Lesson 21: HR Analytics Dashboard – Project Plan & Requirements laid out step by step, so you can use it as a blueprint for implementation in Power BI.

🎯 Project Objective

Build a comprehensive HR Analytics Dashboard in Power BI using the provided HR_Analytics.csv file. The solution will:

Monitor employee performance, retention, and engagement trends.

Provide executives & HR managers with interactive, role-based insights.

Use Power Query for cleaning, DAX for KPIs, and publish securely to Power BI Service.

📊 Dataset Details

Table: Employee_Performance
Key columns: Employment_id, Department, Age, Job Title, Hire_Date, Years_at_company, Education_level, Performance_Score, Monthly_Salary, Work_Hours_per_Week, Project_Handled, Overtime_Hours, Sick_Days, Remote_Work_Frequency, Team_Size, Training_Hours, Promotions, Employee_Satisfaction_Score, Resigned.

🛠 Power Query – Data Preparation

Rename columns → e.g., Employment_id → Employment ID.

Change data types:

Date: Hire_Date

Numeric: Monthly_Salary, Age, Years_at_company, etc.

Text: Department, Job Title.

Remove duplicates on Employment_id.

Create calculated columns:

Tenure Category:

if Years_at_company <= 2 then "New"
else if Years_at_company <= 5 then "Mid"

else "Veteran"

Overtime Category:

if Overtime_Hours > 10 then "High" else "Low"

Handle nulls: Replace with 0 or median; drop rows if critical.

Create Date Table via CALENDARAUTO(), mark as Date, relate to Hire_Date.

🔗 Data Model

Relationships:

Date[Date] → Employee_Performance[Hire_Date] (1:*).

Optional lookup tables: Department, Education Level, Job Title.

Ensure star schema, no circular relationships.

📐 DAX Measures (Key KPIs)

```
Employee Count := COUNTROWS ( Employee_Performance )

Resignation Rate :=
DIVIDE ( CALCULATE ( COUNTROWS ( Employee_Performance ), Employee_Performance[Resigned] = "Yes" ),
        [Employee Count] )

Avg Performance Score := AVERAGE ( Employee_Performance[Performance_Score] )

Avg Monthly Salary := AVERAGE ( Employee_Performance[Monthly_Salary] )

Avg Training Hours := AVERAGE ( Employee_Performance[Training_Hours] )

Avg Satisfaction := AVERAGE ( Employee_Performance[Employee_Satisfaction_Score] )

Overtime Utilization :=
```

DIVIDE (SUM (Employee_Performance[Overtime_Hours]), [Employee Count])

Sick Days per Employee :=
DIVIDE (SUM (Employee_Performance[Sick_Days]), [Employee Count])

Remote Work Adoption :=
DIVIDE (CALCULATE (COUNTROWS(Employee_Performance),
Employee_Performance[Remote_Work_Frequency] <> "None"),
[Employee Count])

Promotion Rate :=
DIVIDE (CALCULATE (COUNTROWS(Employee_Performance), Employee_Performance[Promotions] > 0),
[Employee Count])

Avg Tenure := AVERAGE (Employee_Performance[Years_at_company])

📑 Report Pages & Visuals
Page 1: Executive Summary

Cards: Total Employees, Resignation Rate, Avg. Performance Score, Avg. Monthly Salary.

Line Chart: Resignation Rate over Time (Date axis).

Clustered Column: Department vs Avg. Satisfaction.

Page 2: Department Insights

Bar: Employee Count by Department.

Heatmap (Matrix): Department vs Avg. Salary & Avg. Performance.

Pie: Education Level distribution.

KPI visual: Avg. Tenure by Department.

Page 3: Employee Engagement

Gauge: Avg. Satisfaction Score.

Donut: Remote Work Frequency.

Column: Avg. Overtime by Job Title.

Scatter: Training Hours vs Performance Score.

Page 4: Retention & Promotions

Matrix: Promotions by Department & Education Level.

Bar: Sick Days vs Resigned Employees.

Line: Training Trend over Years.

Card: Promotion Rate.

Page 5: Filters/Slicers

Department, Job Title, Education Level, Remote Work Frequency, Tenure Category, Resigned.

🎨 Power BI Features

DAX KPIs for all metrics.

Custom tooltips for employee details.

Drillthrough to Employee details page.

Bookmarks for navigation (tabs-like).

Conditional formatting on KPIs (e.g., green >80%).

Sync slicers across report pages.

Icons & branding (company logo, color theme).

☁️ Publish & Share (Power BI Service)

Create Workspace → HR Analytics.

Publish PBIX from Desktop.

Configure Scheduled Refresh (daily/weekly).

Package reports into an App for stakeholders.

Permissions:

HR Team → View access.

Managers → RLS (department-based filtering).

📱 Mobile View

Optimize with Mobile layout → add cards & KPIs first, hide complex visuals.

⚡ Optional Advanced Features

Row-Level Security (RLS) → Department-based restrictions for managers.

Paginated Reports → Printable HR summaries.

Power Automate → Alerts (e.g., Resignation Rate > 10%).

Q&A Visual → Natural language queries.

🔄 Versioning & Maintenance

Document changes in Workspace.

Backup PBIX before publishing.

Add “Last refresh date” card to dashboard.

Monthly data quality checks.