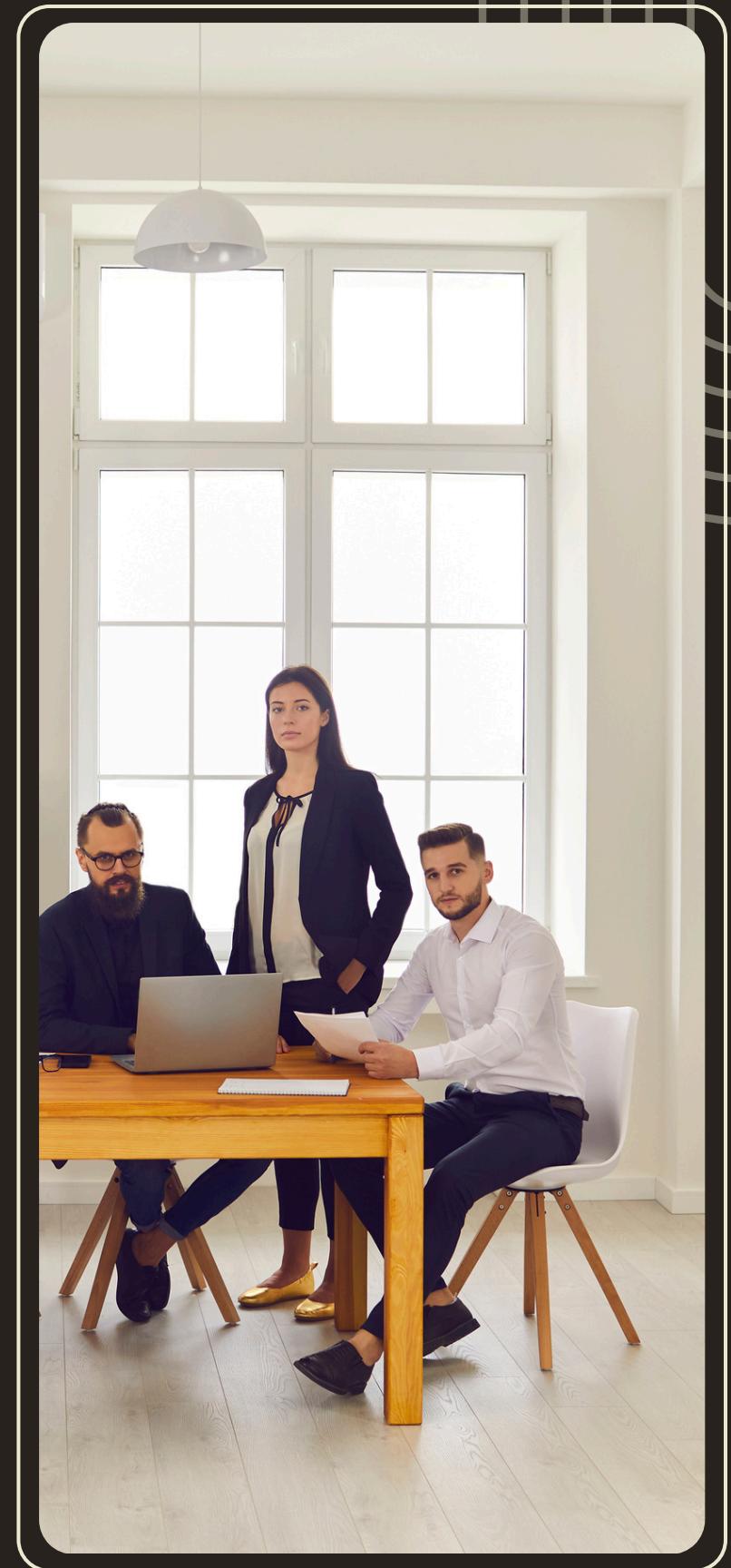
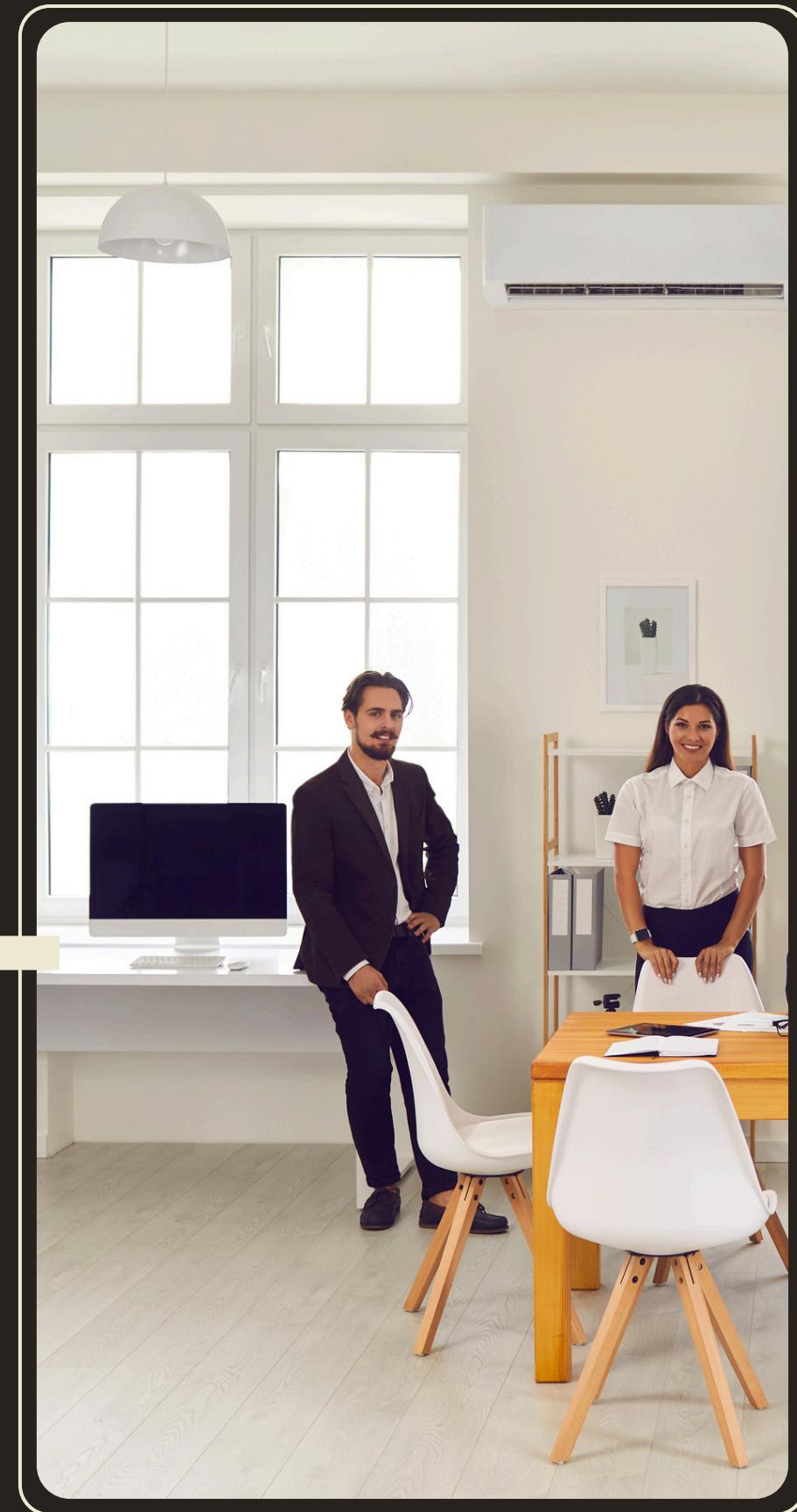


# SQL HUMAN RESOURCE ANALYTICAL PROJECTS



# INTRODUCTION

In today's competitive business environment, human resources (HR) plays a critical role in organizational success. Companies are increasingly relying on data-driven insights to understand their workforce, improve employee retention, enhance diversity, and optimize recruitment strategies. This HR Analytics project was designed to transform raw HR data into meaningful, actionable insights using SQL for data preparation and Power BI for interactive dashboard visualization.



# 1. What is the gender breakdown of employee in the company?

```
SELECT * FROM project_hr.`human resources`  
SELECT gender, COUNT(*) as count FROM project_hr.`human resources`  
WHERE termdate IS NULL  
group by gender;
```

| gender         | count |
|----------------|-------|
| Male           | 9328  |
| Female         | 8455  |
| Non-Conforming | 502   |

## 2. What is the race breakdown in the company?

```
SELECT race, COUNT(*) as count FROM project_hr.`human resources`  
WHERE termdate IS NULL  
group by race;
```

| race                                      | count |
|---|-------|
| Hispanic or Latino                        | 2074  |
| White                                     | 5214  |
| Black or African American                 | 2983  |
| Asian                                     | 2936  |
| Two or More Races                         | 2989  |
| American Indian or Alaska Native          | 1098  |
| Native Hawaiian or Other Pacific Islander | 991   |

### 3. What is the age distribution in the company?

```
SELECT
```

```
CASE
```

```
    WHEN age>=18 AND age<=24 THEN '18-24'  
    WHEN age>=25 AND age<=34 THEN '25-34'  
    WHEN age>=35 AND age<=44 THEN '35-44'  
    WHEN age>=45 AND age<=54 THEN '45-54'  
    WHEN age>=55 AND age<=64 THEN '55-64'  
    ELSE '65+'  
END AS age_group,  
COUNT(*) as count  
FROM project_hr.`human resources`  
WHERE termdate IS NULL  
GROUP BY age_group  
ORDER BY age_group;
```

| age_group | count |
|-----------|-------|
| 18-24     | 1218  |
| 25-34     | 4874  |
| 35-44     | 5069  |
| 45-54     | 4853  |
| 55-64     | 2271  |

#### 4. How many employees work at HQ vs Remote

```
SELECT location, COUNT(*) as count  
FROM project_hr.`human resources`  
WHERE terminate IS NULL  
GROUP BY location;
```

| location     | count |
|--------------|-------|
| Headquarters | 13710 |
| Remote       | 4575  |

## 5. What is the average length of employment who have been terminate.

```
SELECT ROUND(AVG(YEAR(termdate) - YEAR(hire_date)), 0) AS length_of_emp  
FROM project_hr.`human resources`  
WHERE termdate IS NOT NULL AND termdate <= CURDATE();
```

| length_of_emp |
|---------------|
| 8             |

## 6. How does the gender distribution vary across department and job title.

```
SELECT department, jobtitle, gender, COUNT(*) AS count
FROM project_hr.`human resources`
WHERE termdate IS NOT NULL
group by department, jobtitle, gender
order by department, jobtitle, gender;
```

```
SELECT department, gender, COUNT(*) AS count
FROM project_hr.`human resources`
WHERE termdate IS NOT NULL
group by department, gender
order by department, gender;
```

| department | jobtitle       | gender         | count |
|------------|----------------|----------------|-------|
| Accounting | Accountant I   | Female         | 4     |
|            | Accountant I   | Male           | 7     |
|            | Accountant I   | Non-Conforming | 3     |
| Accounting | Accountant II  | Female         | 11    |
|            | Accountant II  | Male           | 7     |
|            | Accountant III | Female         | 8     |
| Accounting | Accountant III | Male           | 4     |

| department           | gender         | count |
|----------------------|----------------|-------|
| Accounting           | Female         | 297   |
| Accounting           | Male           | 274   |
| Accounting           | Non-Conforming | 15    |
| Auditing             | Female         | 4     |
| Auditing             | Male           | 8     |
| Business Development | Female         | 137   |
| Business Development | Male           | 131   |

## 7. What is the distribution of jobtitle across the company.

```
SELECT jobtitle, COUNT(*) AS count  
FROM project_hr.`human resources`  
WHERE termdate IS NULL  
group by jobtitle;
```

| jobtitle                   | count |
|----------------------------|-------|
| Programmer Analyst I       | 82    |
| Business Analyst           | 574   |
| Solutions Engineer Manager | 172   |
| Service Tech               | 264   |
| Developer III              | 63    |
| Quality Engineer           | 53    |
| Developer I                | 73    |
| ....                       | --    |

## 8. Which department has a higher turnover/termination rate.

```
SELECT department,
       COUNT(*) as total_count,
       COUNT( CASE
                  WHEN termdate IS NOT NULL AND termdate <= curdate() THEN 1
              END) as terminated_count,
       ROUND((COUNT( CASE
                  WHEN termdate IS NOT NULL AND termdate <= curdate() THEN 1
              END)/COUNT(*))*100,2) AS termination_rate
  FROM project_hr.`human resources`
 GROUP BY department
 ORDER BY termination_rate DESC;
```

| department               | total_count | terminated_count | termination_rate |
|--------------------------|-------------|------------------|------------------|
| Auditing                 | 52          | 9                | 17.31            |
| Legal                    | 311         | 47               | 15.11            |
| Training                 | 1692        | 217              | 12.83            |
| Human Resources          | 1807        | 224              | 12.40            |
| Engineering              | 6686        | 823              | 12.31            |
| Research and Development | 1084        | 133              | 12.27            |
| Support                  | 954         | 117              | 12.26            |

## 9. What is the distribution of employees location state.

```
SELECT location_state, COUNT(*) AS count  
FROM project_hr.`human resources`  
WHERE termdate IS NULL  
GROUP BY location_state;
```

```
SELECT location_city, COUNT(*) AS count  
FROM project_hr.`human resources`  
WHERE termdate IS NULL  
GROUP BY location_city;
```

| location_state | count |
|----------------|-------|
| Ohio           | 14788 |
| Michigan       | 569   |
| Pennsylvania   | 930   |
| Wisconsin      | 321   |
| Illinois       | 730   |
| Indiana        | 572   |
| Kentucky       | 375   |

| location_city | count |
|---------------|-------|
| Cleveland     | 13841 |
| Flint         | 48    |
| Pittsburgh    | 238   |
| Madison       | 115   |
| Canton        | 74    |
| Youngstown    | 38    |
| Scranton      | 30    |

## 10. How has the company's employee count changed over time based on hire and termination date.

```
SELECT year, hires, terminations, hires - terminations as net_change,  
(terminations/hires)*100 as change_percent  
  
FROM(  
    SELECT year(hire_date) as year,  
    COUNT(*) as hires,  
    SUM(CASE  
        WHEN termdate IS NOT NULL AND termdate <= curdate() THEN 1  
        END) as terminations  
    FROM project_hr.`human resources`  
    GROUP BY year(hire_date)) AS subquery  
    ORDER BY year;
```

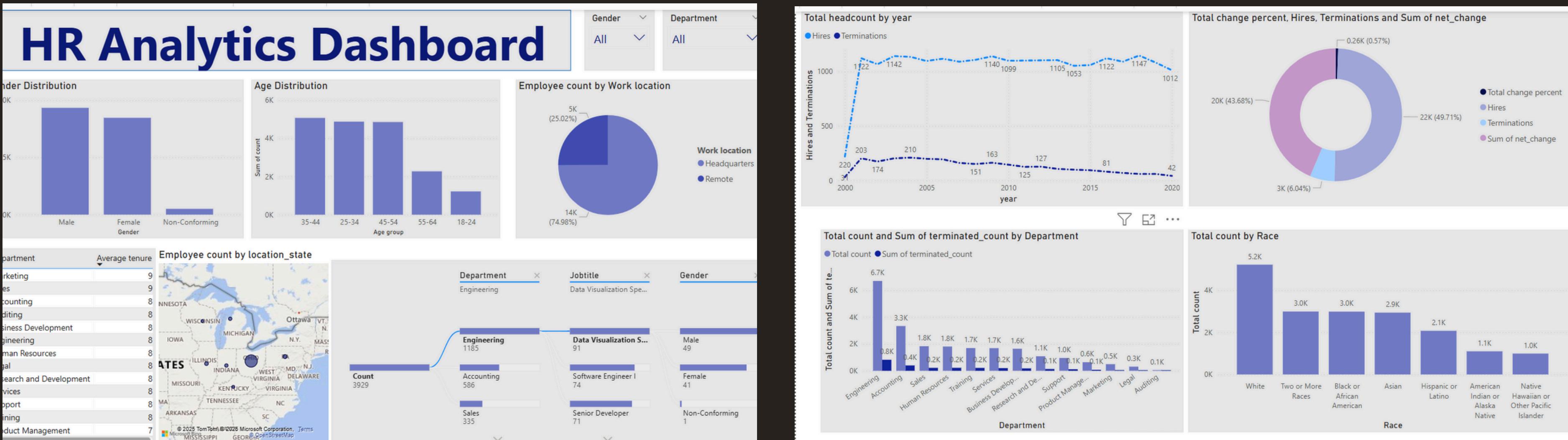
| year | hires | terminations | net_change | change_percent |
|------|-------|--------------|------------|----------------|
| 2000 | 220   | 31           | 189        | 14.0909        |
| 2001 | 1122  | 203          | 919        | 18.0927        |
| 2002 | 1067  | 174          | 893        | 16.3074        |
| 2003 | 1142  | 203          | 939        | 17.7758        |
| 2004 | 1135  | 210          | 925        | 18.5022        |
| 2005 | 1097  | 199          | 898        | 18.1404        |
| 2006 | 1118  | 194          | 924        | 17.3524        |

## 11. What is the tenure distribution in each department?

```
SELECT department ,round(avg(datediff(termdate, hire_date)/365),0) as avg_tenure  
FROM project_hr.`human resources`  
WHERE termdate IS NOT NULL AND termdate <= curdate()  
GROUP BY department;
```

| department           | avg_tenure |
|----------------------|------------|
| Engineering          | 8          |
| Services             | 8          |
| Human Resources      | 8          |
| Business Development | 8          |
| Sales                | 9          |
| Support              | 8          |
| Auditing             | 8          |

# DASHBOARD



# Thank You

