Zagdu Singh Charitable Trust's (Regd.)

THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY

Autonomous College Affiliated to University of Mumbai
Approved by All India Council for Technical Education(AICTE) and Government of Maharashtra(GoM)

Conferred Autonomous Status by University Grants Commission (UGC) for 10 years w.e.f. A.Y 2019-20
Amongst Top 200 Colleges in the Country, Ranked 193ʳᵈ in NIRF India Ranking 2019 in Engineering College category
• ISO 9001:2015 Certified • Programmes Accredited by National Board of Accreditation (NBA), New Delhi
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Estd. in 2001

PRACTICAL 2

HR - Dashboard Analysis

Aim: To design and develop an interactive HR Analytics Dashboard in Tableau that provides comprehensive insights into employee demographics, performance, and workforce trends to support data-driven decision-making.

Intro:
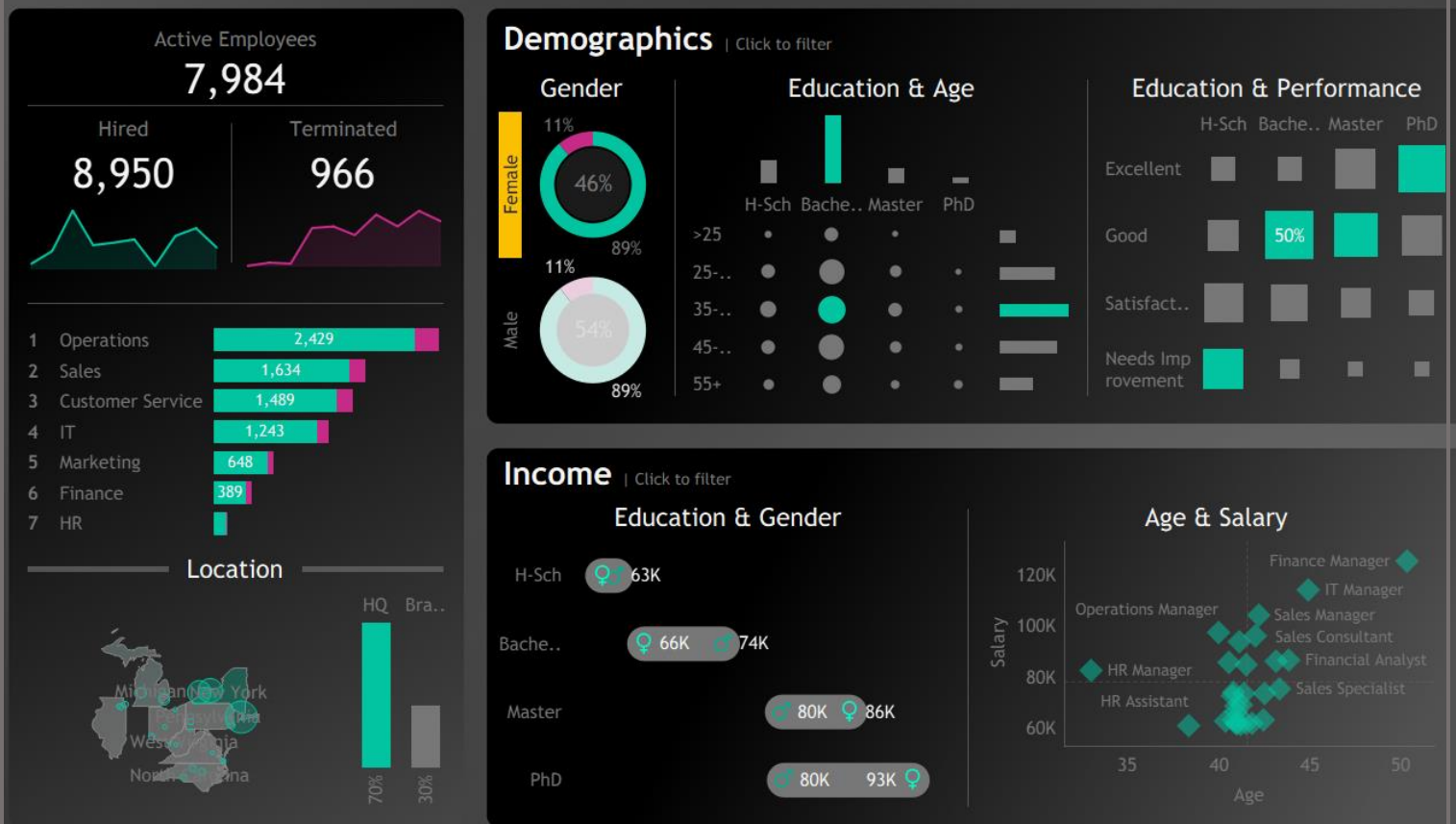
The HR Analytics Dashboard provides a comprehensive overview of an organization's workforce, enabling quick and effective analysis of employee demographics, performance, and employment trends. The dashboard visualizes data for a mid-sized company, focusing on key aspects such as employee distribution by department, gender, age, education level, and location, along with insights into hiring and attrition patterns. It helps HR professionals identify trends, track workforce diversity, and make data-driven decisions related to recruitment, retention, and workforce planning.

Data Source:

The dataset used for this project is inspired by the Data with Baraa HR Dashboard project and has been adapted for academic and analytical purposes. It contains 8950 employee records with 20 fields, covering detailed information such as employee ID, name, gender, age, education, department, job role, salary, hire date, termination date, and performance rating.

Step 1: Load and Open the Data
- Imported the HR dataset into Tableau from a CSV file.
- Verified all fields and data types (numeric, date, string) were correctly recognized.
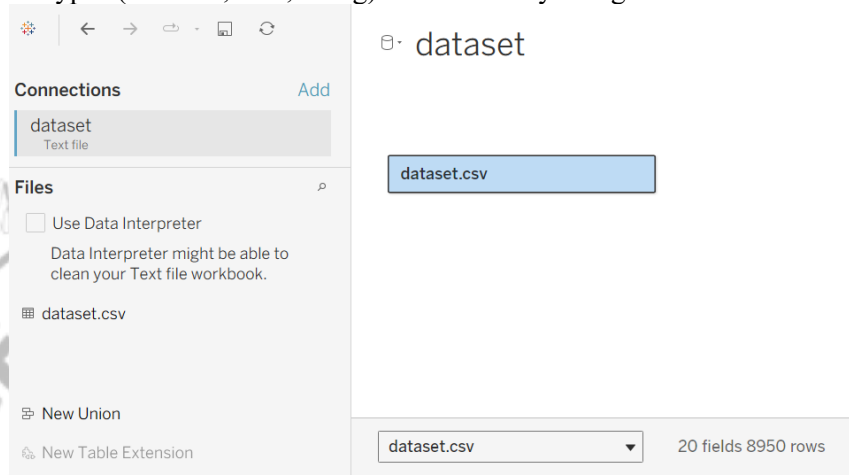

Summary View

Step 2: Hired employees, Active employees, Terminated employees
- Created three KPI sheets to display total **Hired**, **Active**, and **Terminated** employees.
- Used calculated fields to differentiate between active and terminated employees based on termination date.
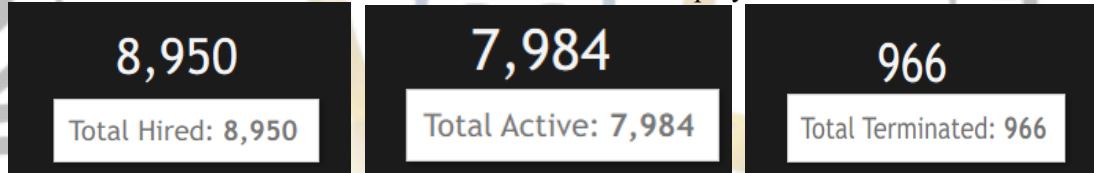
Step 3: Visualization of total number of hired and terminated employees over the years.
- Created two line area charts to visualize yearly trends in employee hiring and termination.
- Used *Hire Date* and *Termination Date* fields to plot the total count of employees per year.
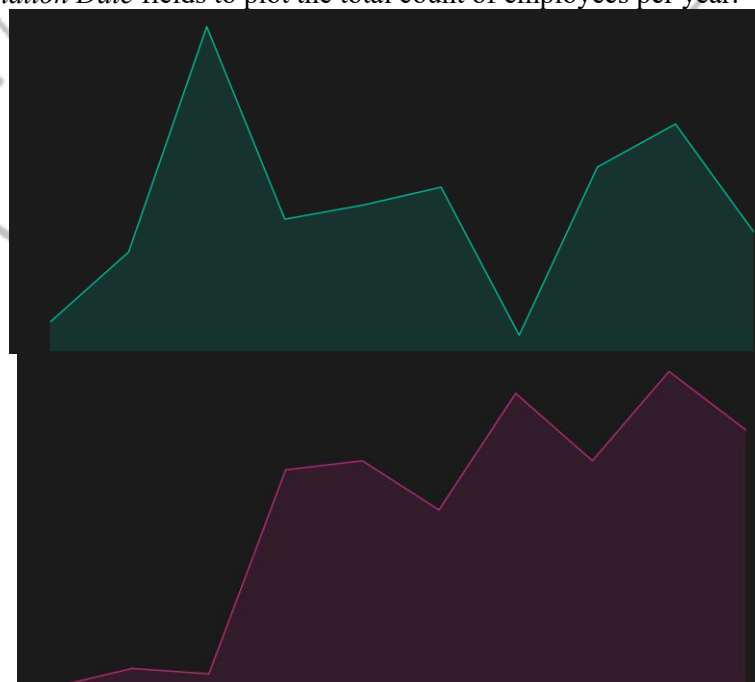
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Step 4: Breakdown of total employees by department and job titles.
- Created a bar chart showing the total number of employees in each department.
- Operations has the highest count, while HR has the least, showing workforce distribution.
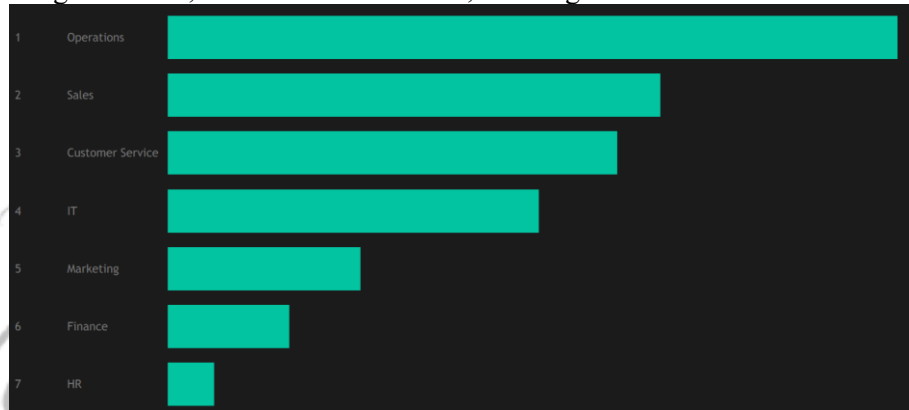
Step 5: Comparision of employees between Headquarters and branches.
- Created a bar chart comparing the number of employees at Headquarters and Branches.
- The chart shows that the Headquarters has a significantly higher number of employees than the Branches.

Step 6: Distribution of employees by city and state.
- Created a filled map showing employee distribution across different cities and states.
- The map highlights that most employees are concentrated in **New York**, followed by other states like **Pennsylvania** and **Illinois**.

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Demographics

Step 7: Gender ration in the company.
- Created a donut chart showing the gender ratio within the company.
- The chart indicates that **54%** of employees are **male** and **46%** are **female**, showing a fairly balanced workforce.
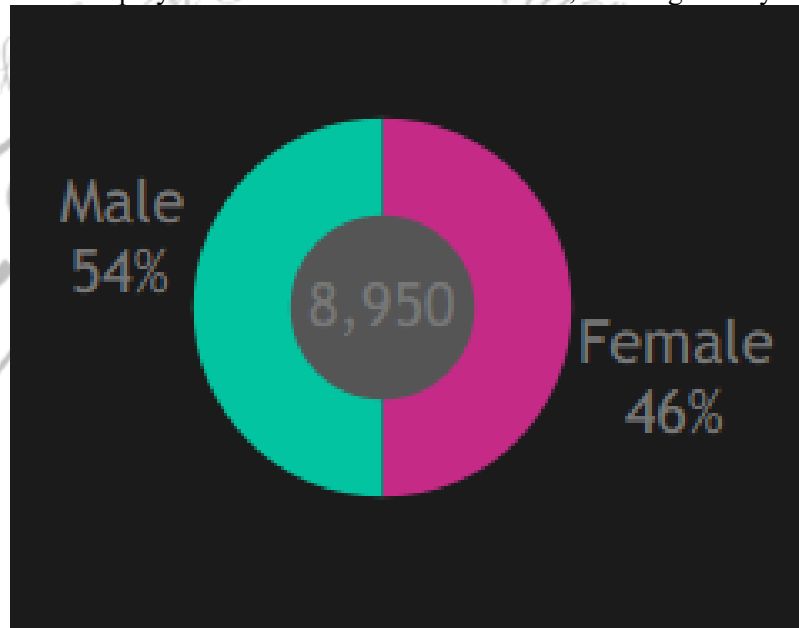
Step 8: Distribution of employees across age groups and education levels.
- Created a bubble chart showing employee distribution across different age groups and education levels.
- Most employees hold a **Bachelor's degree** and fall within the **25–44 age range**, indicating a mid-career, well-qualified workforce.
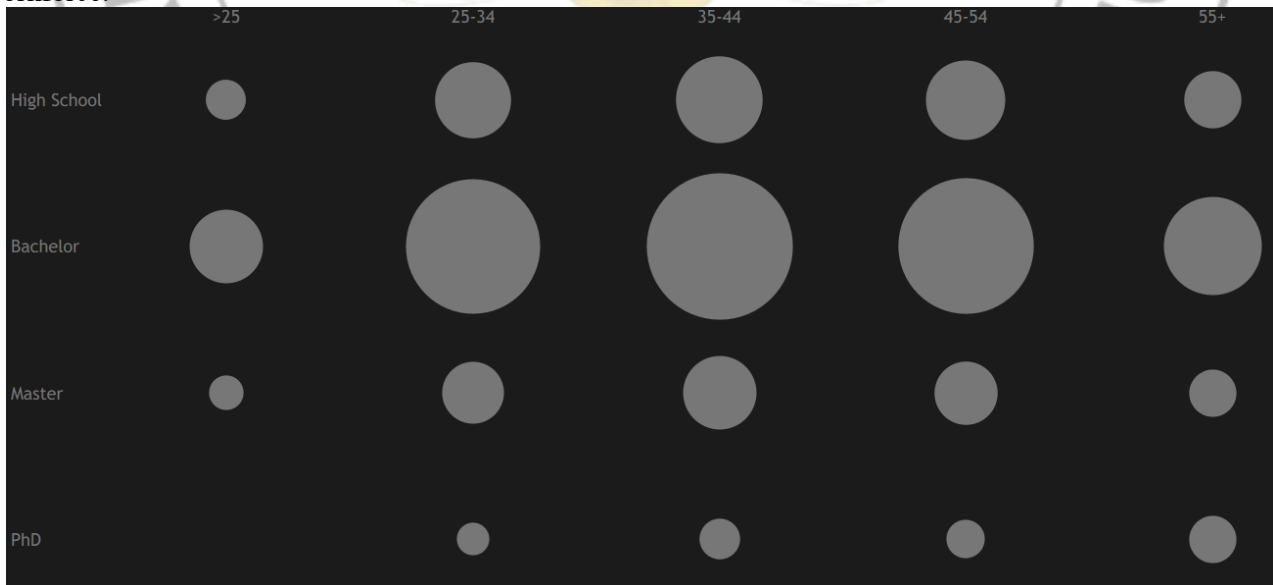
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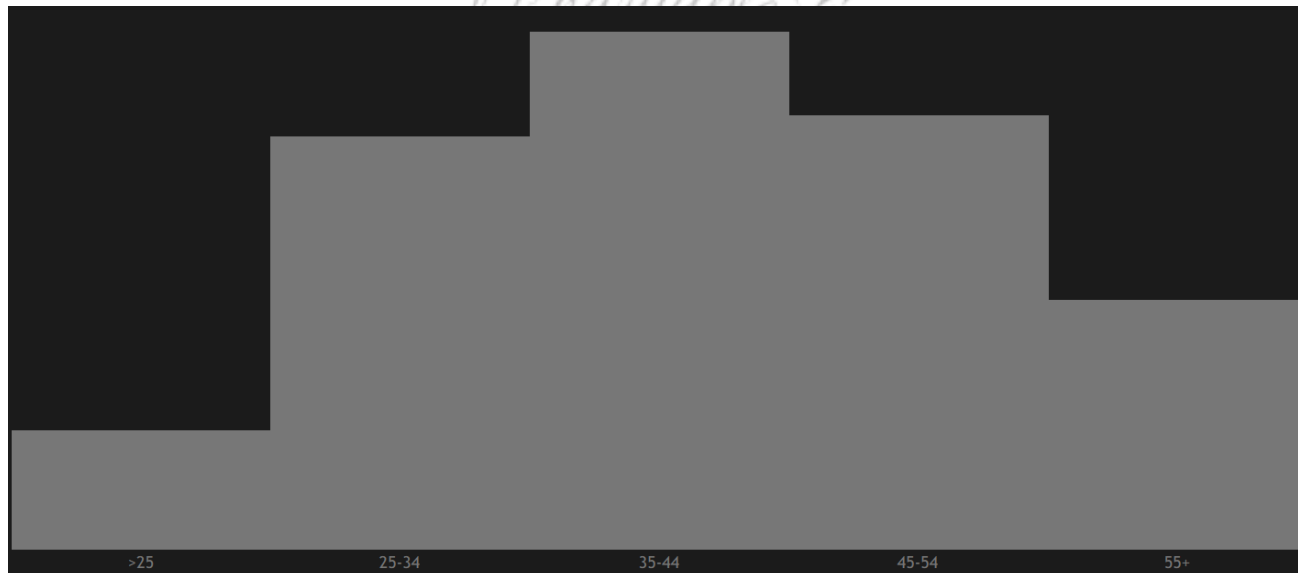*Conferred Autonomous Status by University Grants Commission (UGC) for 10 years w.e.f. A.Y 2019-20*
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Step 9: Employees within each age group.
- Created an area chart to show the number of employees in each age group.
- The **35–44** age group has the highest number of employees, followed by **25–34**, indicating a predominantly mid-age workforce.

Step 10: Employees within each education level.
- Created an area chart to display the number of employees across different education levels.
- The **Bachelor's degree** category has the highest number of employees, followed by **High School**, showing that most employees hold undergraduate qualifications.

Step 11: Correlation between employee's education backgrounds and performance rating.

- Created a bubble chart showing the relationship between education level and performance rating.
- Employees with **Master's** and **PhD** degrees tend to have higher **Excellent** and **Good** ratings, indicating a positive link between education and performance.

Income

Step 13: Compare salaries across different education levels for both genders.

- Created a chart comparing male and female salaries across different education levels.
- Salaries increase with higher education, and **PhD holders** earn the most; **males** generally have slightly higher average salaries than **females**.

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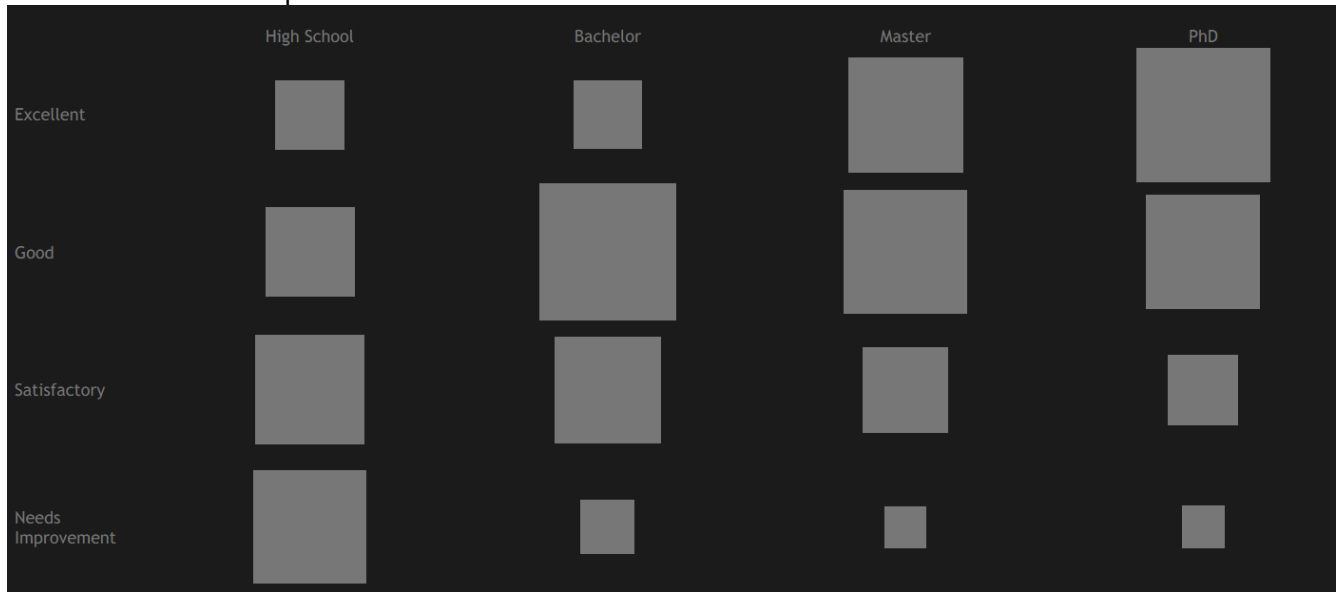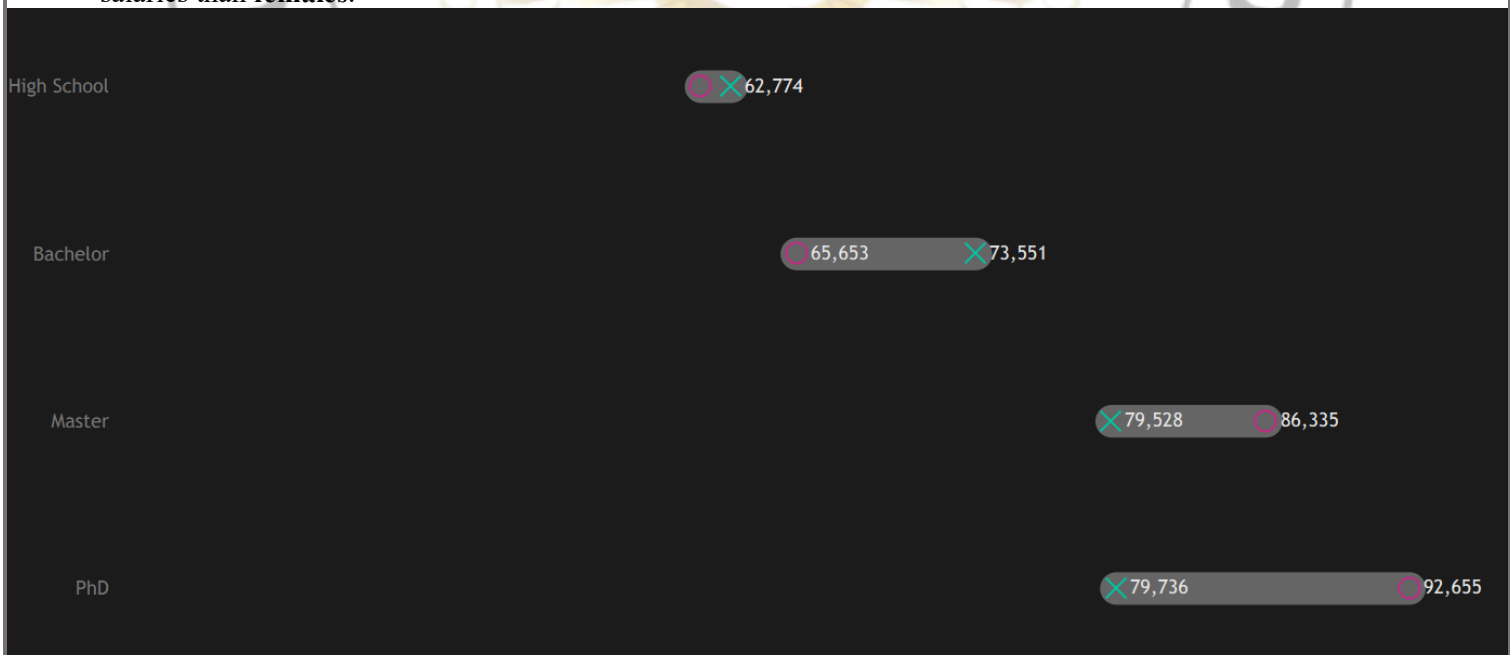*Conferred Autonomous Status by University Grants Commission (UGC) for 10 years w.e.f. A.Y 2019-20*
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Step 14: Age correlate with the salary for employees in each department.
- Created a **scatter plot** showing how **average age** correlates with **average salary** by department.
- Clear trend: **older employees tend to earn higher salaries**, likely due to experience and seniority.
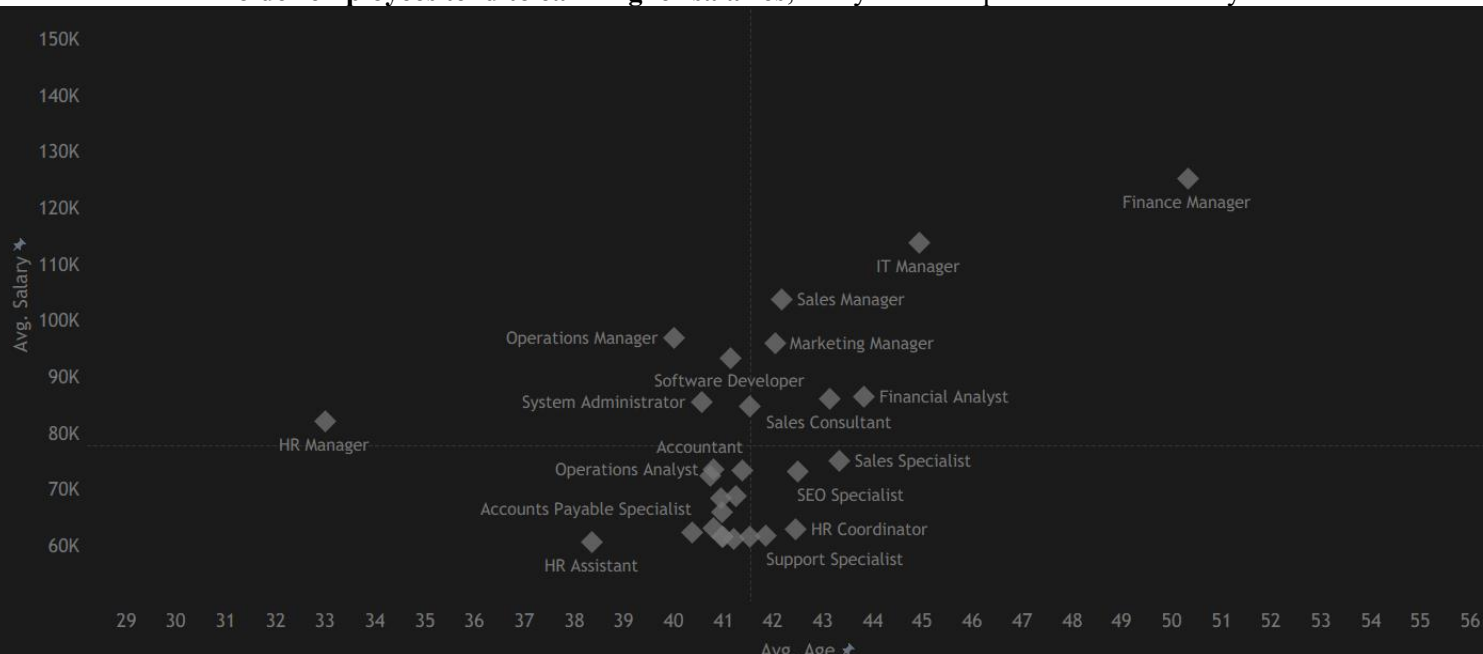
Conclusion:

The HR Analytics Dashboard effectively consolidates key employee data into a single, interactive visualization, enabling a clear understanding of workforce trends and organizational structure. Through analysis of hiring and termination patterns, departmental distribution, and location-based comparisons, the dashboard provides valuable insights into employee demographics and performance. It helps HR teams identify growth areas, monitor attrition, and maintain workforce balance across departments and locations. Overall, this dashboard serves as a powerful decision-support tool that promotes data-driven HR management and strategic workforce planning.

For Faculty Use

Correction Parameters	Formative Assessment [40%]	Timely completion of Practical [40%]	Attendance / Learning Attitude [20%]	
Marks Obtained				