

# Power BI - lesson 21

## Lesson 21 – HR Analytics Dashboard: Project Plan & Requirements

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### 1. Project Objective

Design and build an **interactive HR Analytics Dashboard** in Power BI that helps HR executives track **employee performance, retention trends, department KPIs, and engagement**.

Key outcomes:

- Centralized HR insights.
  - Drill-down by department, job title, tenure.
  - Monitor resignation risks and engagement drivers.
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### 2. Dataset Details

Table: **Employee\_Performance**

Columns:

- **IDs & Categories:** Employment ID, Department, Job Title, Education Level.
  - **Demographics:** Age, Hire Date, Years at Company.
  - **Performance & Compensation:** Performance Score, Monthly Salary, Training Hours, Promotions.
  - **Engagement Metrics:** Work Hours/Week, Projects Handled, Overtime Hours, Sick Days, Remote Work Frequency, Employee Satisfaction.
  - **Attrition:** Resigned (Yes/No).
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### 3. Power Query – Data Preparation

## 1. Column Formatting

- Rename with proper casing ( `Employment ID` , `Work Hours per Week` ).

## 2. Data Types

- Dates: `Hire Date` → Date.
- Numbers: Salary, Age, Years at Company, Overtime Hours.
- Text: Department, Job Title, Education.

## 3. Duplicates

- Remove duplicates on `Employment ID` .

## 4. Calculated Columns

- **Tenure Category:**
  - 0–2 → "New"
  - 3–5 → "Mid"
  - 6+ → "Veteran"
- **Overtime Category:**
  - 10 → "High"
  - ≤10 → "Low"

## 5. Clean Nulls

- Salary/Performance: Replace with median.
- Non-critical text: Replace with "Unknown."

## 6. Date Table

- Create with `CALENDARAUTO()` .
  - Mark as Date table, relate to `Hire Date` .
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# 4. Data Model

- **Star schema** (fact = Employee\_Performance, dimensions = Department, Education, Job Title, Date).

- **Relationships:**
    - Date[Date] → Employee\_Performance[Hire Date] (1:M).
    - Lookup tables optional (Department, Education).
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## 5. DAX Measures (KPIs)

- `Employee Count = COUNT(Employee_Performance[Employment ID])`
  - `Resignation Rate = DIVIDE(CALCULATE(COUNTROWS(Employee_Performance), Employee_Performance[Resigned] = "Yes"), [Employee Count])`
  - `Avg Performance = AVERAGE(Employee_Performance[Performance Score])`
  - `Avg Salary = AVERAGE(Employee_Performance[Monthly Salary])`
  - `Avg Training Hours = AVERAGE(Employee_Performance[Training Hours])`
  - `Avg Satisfaction = AVERAGE(Employee_Performance[Employee Satisfaction Score])`
  - `Overtime Utilization = AVERAGE(Employee_Performance[Overtime Hours])`
  - `Sick Days per Employee = AVERAGE(Employee_Performance[Sick Days])`
  - `Remote Work Rate = DIVIDE(COUNTROWS(FILTER(Employee_Performance, Employee_Performance[Remote Work Frequency] <> "Never")), [Employee Count])`
  - `Promotion Rate = DIVIDE(COUNTROWS(FILTER(Employee_Performance, Employee_Performance[Promotions] > 0)), [Employee Count])`
  - `Avg Tenure = AVERAGE(Employee_Performance[Years at company])`
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## 6. Report Pages & Visuals

### Page 1 – Executive Summary

- **Cards:** Employee Count, Resignation Rate, Avg Performance, Avg Salary.
- **Line Chart:** Resignation Rate over Time.
- **Clustered Column:** Department-wise Satisfaction.

### Page 2 – Department Insights

- **Bar Chart:** Employees by Department.

- **Heatmap:** Avg Salary vs Performance by Department.
- **Pie Chart:** Education Level.
- **KPI:** Avg Tenure by Department.

### **Page 3 – Employee Engagement**

- **Gauge:** Employee Satisfaction.
- **Donut Chart:** Remote Work Frequency.
- **Column Chart:** Avg Overtime by Job Title.
- **Scatter Plot:** Training Hours vs Performance.

### **Page 4 – Retention & Promotions**

- **Matrix:** Promotions by Department & Education.
- **Bar Chart:** Sick Days vs Resigned.
- **Line Chart:** Training Trend over Time.
- **Card:** Promotion Rate.

### **Page 5 – Filters & Slicers**

- Department, Job Title, Education, Remote Work, Tenure Category, Resigned (Yes/No).
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## **7. Power BI Features to Apply**

- **Custom tooltips:** e.g., hover over Dept → show Avg Salary, Tenure.
  - **Drillthrough pages:** Dept → Employee details.
  - **Bookmarks:** Page navigation.
  - **Conditional Formatting:** Highlight high resignation departments.
  - **Sync Slicers:** Keep consistent filters across pages.
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## **8. Publishing & Sharing (Power BI Service)**

- Create **Workspace** → HR Analytics.
  - Publish from Desktop.
  - Set **Scheduled Refresh** (daily/weekly).
  - Publish as **App** for HR stakeholders.
  - **Permissions:**
    - HR Team = View all.
    - Department Managers = RLS filter by Department.
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## 9. Mobile View Optimization

- Rearrange visuals vertically.
  - Keep KPIs at the top (cards).
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## 10. Optional Advanced Features

- **Row-Level Security (RLS)** → Dept-level access.
  - **Paginated Reports** → Print HR summary.
  - **Power Automate Alerts** → Notify HR if resignation > threshold.
  - **Q&A Visual** → "Which dept has highest overtime?"
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## 11. Versioning & Maintenance

- Keep PBIX backups.
- Document updates in Service.
- Track refresh logs and performance.