

# CAPSTONE PROJECT

**PROJECT TITLE: HR ANALYTICS  
AND ATTRITION DASHBOARD**

**PRESENTED BY**

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# OUTLINE:

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

# PROBLEM STATEMENT:

Recruitment processes generate large volumes of HR data, but manual analysis and fragmented systems make it difficult to gain meaningful insights. This leads to inefficiencies in hiring, poor tracking of recruitment performance, and delayed decision-making. An **HR Recruitment Analysis Dashboard** is needed to visualize recruitment data, identify trends and bottlenecks, and support effective, data-driven hiring decisions.

# PROPOSED SOLUTION:

- The proposed system aims to improve recruitment decision-making by providing a centralized **HR Recruitment Analysis Dashboard** that transforms raw HR data into meaningful insights.
- **Data Collection:**  
Recruitment-related data such as candidate details, hiring stages, departments, and attrition records are collected from historical HR datasets.
- **Data Preprocessing:**  
The collected data is cleaned and preprocessed to handle missing values, inconsistencies, and duplicates. Relevant features are extracted to support effective analysis.
- **Data Analysis & Visualization:**  
Analytical techniques are applied to identify hiring trends, recruitment performance, and bottlenecks. Interactive visualizations are used to present insights in an intuitive manner.
- **Dashboard Development:**  
A user-friendly dashboard is developed to allow HR professionals to monitor key recruitment metrics, filter data, and generate insights in real time.
- **Evaluation:**  
The system is evaluated based on accuracy, usability, and effectiveness in supporting data-driven recruitment decisions.
- **Result:**  
The proposed solution enables efficient recruitment analysis, improved hiring strategies, and informed workforce planning.

# SYSTEM APPROACH:

- The system approach outlines the methodology used to develop the **HR Recruitment Analysis Dashboard** using **Power BI** for effective visualization and decision-making.

## **System Requirements:**

- Historical HR recruitment dataset (CSV / Excel)
- Computer system with minimum 8 GB RAM
- Microsoft **Power BI Desktop**
- Windows operating system
- Stable internet connection for data refresh and sharing

## **Tools / Components Used:**

- **Power BI Desktop** – Dashboard development and visualization
- **Power Query** – Data cleaning and transformation
- **DAX (Data Analysis Expressions)** – Calculated measures and KPIs
- **Excel / CSV** – Data source integration

# ALGORITHM & DEPLOYMENT:

- This section describes the analytical approach used to process and analyze recruitment data for the **HR Recruitment Analysis Dashboard**.
- **Algorithm Selection**
- The system uses **descriptive and diagnostic analytics** rather than predictive machine learning algorithms, as the objective is to analyze historical recruitment data and evaluate hiring performance. Power BI's analytical engine and **DAX (Data Analysis Expressions)** are employed to compute recruitment metrics and generate insights.
- **Data Input**
- The algorithm takes HR recruitment data as input, including candidate details, job roles, departments, hiring status, recruitment stages, and attrition information. The data is imported from structured sources such as CSV or Excel files.
- **Processing Logic**
- Data preprocessing and transformation are performed using **Power Query** to handle missing values, remove inconsistencies, and standardize the data. Key performance indicators such as total hires, attrition rate, department-wise recruitment, and hiring trends are calculated using DAX formulas.
- **Analysis & Output Generation**
- The processed data is visualized using interactive dashboards, charts, and slicers in Power BI. These visual outputs enable HR professionals to analyze recruitment trends, identify bottlenecks, and make informed, data-driven recruitment decisions.

# RESULT:

- The HR Recruitment Analysis Dashboard successfully provides meaningful insights into the recruitment process through interactive and visual analytics.
- The dashboard presents key recruitment metrics such as total hires, department-wise recruitment, hiring trends, and attrition rates in a clear and intuitive manner. Visualizations including bar charts, line graphs, KPI cards, and filters enable users to compare recruitment performance across departments and time periods.
- The results demonstrate improved visibility into recruitment patterns, helping HR teams identify bottlenecks, monitor hiring efficiency, and make informed, data-driven decisions. The use of Power BI ensures accurate, real-time analysis and enhances the overall effectiveness of recruitment planning and workforce management.

# HR ANALYTICS DASHBOARD

Count OF Employee  
**74**

Attrition  
**9**

Attrition Rate  
**12.16%**

Human Resources

Research & Developme...

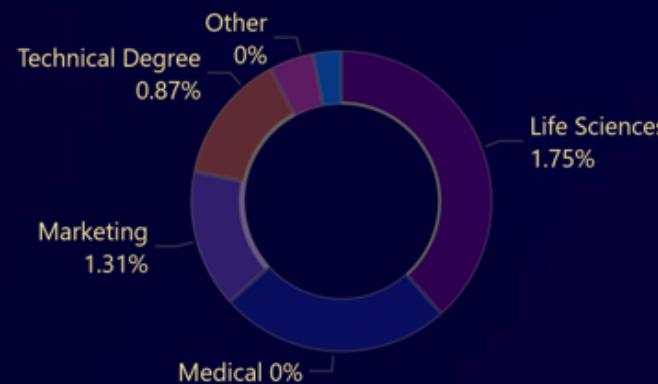
Sales

Avg Age  
**35**

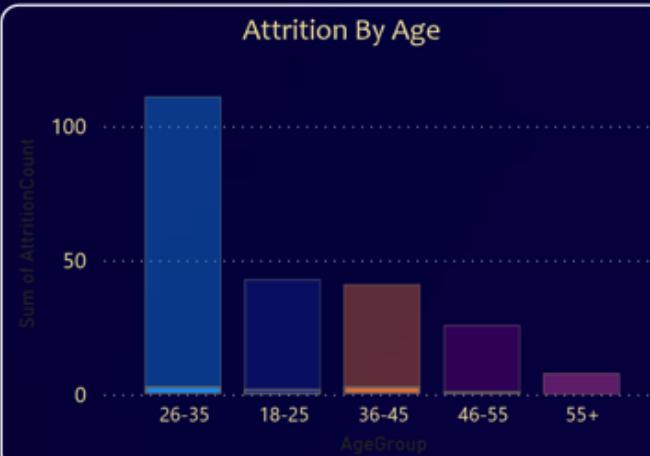
Avg Salary  
**5.6K**

Avg Working Years  
**6.0**

Attrition By Education

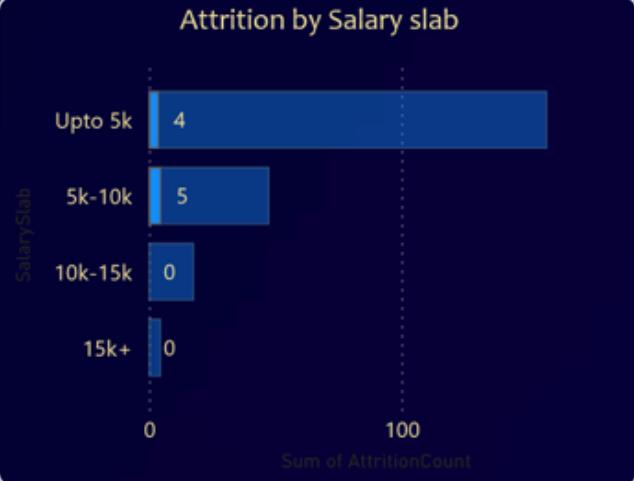


Attrition By Age



JobRole	1	2	3	4	Total
Sales Executive	1	3	1	5	
Research Scientist	1	0	2	0	3
Research Director	0				0
Manufacturing Director	0	0	0	0	
Manager	0				0
Laboratory Technician	0	0	1		1
Human Resources	0	0			0
Healthcare Representative	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>9</b>

Attrition by Salary slab



Attrition by years at company



Attrition by Job Role



# HR ANALYTICS DASHBOARD

Human Resources

Research &amp; Developme...

Sales

**Count OF Employee**

3

**Attrition**

0

**Attrition Rate**

0.00%

**Avg Age**

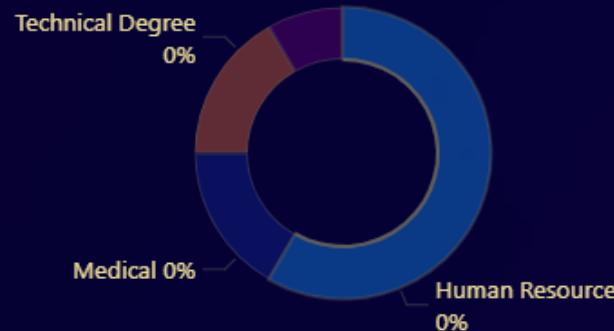
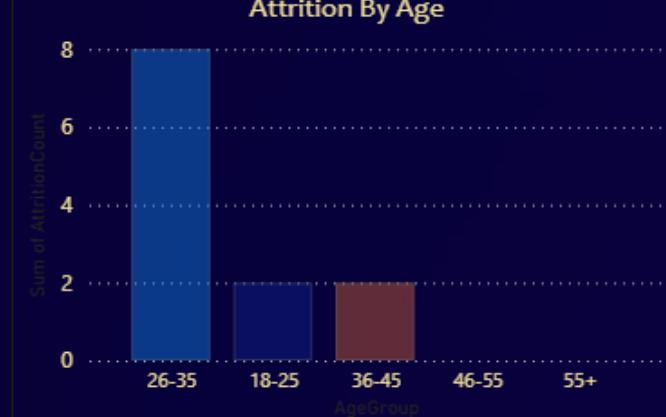
40

**Avg Salary**

3.7K

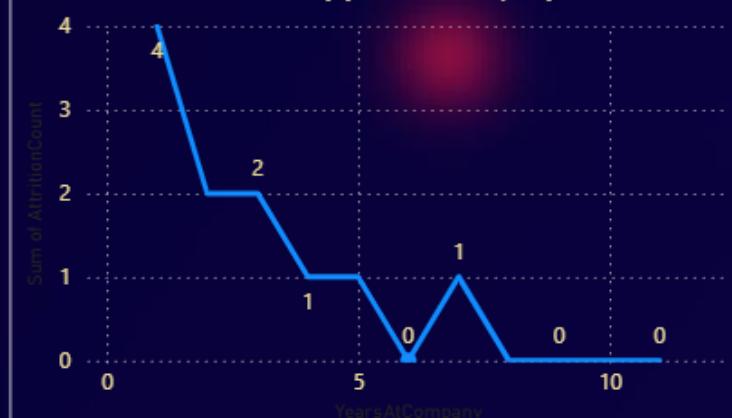
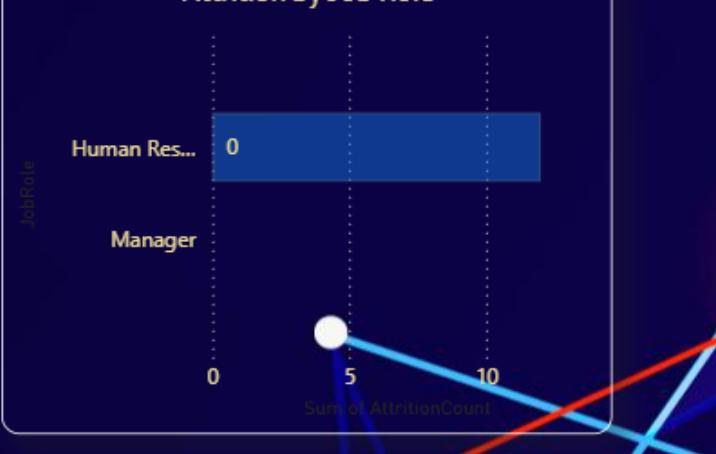
**Avg Working Years**

6.0

**Attrition By Education**

**Attrition By Age**

**JobRole** 2 3 Total

	2	3	Total
Human Resources	0	0	0
Total	0	0	0

**Attrition by Salary slab**

**Attrition by years at company**

**Attrition by Job Role**


# HR ANALYTICS DASHBOARD

Count OF Employee  
**50**

Attrition  
**4**

Attrition Rate  
**8.00%**

Human Resources

Research & Developme...

Sales

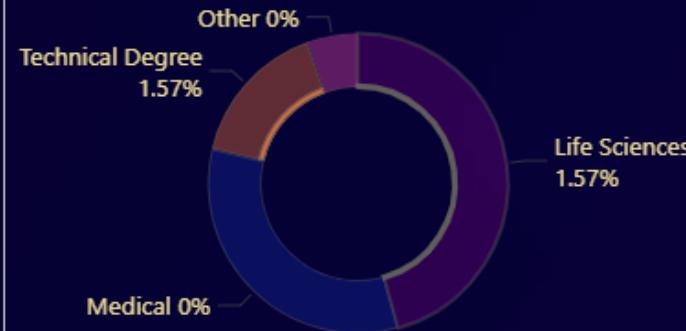
Research & Development

Avg Age  
**35**

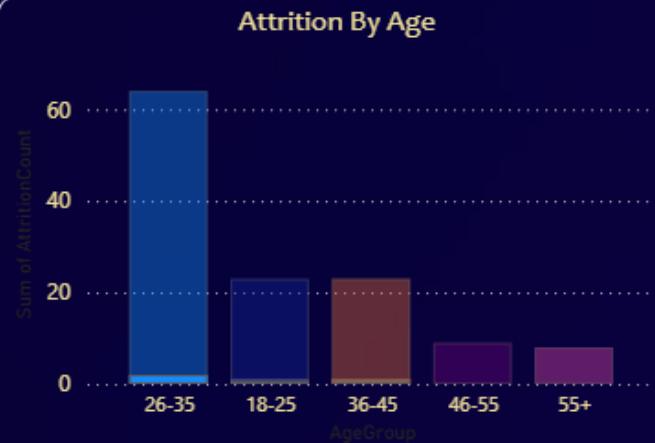
Avg Years  
**5.4K**

Working Years  
**6.0**

Attrition By Education



Attrition By Age

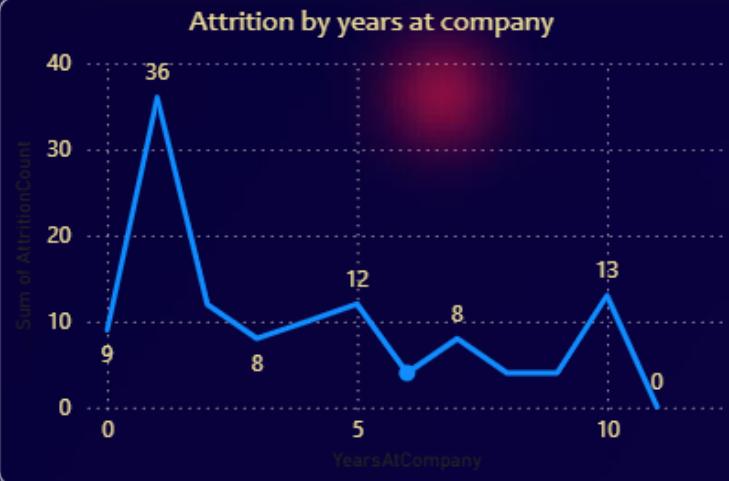


JobRole	1	2	3	4	Total
Research Scientist	1	0	2	0	3
Research Director			0		0
Manufacturing Director	0	0	0		0
Manager			0		0
Laboratory Technician	0	0	1		1
Healthcare Representative	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>4</b>

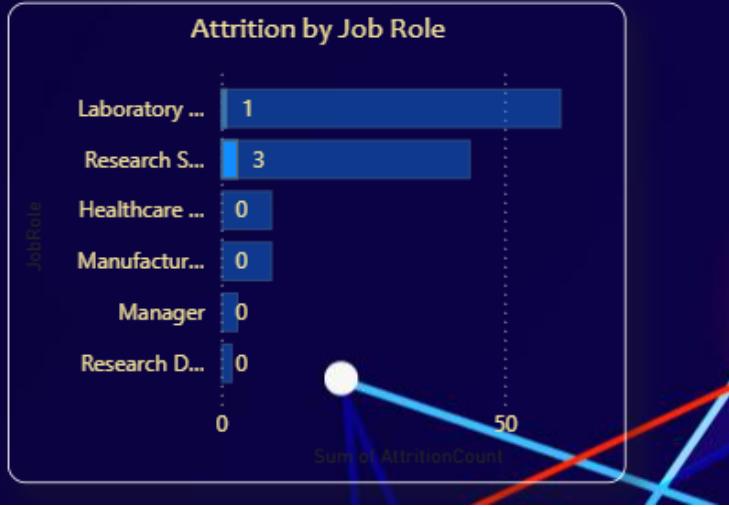
Attrition by Salary slab



Attrition by years at company



Attrition by Job Role



# CONCLUSION:

The HR Recruitment Analysis Dashboard provides an effective solution for analyzing and visualizing recruitment data using Power BI. By transforming raw HR data into interactive dashboards, the system enables HR professionals to monitor hiring trends, evaluate recruitment performance, and identify areas for improvement. The project enhances transparency, supports data-driven decision-making, and helps organizations improve recruitment efficiency and workforce planning.

# FUTURE SCOPE:

- The HR Recruitment Analysis Dashboard can be further enhanced by integrating additional HR data sources such as employee performance records, payroll data, and training information to provide deeper workforce insights. Real-time data integration from HR management systems can improve data accuracy and dashboard responsiveness.
- Advanced analytics and machine learning techniques can be incorporated to predict hiring needs, employee attrition, and recruitment timelines. The system can also be expanded to support multi-location or region-wise recruitment analysis for large organizations.
- Future enhancements may include automation of data refresh, role-based access control, cloud deployment using Power BI Service, and integration with AI-driven HR tools to support strategic workforce planning and decision-making.

# REFERENCES:

List and cite relevant sources, research papers, and articles that were instrumental in developing the proposed solution. This could include academic papers on bike demand prediction, machine learning algorithms, and best practices in data preprocessing and model evaluation.

GitHub Link: <https://github.com/Ritikmehta080905/MS-ELEVATE-POWERBI-PROJECT>

# Thank You