CREATE TABLE Sales (

SaleID INT AUTO\_INCREMENT PRIMARY KEY,

SaleDate DATE NOT NULL,

Amount DECIMAL(18, 2) NOT NULL,

Category VARCHAR(50) NOT NULL

);

CREATE TABLE Expenses (

ExpenseID INT AUTO\_INCREMENT PRIMARY KEY,

ExpenseDate DATE NOT NULL,

Amount DECIMAL(18, 2) NOT NULL,

Category VARCHAR(50) NOT NULL

);

CREATE TABLE Budgets (

BudgetID INT AUTO\_INCREMENT PRIMARY KEY,

`Month` DATE NOT NULL,

SalesBudget DECIMAL(18, 2) NOT NULL,

ExpensesBudget DECIMAL(18, 2) NOT NULL

);

INSERT INTO Sales (SaleDate, Amount, Category)

VALUES

('2024-01-05', 1000.00, 'Product'),

('2024-01-15', 1500.00, 'Service'),

('2024-02-10', 2000.00, 'Product'),

('2024-03-20', 2500.00, 'Service'),

('2024-04-05', 3000.00, 'Product');

INSERT INTO Expenses (ExpenseDate, Amount, Category)

VALUES

('2024-01-10', 500.00, 'Rent'),

('2024-01-20', 300.00, 'Utilities'),

('2024-02-15', 700.00, 'Salaries'),

('2024-03-05', 600.00, 'Marketing'),

('2024-04-12', 800.00, 'Miscellaneous');

INSERT INTO Budgets (`Month`, SalesBudget, ExpensesBudget)

VALUES

('2024-01-01', 1200.00, 400.00),

('2024-02-01', 1300.00, 500.00),

('2024-03-01', 1400.00, 600.00),

('2024-04-01', 1500.00, 700.00),

('2024-05-01', 1600.00, 800.00);

SELECT \* FROM Sales;

SELECT \* FROM Expenses;

SELECT \* FROM Budgets;

-- Total Sales

SELECT

SUM(Amount) AS TotalSales

FROM

Sales

WHERE

SaleDate BETWEEN '2024-01-01' AND '2024-12-31';

-- Total Expenses

SELECT

SUM(Amount) AS TotalExpenses

FROM

Expenses

WHERE

ExpenseDate BETWEEN '2024-01-01' AND '2024-12-31';

SELECT

COALESCE(S.SaleDate, E.ExpenseDate) AS Date,

COALESCE(SUM(S.Amount), 0) AS TotalSales,

COALESCE(SUM(E.Amount), 0) AS TotalExpenses,

COALESCE(SUM(S.Amount), 0) - COALESCE(SUM(E.Amount), 0) AS NetProfit

FROM

Sales S

LEFT JOIN

Expenses E ON S.SaleDate = E.ExpenseDate

WHERE

S.SaleDate BETWEEN '2024-01-01' AND '2024-12-31'

GROUP BY

Date

UNION

SELECT

COALESCE(S.SaleDate, E.ExpenseDate) AS Date,

COALESCE(SUM(S.Amount), 0) AS TotalSales,

COALESCE(SUM(E.Amount), 0) AS TotalExpenses,

COALESCE(SUM(S.Amount), 0) - COALESCE(SUM(E.Amount), 0) AS NetProfit

FROM

Sales S

RIGHT JOIN

Expenses E ON S.SaleDate = E.ExpenseDate

WHERE

E.ExpenseDate BETWEEN '2024-01-01' AND '2024-12-31'

GROUP BY

Date;

-- Monthly P&L Statement

SELECT

YEAR(S.SaleDate) AS Year,

MONTH(S.SaleDate) AS Month,

SUM(S.Amount) AS MonthlySales,

SUM(E.Amount) AS MonthlyExpenses,

SUM(S.Amount) - SUM(E.Amount) AS MonthlyNetProfit

FROM

Sales S

LEFT JOIN Expenses E ON YEAR(S.SaleDate) = YEAR(E.ExpenseDate)

AND MONTH(S.SaleDate) = MONTH(E.ExpenseDate)

GROUP BY

YEAR(S.SaleDate), MONTH(S.SaleDate)

ORDER BY

Year, Month;

-- Variance Analysis

SELECT

B.Month,

B.SalesBudget,

COALESCE(SUM(S.Amount), 0) AS ActualSales,

B.SalesBudget - COALESCE(SUM(S.Amount), 0) AS SalesVariance,

B.ExpensesBudget,

COALESCE(SUM(E.Amount), 0) AS ActualExpenses,

B.ExpensesBudget - COALESCE(SUM(E.Amount), 0) AS ExpensesVariance

FROM

Budgets B

LEFT JOIN

Sales S ON MONTH(B.Month) = MONTH(S.SaleDate)

AND YEAR(B.Month) = YEAR(S.SaleDate)

LEFT JOIN

Expenses E ON MONTH(B.Month) = MONTH(E.ExpenseDate)

AND YEAR(B.Month) = YEAR(E.ExpenseDate)

GROUP BY

B.Month, B.SalesBudget, B.ExpensesBudget

ORDER BY

B.Month;

-- Cash Flow Calculation

SELECT

YEAR(ExpenseDate) AS Year,

MONTH(ExpenseDate) AS Month,

SUM(CASE

WHEN Category = 'Revenue' THEN Amount

ELSE 0

END) AS Inflows,

SUM(CASE

WHEN Category = 'Expense' THEN Amount

ELSE 0

END) AS Outflows,

SUM(CASE

WHEN Category = 'Revenue' THEN Amount

ELSE 0

END) - SUM(CASE

WHEN Category = 'Expense' THEN Amount

ELSE 0

END) AS NetCashFlow

FROM

(SELECT SaleDate AS ExpenseDate, Amount, 'Revenue' AS Category

FROM Sales

UNION ALL

SELECT ExpenseDate, Amount, 'Expense'

FROM Expenses) CF

GROUP BY

YEAR(ExpenseDate), MONTH(ExpenseDate)

ORDER BY

Year, Month;

DELIMITER //

CREATE PROCEDURE GeneratePnLReport(IN startDate DATE, IN endDate DATE)

BEGIN

-- Total Sales

SELECT

'Total Sales' AS Description,

COALESCE(SUM(Amount), 0) AS Amount

FROM

Sales

WHERE

SaleDate BETWEEN startDate AND endDate;

-- Total Expenses

SELECT

'Total Expenses' AS Description,

COALESCE(SUM(Amount), 0) AS Amount

FROM

Expenses

WHERE

ExpenseDate BETWEEN startDate AND endDate;

-- Profit and Loss

SELECT

'Net Profit' AS Description,

COALESCE(

(SELECT SUM(Amount) FROM Sales WHERE SaleDate BETWEEN startDate AND endDate)

-

(SELECT SUM(Amount) FROM Expenses WHERE ExpenseDate BETWEEN startDate AND endDate),

0

) AS Amount;

END //

DELIMITER ;

CALL GeneratePnLReport('2024-01-01', '2024-12-31');

-- Enable Event Scheduler

SET GLOBAL event\_scheduler = ON;

-- Create an Event to run the report daily

CREATE EVENT daily\_pnl\_report

ON SCHEDULE EVERY 1 DAY

DO

CALL GeneratePnLReport('2024-01-01', '2024-12-31');