**✅ DAX Calculation for my model**

**🔹 1. AgeGroup**

*(Categories based on age ranges)*

AgeGroup =

SWITCH(

TRUE(),

'HR\_data'[Age] <= 30, "Young",

'HR\_data'[Age] <= 40, "Mid-Age",

'HR\_data'[Age] <= 50, "Senior",

"Veteran"

)

**🔹 2. SalaryLevel**

*(Use Quartiles from MonthlyIncome)*

SalaryLevel =

VAR Q1 = PERCENTILEX.INC(ALL('HR\_data'), 'HR\_data'[MonthlyIncome], 0.25)

VAR Q2 = PERCENTILEX.INC(ALL('HR\_data'), 'HR\_data'[MonthlyIncome], 0.5)

VAR Q3 = PERCENTILEX.INC(ALL('HR\_data'), 'HR\_data'[MonthlyIncome], 0.75)

RETURN

SWITCH(

TRUE(),

'HR\_data'[MonthlyIncome] <= Q1, "Low",

'HR\_data'[MonthlyIncome] <= Q2, "Medium",

'HR\_data'[MonthlyIncome] <= Q3, "High",

"Very High"

)

**🔹 3. HighRiskFlag**

*(Identify employees with low satisfaction)*

HighRiskFlag =

IF(

'HR\_data'[JobSatisfaction] <= 2 &&

'HR\_data'[EnvironmentSatisfaction] <= 2,

"Yes",

"No"

)

**✅ Step 2: Data Modeling (Star Schema) in Power BI**

**⚙️ Goal**

Structure your model so that you have:

* 1 **Fact Table**: EmployeeData (main data)
* Multiple **Dimension Tables**: Department, JobRole, etc.
* **Clean relationships** for better performance, clarity & DAX logic

**🔹 STEP 1: Open Power Query**

1. In Power BI, go to **Home → Transform Data**  
   → this opens **Power Query Editor**.

**🔹 STEP 2: Create Dimension Tables (via Reference)**

We'll use the “Reference” feature to create lookup tables.

**✳️ For each dimension (e.g., Department):**

1. Right-click on EmployeeData table in Queries pane → **Reference**
2. Rename the new query to Department
3. Select only the Department column
4. Remove duplicates → **Home → Remove Rows → Remove Duplicates**
5. Done ✔️

Repeat this for:

| **Dimension Table** | **Column(s) to Keep** | **Rename Table As** |
| --- | --- | --- |
| Department | Department | Department |
| Job Role | JobRole | JobRole |
| Education Level | Education (numeric) | EducationLevel |
| Age Group | AgeGroup (your new column) | AgeGroup |
| Salary Level | SalaryLevel (your column) | SalaryLevel |
| Attrition Status | Attrition | AttritionStatus |

➡️ Use "Remove Duplicates" for each, and keep only the relevant column.

**🔹 STEP 3: Close & Apply**

* Click **Close & Apply** to exit Power Query and return to Power BI.

**🔹 STEP 4: Define Relationships**

1. Go to **Model View** (left-side panel with diagram icon)
2. Drag and drop to create relationships:
   * EmployeeData[Department] → Department[Department]
   * EmployeeData[JobRole] → JobRole[JobRole]
   * EmployeeData[Education] → EducationLevel[Education]
   * EmployeeData[AgeGroup] → AgeGroup[AgeGroup]
   * EmployeeData[SalaryLevel] → SalaryLevel[SalaryLevel]
   * EmployeeData[Attrition] → AttritionStatus[Attrition]
3. Ensure:
   * **Cardinality** is Many-to-One
   * **Cross filter direction** is Single

✅ You now have a clean **Star Schema**:

┌──────────────┐

│ Department │

└──────┬───────┘

│

┌──────▼───────┐

┌────────────┐ │ EmployeeData│ ┌─────────────┐

│ JobRole │◄──────┤ ├────►│ EducationLevel│

└────────────┘ └──────────────┘ └─────────────┘

▲ ▲ ▲

│ │ │

┌─────┴─────┐ ┌─────┴─────┐ ┌─────┴─────┐

│AgeGroup │ │SalaryLevel│ │Attrition │

└───────────┘ └───────────┘ └───────────┘