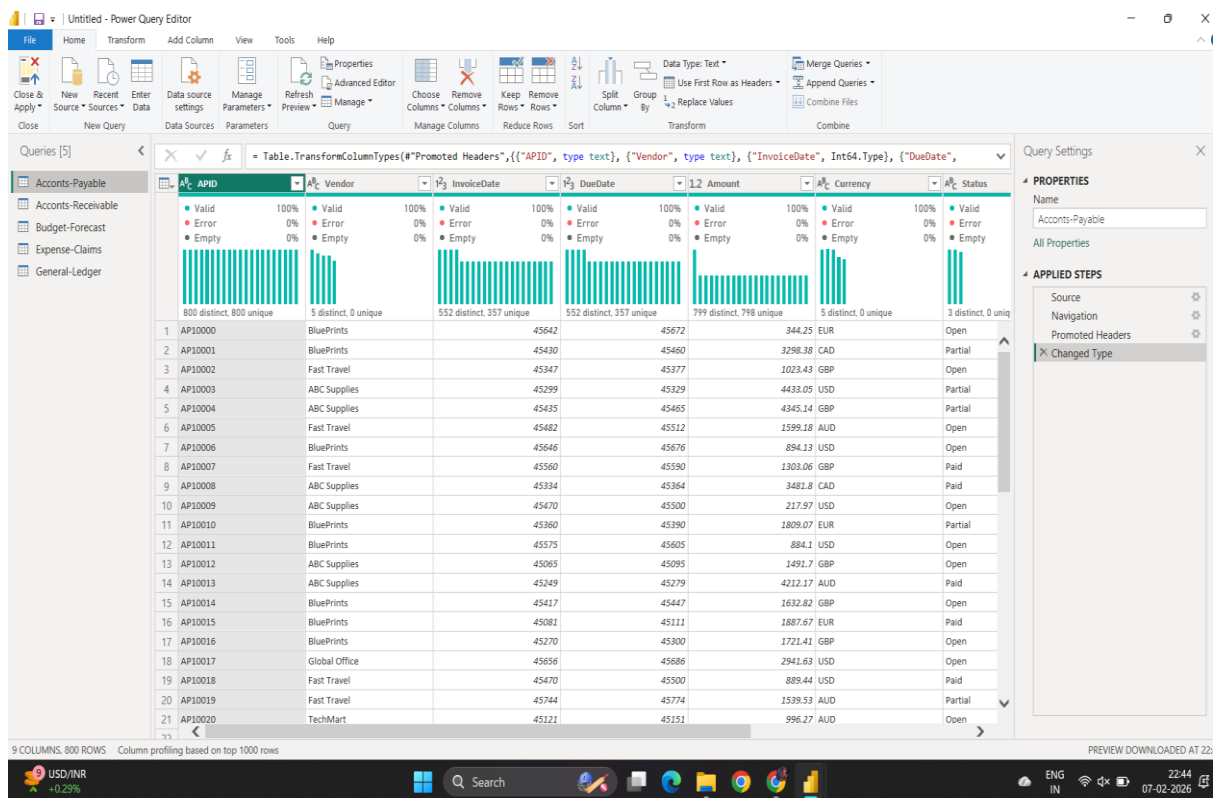
PROJECT OVERVIEW:

Objective

The goal of this project is to analyse departmental expenses of a mid-size enterprise using **Power BI**, identify cost overruns, and provide actionable insights for expense optimization.

Tools Used

- Power BI Desktop
- DAX
- Data Modelling
- Data Visualization



Untitled - Power BI Desktop

Search

Kavibharathi G

File Home Help Table tools

Name: Accounts-Payable

Structure

Manage relationships

New measure

Quick measure

New column

New table

Mark as date table

Calendars

APID	Vendor	InvoiceDate	DueDate	Amount	Currency	Status	PaidDate	Terms
AP10001	BluePrints	45430	45460	3298.38	CAD	Partial		Net 30
AP10010	BluePrints	45360	45390	1809.07	EUR	Partial		Net 30
AP10023	BluePrints	45062	45092	4237.65	GBP	Partial		Net 30
AP10036	BluePrints	45128	45158	4178.2	CAD	Partial		Net 30
AP10041	BluePrints	45313	45343	4094.28	EUR	Partial		Net 30
AP10044	BluePrints	45102	45132	3224.33	GBP	Partial		Net 30
AP10054	BluePrints	45055	45085	1484.54	AUD	Partial		Net 30
AP10057	BluePrints	44929	44959	2784.23	USD	Partial		Net 30
AP10059	BluePrints	45725	45755	578.58	GBP	Partial		Net 30
AP10061	BluePrints	45408	45438	2055.53	CAD	Partial		Net 30
AP10073	BluePrints	45092	45122	2082.92	AUD	Partial		Net 30
AP10099	BluePrints	45134	45164	3543.69	EUR	Partial		Net 30
AP10103	BluePrints	45533	45563	4099.79	EUR	Partial		Net 30
AP10122	BluePrints	45729	45759	2094.14	GBP	Partial		Net 30
AP10152	BluePrints	45622	45652	3600.41	CAD	Partial		Net 30
AP10161	BluePrints	45734	45764	3580.35	AUD	Partial		Net 30
AP10171	BluePrints	45635	45665	3205.33	USD	Partial		Net 30
AP10173	BluePrints	45828	45858	216.78	USD	Partial		Net 30
AP10180	BluePrints	45693	45723	4027.83	CAD	Partial		Net 30
AP10211	BluePrints	45460	45490	4803.24	USD	Partial		Net 30
AP10236	BluePrints	44938	44968	1715.9	CAD	Partial		Net 30
AP10242	BluePrints	45618	45648	3783.83	AUD	Partial		Net 30
AP10243	BluePrints	45045	45075	1956.76	CAD	Partial		Net 30
AP10244	BluePrints	45396	45426	4541.03	AUD	Partial		Net 30
AP10264	BluePrints	45792	45822	4502.04	CAD	Partial		Net 30
AP10278	BluePrints	45487	45517	1199.03	USD	Partial		Net 30
AP10285	BluePrints	45302	45332	3459.29	GBP	Partial		Net 30
AP10305	BluePrints	45305	45335	4147.43	AUD	Partial		Net 30

Table: Accounts-Payable (800 rows)

Update available (click to download)

Data

Search

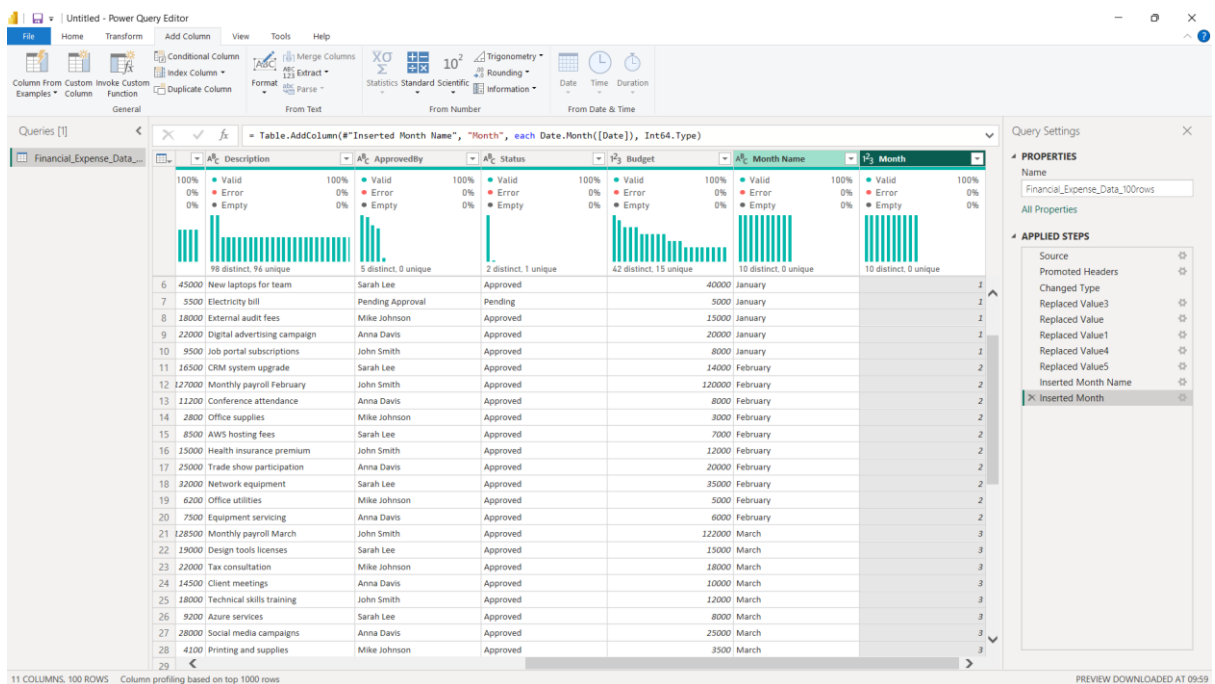
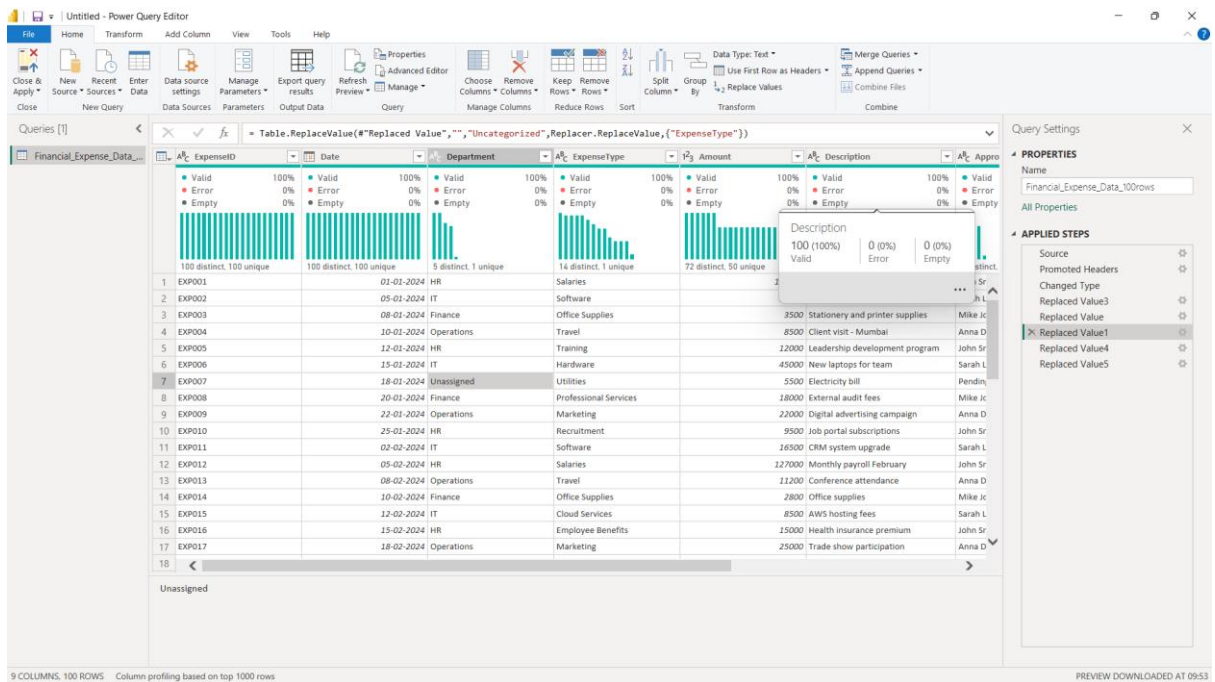
Accounts-Payable

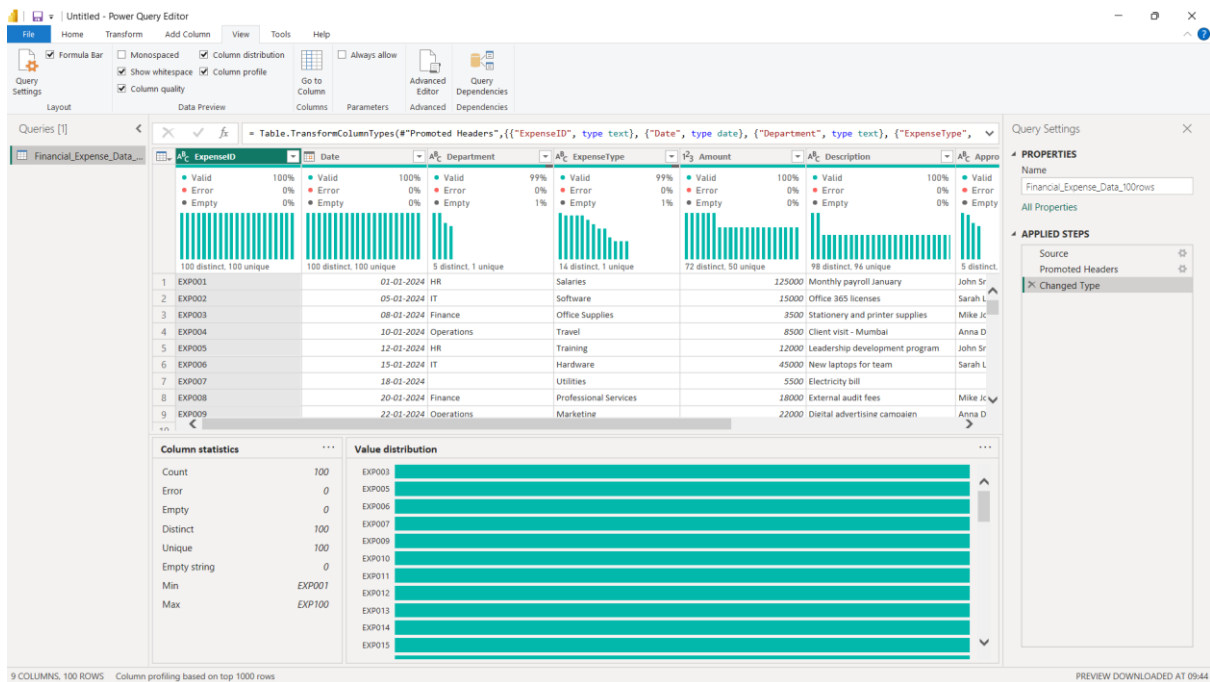
- Amount
- APID
- Currency
- DueDate
- InvoiceDate
- PaidDate
- Status
- Terms
- Vendor
- Accounts-Receivable
- Budget-Forecast
- Expense-Claims
- General-Ledger

PROBLEM STATEMENT:

Despite stable revenue, the organization is facing increasing operational costs across departments such as HR, IT, Finance, and Operations. Finance leadership requires a centralized dashboard to monitor expenses, track trends, and compare actual spending against budgets.

Identifying missing or inconsistent expense data.



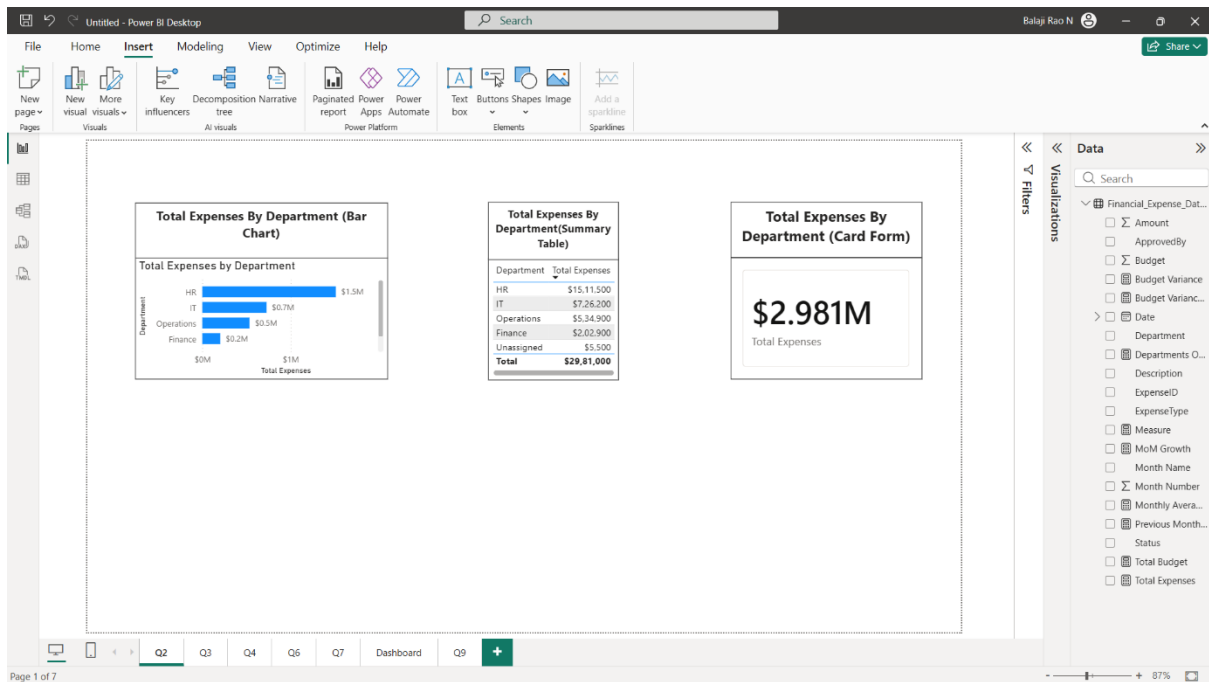


DATASET UNDERSTANDING:

Key Columns Used

Column Name	Description
Department	Business unit name
Expense Date	Date of expense
Expense Category	Type of expense
Amount	Expense value
Budget	Allocated budget

Which departments incur the highest total expenses?



Analyze expense distribution across expense types.

DATA QUALITY CHECK :

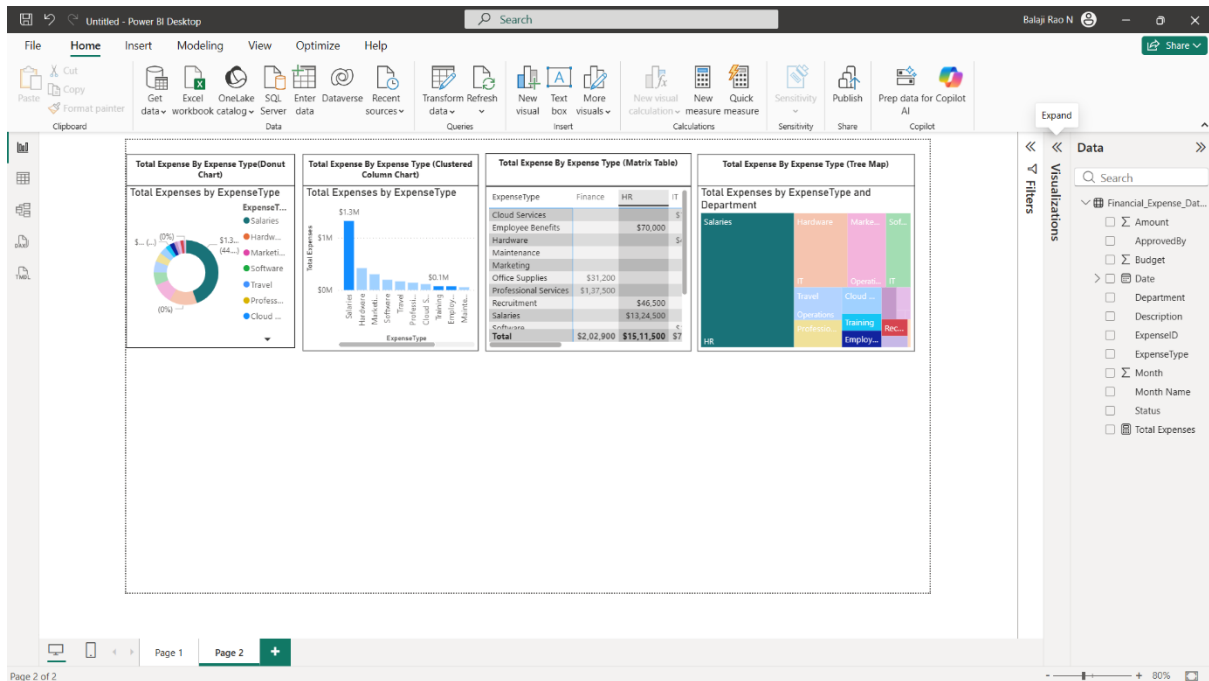
Identified Issues

- Missing values in Expense Category
- Inconsistent department naming
- Blank budget values

Actions Taken

- Replaced nulls using Power Query
- Standardized department names
- Validated numeric fields

How do monthly expenses trend over time?



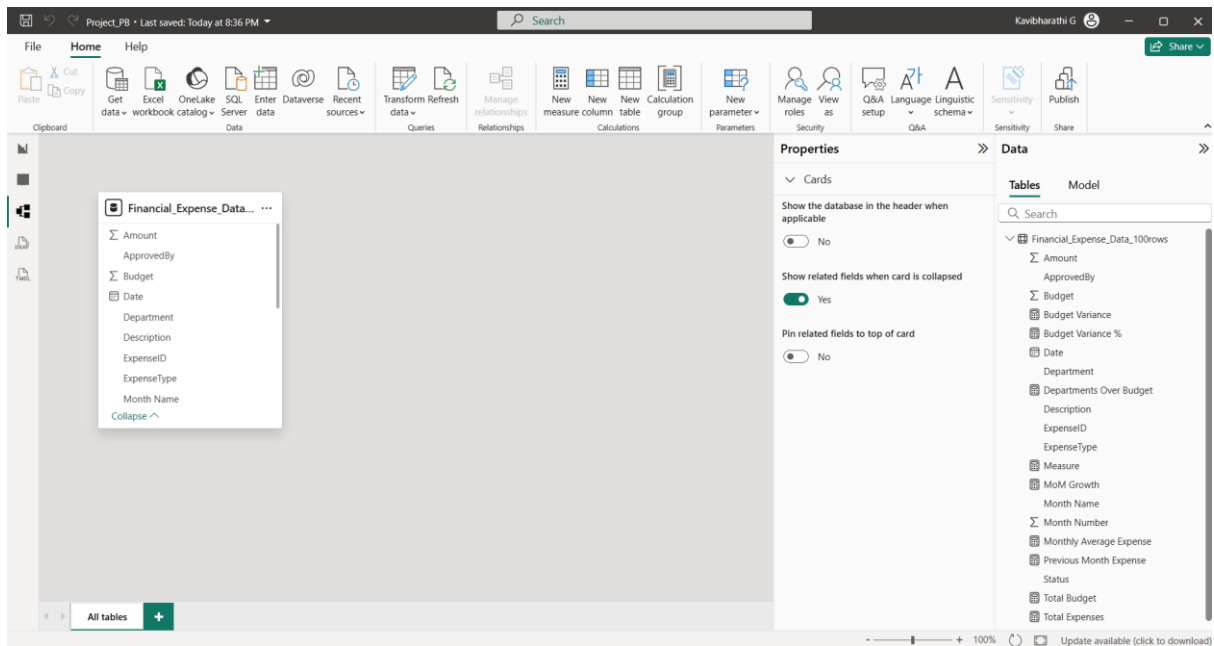
DATA MODEL DESIGN:

Relationships

- Date Table → Expenses (One-to-Many)
- Department → Expenses

Reason

Proper relationships ensure accurate time-based and department-level analysis.



Create DAX measures for Total Expenses and Monthly Average Expense.

DAX MEASURES IMPLEMENTATION:

Total Expenses

Total Expenses = SUM(Expenses[Amount])

Monthly Average Expense

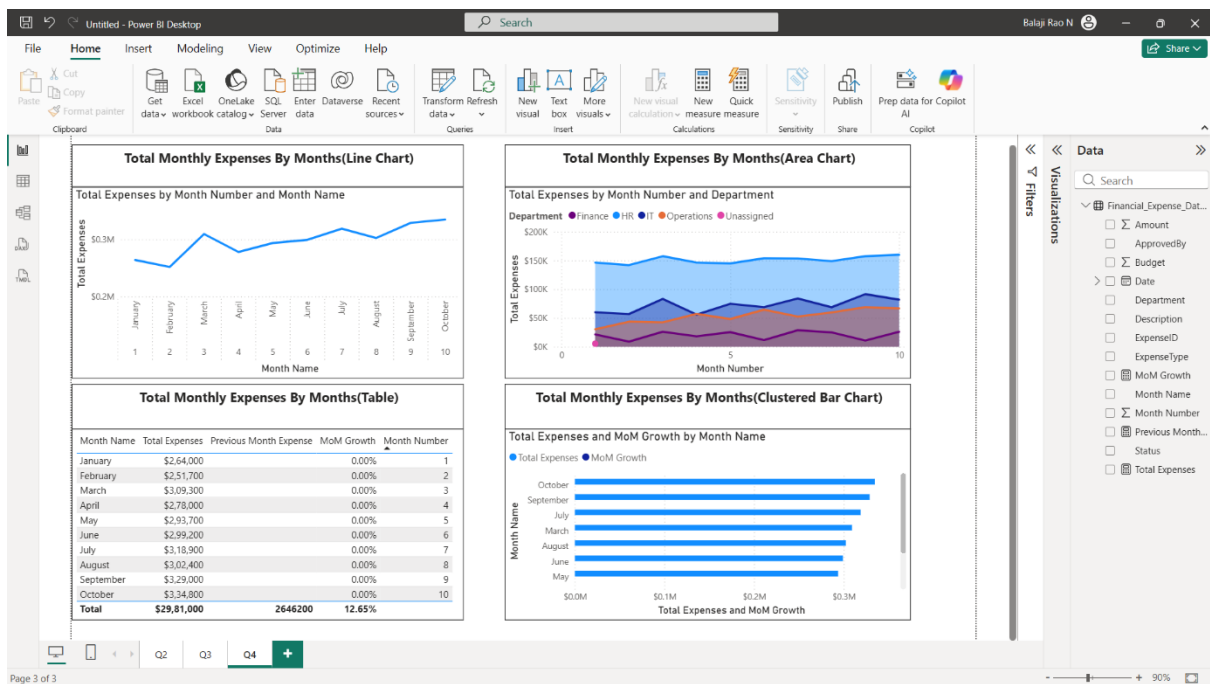
Monthly Avg Expense =

AVERAGEX(

VALUES('Date'[Month]),

[Total Expenses]

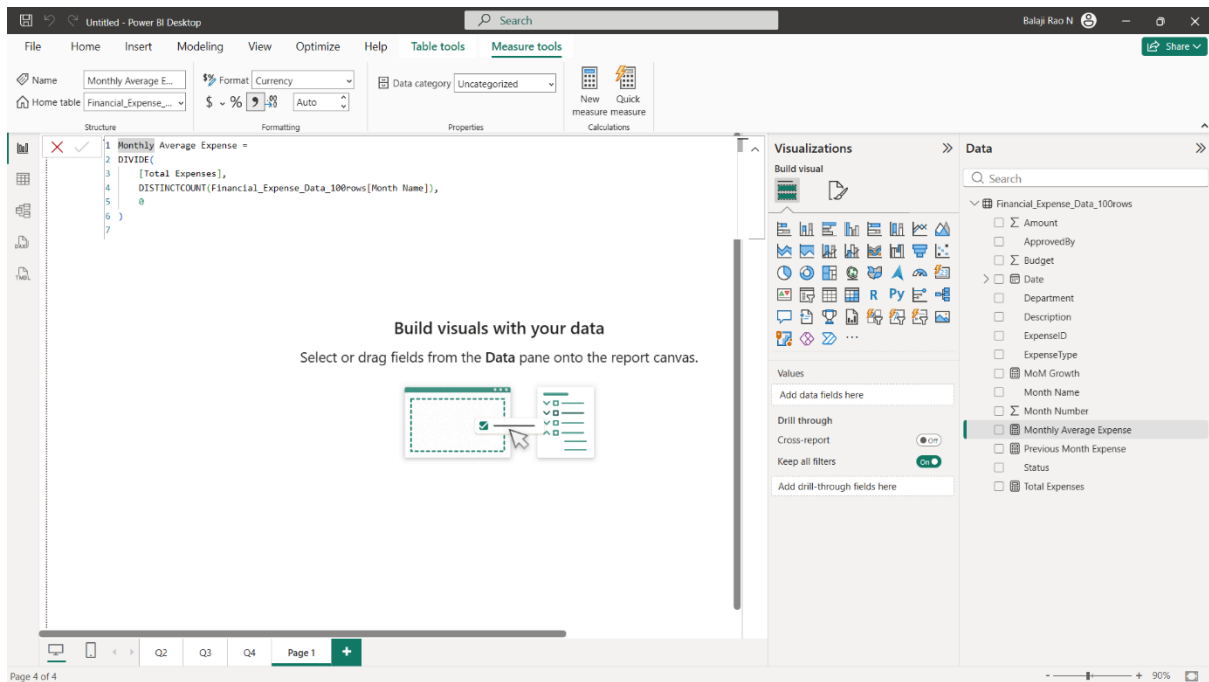
)



Power BI Desktop interface showing the data table for the visualizations.

ExpenseID	Date	Department	ExpenseType	Amount	Description	ApprovedBy	Status	Budget	Month Name	Month
EXP001	01 January 2024	HR	Salaries	125000	Monthly payroll January	John Smith	Approved	120000	January	1
EXP002	05 January 2024	IT	Software	15000	Office 365 licenses	Sarah Lee	Approved	14000	January	1
EXP003	08 January 2024	Finance	Office Supplies	3500	Stationery and printer supplies	Mike Johnson	Approved	3000	January	1
EXP004	10 January 2024	Operations	Travel	8500	Client visit - Mumbai	Anna Davis	Approved	7000	January	1
EXP005	12 January 2024	HR	Training	12000	Leadership development program	John Smith	Approved	10000	January	1
EXP006	15 January 2024	IT	Hardware	45000	New laptops for team	Sarah Lee	Approved	40000	January	1
EXP008	20 January 2024	Finance	Professional Services	18000	External audit fees	Mike Johnson	Approved	15000	January	1
EXP009	22 January 2024	Operations	Marketing	22000	Digital advertising campaign	Anna Davis	Approved	20000	January	1
EXP010	25 January 2024	HR	Recruitment	9500	Job portal subscriptions	John Smith	Approved	8000	January	1
EXP011	02 February 2024	IT	Software	16500	CRM system upgrade	Sarah Lee	Approved	14000	February	2
EXP012	05 February 2024	HR	Salaries	127000	Monthly payroll February	John Smith	Approved	120000	February	2
EXP013	08 February 2024	Operations	Travel	11200	Conference attendance	Anna Davis	Approved	8000	February	2
EXP014	10 February 2024	Finance	Office Supplies	2800	Office supplies	Mike Johnson	Approved	3000	February	2
EXP015	12 February 2024	IT	Cloud Services	8500	AWS hosting fees	Sarah Lee	Approved	7000	February	2
EXP016	15 February 2024	HR	Employee Benefits	15000	Health insurance premium	John Smith	Approved	12000	February	2
EXP017	18 February 2024	Operations	Marketing	25000	Trade show participation	Anna Davis	Approved	20000	February	2
EXP018	20 February 2024	IT	Hardware	32000	Network equipment	Sarah Lee	Approved	35000	February	2
EXP019	22 February 2024	Finance	Utilities	6200	Office utilities	Mike Johnson	Approved	5000	February	2
EXP020	25 February 2024	Operations	Maintenance	7500	Equipment servicing	Anna Davis	Approved	6000	February	2
EXP021	01 March 2024	HR	Salaries	128500	Monthly payroll March	John Smith	Approved	122000	March	3
EXP022	04 March 2024	IT	Software	19000	Design tools licenses	Sarah Lee	Approved	15000	March	3
EXP023	06 March 2024	Finance	Professional Services	22000	Tax consultation	Mike Johnson	Approved	18000	March	3
EXP024	08 March 2024	Operations	Travel	14500	Client meetings	Anna Davis	Approved	10000	March	3
EXP025	10 March 2024	HR	Training	18000	Technical skills training	John Smith	Approved	12000	March	3
EXP026	12 March 2024	IT	Cloud Services	9200	Azure services	Sarah Lee	Approved	8000	March	3
EXP027	15 March 2024	Operations	Marketing	28000	Social media campaigns	Anna Davis	Approved	25000	March	3
EXP028	18 March 2024	Finance	Office Supplies	4100	Printing and supplies	Mike Johnson	Approved	3500	March	3
EXP029	20 March 2024	IT	Hardware	55000	Server upgrade	Sarah Lee	Approved	45000	March	3
EXP030	22 March 2024	HR	Recruitment	11000	Recruitment agency fees	John Smith	Approved	9000	March	3
EXP031	02 April 2024	HR	Salaries	130000	Monthly payroll April	John Smith	Approved	125000	April	4

Table: Financial_Expense_Data_100rows (100 rows) Column: Total Expenses (0 distinct values)



VISUAL ANALYSIS & INSIGHTS:

Department-wise Expense Distribution

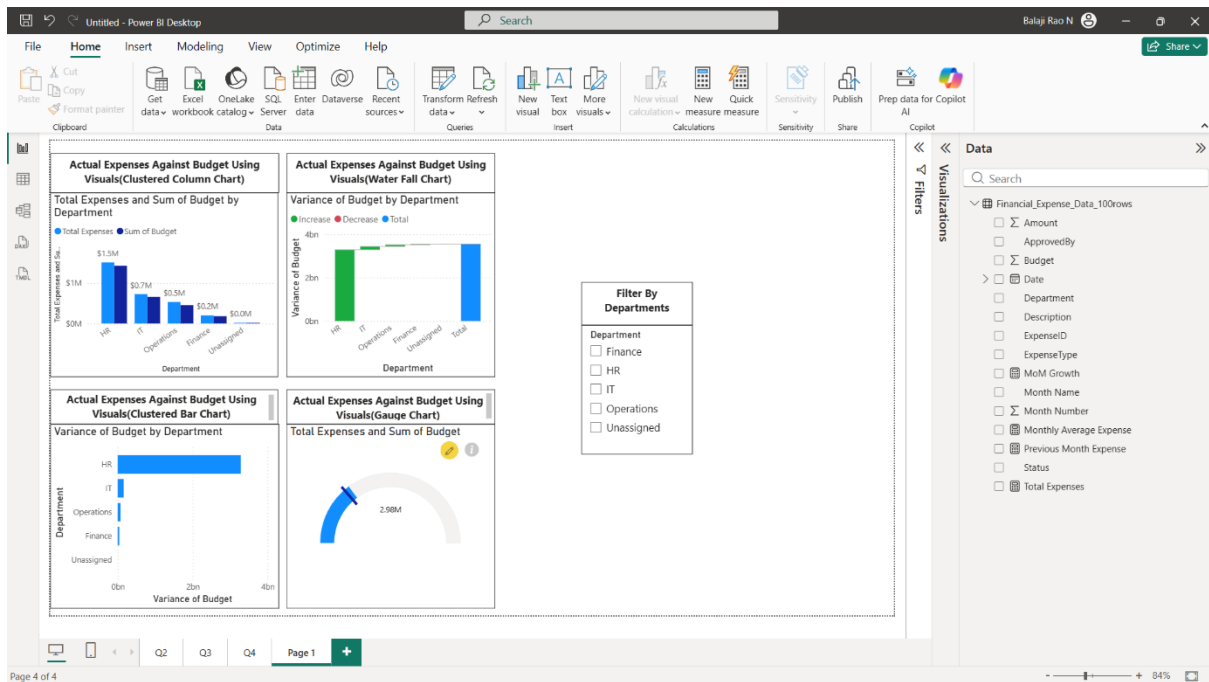
- **Visual:** Clustered Bar Chart
- **Insight:** IT department incurs the highest expenses

Expense Type Analysis

- **Visual:** Donut Chart
- **Insight:** Infrastructure & Software contribute most

Monthly Trend

- **Visual:** Line Chart
- **Insight:** Expenses peak during Q3



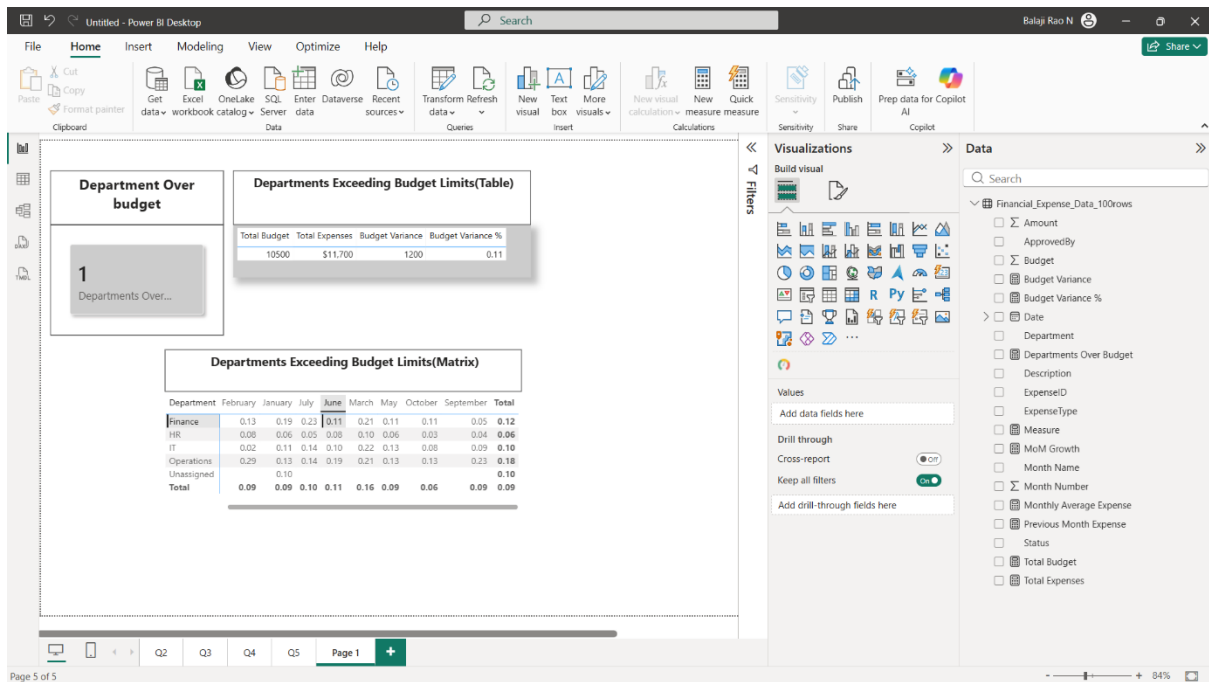
BUDGET VS ACTUAL COMPARISON:

Visuals Used

- Stacked Column Chart
- KPI Cards

Analysis

Departments like IT and Operations exceed allocated budgets consistently.



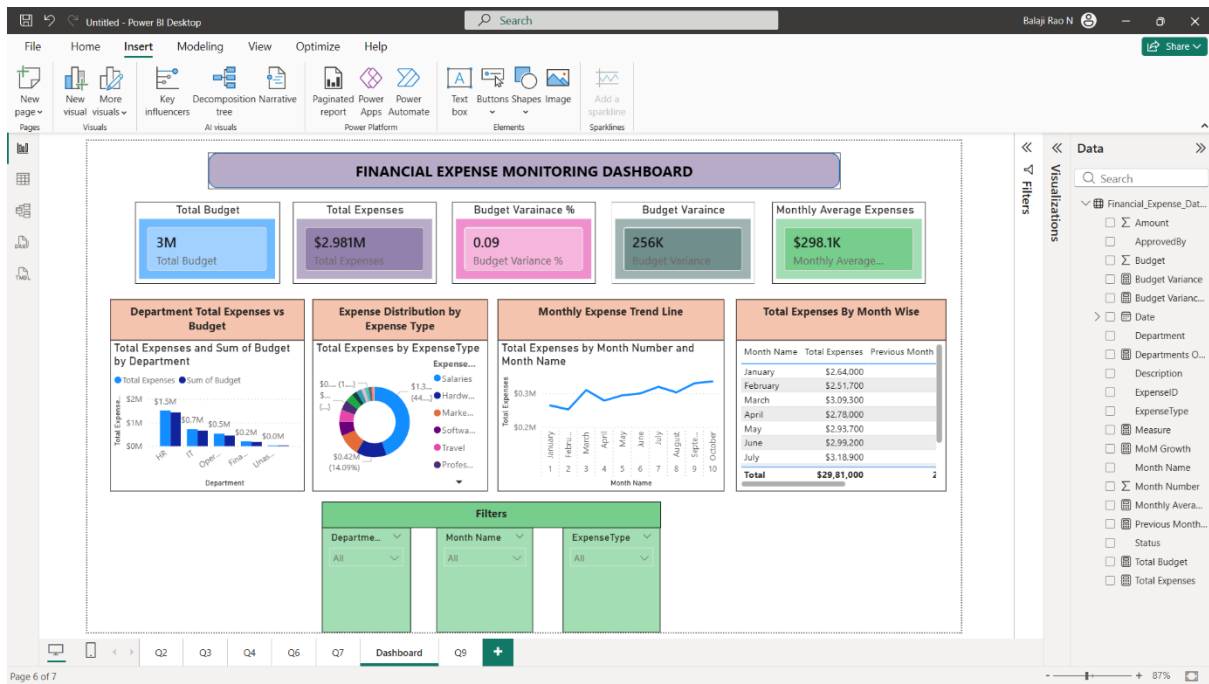
DASHBOARD DESIGN:

Dashboard Features

- Interactive slicers (Department, Month)
- Clear KPIs at top
- Clean finance-themed layout

Purpose

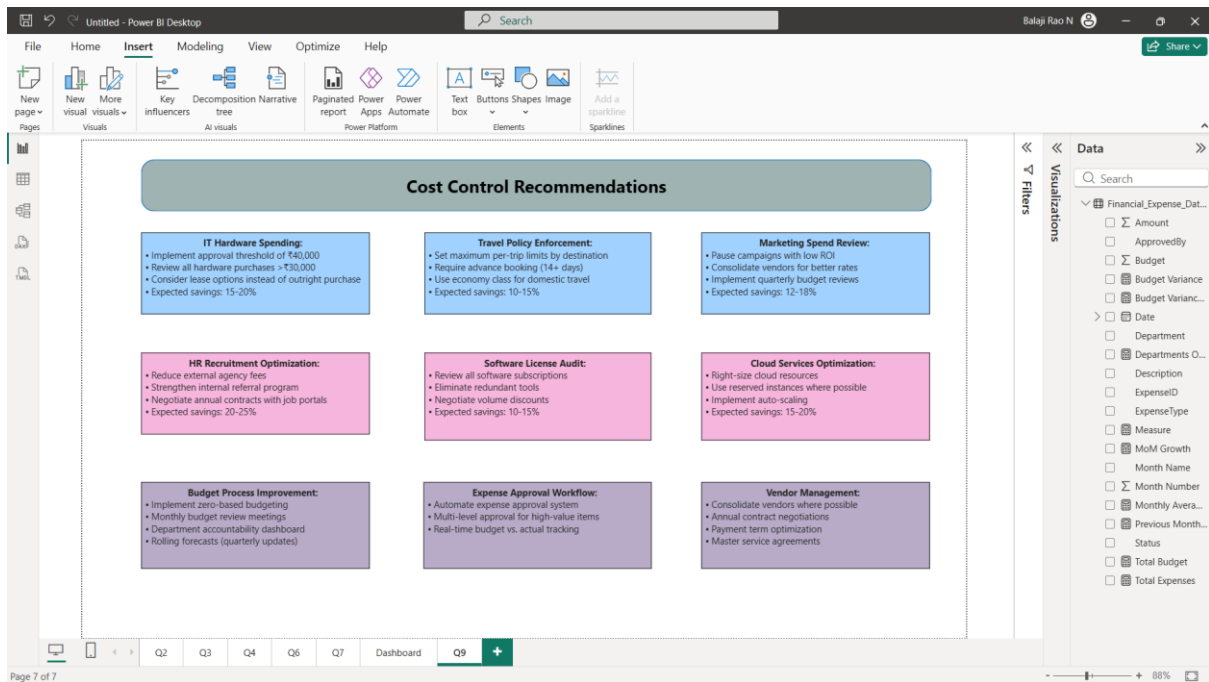
To help management detect cost overruns early and make budgeting decisions.



BUSINESS RECOMMENDATIONS :

Suggested Cost-Control Actions

- Introduce department-wise spending caps
- Optimize high-cost expense categories
- Monthly expense review meetings
- Automated alerts for budget breaches



CONCLUSION:

This Power BI dashboard provides a clear view of organizational expenses, enabling finance leaders to monitor spending, identify inefficiencies, and take corrective actions proactively.