

# EMPLOYEE DATASET PROJECT



# INTRODUCTION: OVERALL PROJECT OBJECTIVE

This dataset contains information about employees in a company, including their educational backgrounds, work history, demographics, and employment-related factors. It has been anonymized to protect privacy while still providing valuable insights into the workforce.



# OBJECTIVES

The objective of this project is to analyze the anonymized employee dataset using SQL to gain insights into workforce demographics, educational backgrounds, employment history, and other work-related factors. By querying and interpreting the data, this project aims to identify trends, patterns, and relationships that can help improve decision-making in human resources, such as optimizing employee retention, understanding the impact of education on job performance, and analyzing the distribution of employees across different cities and roles. The project demonstrates proficiency in SQL for data analysis and management, contributing to portfolio enhancement.

# METHODOLOGY: PROCEDURES AND TOOLS

- **Data Understanding and Exploration:**
  - Explored the dataset to understand key attributes (education, experience, city, etc.).
  - Ran initial queries to assess data distribution and check for inconsistencies.
  - Tools: SQL, MySQL/PostgreSQL.
- **Data Cleaning and Preprocessing:**
  - Checked for missing or invalid entries and ensured correct data types.
  - Removed duplicates and inconsistencies.
  - Tools: SQL for filtering, updating, and cleaning.



# **PROJECT QUESTIONS AND SOLUTIONS**

## **Q1: -RETRIEVE ALL DETAILS OF EMPLOYEES WHO ARE FROM PUNE**

```
SELECT
  *
FROM
  employee
WHERE
  city = 'Pune';
```

	Education	JoiningYear	City	PaymentTier	Age	Gender	EverBenched	ExperienceInCurrentDomain	LeaveOrNot
	Bachelors	2013	Pune	1	28	Female	No	3	1
	Masters	2017	Pune	3	24	Male	Yes	2	1
	Bachelors	2016	Pune	3	23	Male	No	1	0
	Bachelors	2016	Pune	3	34	Male	No	3	0
	Bachelors	2018	Pune	3	32	Male	Yes	5	1
	Bachelors	2014	Pune	3	34	Male	No	4	0
	Bachelors	2015	Pune	2	30	Female	No	0	1
	Bachelors	2013	Pune	2	31	Female	No	2	1
	Bachelors	2017	Pune	2	37	Female	No	0	1
	Bachelors	2017	Pune	2	29	Female	No	2	1
	Bachelors	2014	Pune	2	33	Male	Yes	4	0

## Q2: -FIND THE NAMES OF EMPLOYEES WHO HAVE A BACHELOR'S DEGREE AND ARE NOT BENCHED

```
SELECT
*
FROM
employee
WHERE
Education = 'Bachelors'
AND EverBenched = 'No' ;
```

	Education	JoiningYear	City	PaymentTier	Age	Gender	EverBenched	Experi...	LeaveOrNot
	Bachelors	2017	Bangalore	3	34	Male	No	0	0
	Bachelors	2016	Bangalore	3	22	Male	No	0	0
	Bachelors	2015	New Delhi	3	38	Male	No	0	0
	Bachelors	2015	Pune	2	30	Female	No	0	1
	Bachelors	2016	New Delhi	2	22	Female	No	0	1
	Bachelors	2012	Bangalore	3	37	Male	No	0	0
	Bachelors	2017	Pune	2	37	Female	No	0	1
	Bachelors	2018	New Delhi	2	34	Female	No	0	1
	Bachelors	2014	Bangalore	3	36	Male	No	0	0
	Bachelors	2016	Bangalore	3	34	Female	No	0	0
	Bachelors	2014	Pune	1	22	Female	No	0	1
	Bachelors	2014	New Delhi	3	28	Male	No	0	0

employee 2

### Q3: -LIST ALL EMPLOYEES SORTED BY AGE IN ASCENDING ORDER

```
SELECT
*
FROM
employee
ORDER BY Age ASC;
```

	Education	JoiningYear	City	PaymentTier	Age	Gender	EverBenchched	Experience...	LeaveOrNot
	Bachelors	2017	Pune	2	22	Male	No	0	0
	Bachelors	2012	Bangalore	3	22	Male	No	0	0
	Bachelors	2017	New Delhi	2	22	Female	No	0	0
	Bachelors	2012	New Delhi	3	22	Female	No	0	0
	Bachelors	2016	Bangalore	3	22	Male	No	0	0
	Bachelors	2014	Bangalore	3	22	Male	No	0	0
	Masters	2013	New Delhi	2	22	Male	Yes	0	1
	Bachelors	2015	Pune	1	22	Female	No	0	1
	Masters	2013	Pune	3	22	Female	Yes	0	1
	Bachelors	2014	Bangalore	3	22	Male	No	0	0

## Q4: -HOW MANY EMPLOYEES ARE THERE FROM NEW DELHI?

```
SELECT
*
FROM
employee
WHERE
City = 'New Delhi';
```

	Education	JoiningYear	City	PaymentTier	Age	Gender	EverBenched	ExperienceInCurrentDom...	LeaveOrNot
	Bachelors	2014	New Delhi	3	38	Female	No	2	0
	Bachelors	2015	New Delhi	3	38	Male	No	0	0
	Masters	2017	New Delhi	2	37	Male	No	2	0
	Bachelors	2016	New Delhi	2	22	Female	No	0	1
	Masters	2017	New Delhi	2	28	Male	No	4	0
	Bachelors	2017	New Delhi	2	36	Male	No	3	0
	Masters	2017	New Delhi	2	30	Female	No	2	0
	PHD	2013	New Delhi	3	25	Male	No	3	0
	Bachelors	2012	New Delhi	3	29	Male	No	3	0
	Bachelors	2018	New Delhi	2	34	Female	No	0	1
	Masters	2017	New Delhi	2	23	Male	No	1	0
	PHD	2012	New Delhi	3	27	Male	No	5	0

## Q5: -HOW MANY EMPLOYEES BELONG TO EACH CITY?

```
SELECT  
    City, COUNT(City) AS no_of_employees  
FROM  
    employee  
GROUP BY 1;
```

	City	no_of_employees
	Bangalore	2228
	Pune	1268
	New Delhi	1157

## Q6: -WHAT IS THE AVERAGE AGE OF EMPLOYEES IN BANGALORE?

```
SELECT  
    City, ROUND(AVG(Age), 0) AS avg_age  
FROM  
    employee  
WHERE  
    City = 'Bangalore';
```

	City	avg_age
	Bangalore	30

## Q7: -FIND THE AVERAGE EXPERIENCE IN THE CURRENT DOMAIN FOR EACH PAYMENT TIER

```
SELECT  
    PaymentTier,  
    ROUND(AVG(ExperienceInCurrentDomain), 0) AS avg_exp  
FROM  
    employee  
GROUP BY 1  
ORDER BY 1;
```

	PaymentTier	avg_exp
	1	3
	2	3
	3	3

## Q8: -COUNT THE NUMBER OF MALE AND FEMALE EMPLOYEES IN THE DATASET

```
SELECT  
    Gender, COUNT(Gender)  
FROM  
    employee  
GROUP BY 1;
```

	Gender	count(Gend...
	Male	2778
	Female	1875

## Q9: -RETRIEVE THE DETAILS OF EMPLOYEES WHO HAVE EVER BEEN BENCHED AND ARE OLDER THAN 30

```
SELECT
*
FROM
employee
WHERE
EverBenched = 'Yes' AND Age > 30;
```

	Education	JoiningYear	City	PaymentTier	Age	Gender	EverBenched	Experience...	LeaveOrNot
	Bachelors	2018	Pune	3	32	Male	Yes	5	1
	Bachelors	2014	Bangalore	3	31	Female	Yes	5	0
	Bachelors	2017	New Delhi	3	31	Female	Yes	5	0
	Bachelors	2014	Pune	3	31	Male	Yes	1	0
	Bachelors	2018	Bangalore	3	35	Female	Yes	5	1
	Bachelors	2015	Bangalore	3	37	Male	Yes	3	0
	Bachelors	2017	Bangalore	3	41	Male	Yes	3	0
	Bachelors	2018	Bangalore	3	32	Female	Yes	2	1
	Bachelors	2018	Bangalore	3	37	Male	Yes	5	1
	Bachelors	2018	Pune	3	40	Male	Yes	3	1
	Bachelors	2014	Bangalore	3	39	Male	Yes	0	0
	Bachelors	2015	Pune	3	35	Male	Yes	5	0

## Q10: -LIST THE CITY WITH THE HIGHEST NUMBER OF EMPLOYEES

```
SELECT  
    City, COUNT(City) AS No_of_Emp  
FROM  
    employee  
GROUP BY 1  
ORDER BY 2 DESC  
LIMIT 1;
```

	City	No_of_Emp
	Bangalore	2228

## Q11: -FIND THE MAXIMUM AND MINIMUM AGE OF EMPLOYEES FOR EACH EDUCATION LEVEL

```
SELECT  
    Education, MAX(Age) AS max_age, MIN(Age) AS min_age  
FROM  
    employee  
GROUP BY 1;
```

	Education	max_age	min_age
	Bachelors	41	22
	Masters	41	22
	PHD	41	22

## Q12: -RETRIEVE THE DETAILS OF EMPLOYEES WHO JOINED AFTER 2015 AND HAVE A PAYMENT TIER OF 3

```
SELECT
*
FROM
employee
WHERE
JoiningYear > 2015 AND PaymentTier = 3
ORDER BY JoiningYear;
```

	Education	JoiningYear	City	PaymentTier	Age	Gender	EverBenched	Experience...	LeaveOrNot
	Masters	2016	Bangalore	3	27	Male	No	5	1
	Bachelors	2016	Bangalore	3	22	Male	No	0	0
	Bachelors	2016	Bangalore	3	34	Female	No	2	1
	Bachelors	2016	Pune	3	23	Male	No	1	0
	Bachelors	2016	Pune	3	34	Male	No	3	0
	Bachelors	2016	Bangalore	3	39	Male	No	2	0
	Bachelors	2016	Bangalore	3	37	Male	No	2	0
	Bachelors	2016	Bangalore	3	40	Male	No	5	0
	Bachelors	2016	Bangalore	3	34	Female	No	0	0
	Bachelors	2016	Bangalore	3	38	Male	No	2	0
	Bachelors	2016	Bangalore	3	34	Male	No	4	0

# Q13: -CALCULATE THE PERCENTAGE OF EMPLOYEES WHO HAVE EVER BEEN BENCHED BY CITY

```
SELECT
    City, (benched / total_emp) * 100 AS benched_percentage
FROM
    (SELECT
        City,
        COUNT(CASE
            WHEN EverBenched = 'Yes' THEN 1
        END) AS benched,
        COUNT(*) AS total_emp
    FROM
        employee
    GROUP BY 1) AS a;
```

	City	benched_percentage
	Bangalore	10.8618
	Pune	10.6467
	New Delhi	8.7295

## Q14: -IDENTIFY THE CITY WITH THE HIGHEST AVERAGE AGE OF EMPLOYEES

```
SELECT  
    City, ROUND(AVG(Age), 0) AS avg_age  
FROM  
    employee  
GROUP BY 1  
ORDER BY 2 DESC  
LIMIT 1;
```

	City	avg_age
	Bangalore	30

# Q15: -LIST EMPLOYEES WHO HAVE MORE THAN 2 YEARS OF EXPERIENCE IN THEIR CURRENT DOMAIN AND ARE FEMALE

```
SELECT
*
FROM
employee
WHERE
    ExperienceInCurrentDomain > 2
    AND Gender = 'Female';
```

	Education	JoiningYear	City	PaymentTier	Age	Gender	EverBenchched	ExperienceInCurrentDomain	LeaveOrNot
	Bachelors	2013	Pune	1	28	Female	No	3	1
	Bachelors	2014	Bangalore	1	30	Female	No	3	0
	Bachelors	2015	Pune	2	26	Female	No	4	1
	Bachelors	2014	Bangalore	3	31	Female	Yes	5	0
	Bachelors	2017	New Delhi	3	31	Female	Yes	5	0
	Bachelors	2014	Pune	3	25	Female	No	3	0
	Masters	2017	New Delhi	2	25	Female	No	3	1
	Bachelors	2017	Bangalore	3	25	Female	No	3	0
	Bachelors	2015	Bangalore	3	27	Female	Yes	5	1
	Bachelors	2017	Pune	2	27	Female	No	5	1

**THANK  
YOU VERY  
MUCH!**