



Low Level Design Document

Introduction

This Low Level Design (LLD) document outlines the implementation details for **AttriView - Employee Attrition Analysis**. The project aims to deliver a Power BI dashboard for analyzing employee attrition trends using HR data, leveraging DAX for calculations and Power BI visualizations.

1. System Components

Component	Description	Key Responsibilities
Data Source	HR data (CSV/Database)	Provide employee records
Data Model	Power BI data model	Structure and relate HR data
DAX Calculations	DAX measures and columns	Compute attrition rates, trends
Visualizations	Power BI charts (line, area)	Display attrition patterns
Dashboard Layout	Power BI report/dashboard	Organize visuals and filters

2. Class/Interface Overview

Entity	Type	Relationships	Key Methods/Attributes
Employee	Table	N/A	EmployeeID, Status, HireDate, TerminationDate, Department
AttritionMeasure	DAX	Uses Employee table	Calculates attrition rate
AttritionTrend	DAX	Uses Employee table	Calculates attrition over time

Key DAX Measures:

```
Attrition Rate =
DIVIDE (
    CALCULATE (COUNTROWS (Employee), Employee[Status] = "Terminated"),
    COUNTROWS (Employee)
)

Monthly Attrition =
CALCULATE (
    [Attrition Rate],
    DATESINPERIOD (Employee[TerminationDate], MAX (Employee[TerminationDate]), -12
)
```



3. Data Structure Overview

Table Name	Fields
Employee	EmployeeID (PK), Name, Department, Status, HireDate, TerminationDate

Relationships:

- Employee[Department] → Department[DepartmentName] (if Department table exists)

4. Algorithms/Logic

Attrition Rate Calculation (Pseudocode):

```
For each time period (e.g., month):
    terminated_count = count of employees with TerminationDate in period
    total_count = count of employees at start of period
    attrition_rate = terminated_count / total_count
```

Visualization Flow:

- Load HR data into Power BI
- Create DAX measures for attrition
- Build line/area charts using DAX outputs
- Add filters (e.g., Department, Date)

5. Error Handling

Scenario	Handling Approach
Missing/invalid HR data	Show “Data unavailable” message in visuals; log error
Division by zero in DAX	Use DAX <code>DIVIDE</code> function with alternate result (e.g., 0)
Data refresh failure	Notify user via Power BI error message
Inconsistent date formats	Enforce date parsing in Power BI queries

End of Document