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|  | | HR Analytics Dashboard | | | | |  | |
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|  | | | | Shehroz Umer 24L- 7375  MSBA 1(A) |  | | | |
|  | | | | 8th December 2024—Database System—Sir Naveed |  | | | |
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|  | | OVERVIEW | | | | | | |  |
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|  | |  |  | This report provides a comprehensive overview of a database project focused on utilizing SQL for effective data management and analysis. The project involves designing and implementing queries to interact with a structured database system, covering tasks such as data retrieval, modification, and analysis. Each query is tailored to address specific use cases and demonstrates the system's capability to handle real-world data scenarios. The report is structured to present all SQL queries developed during the project alongside their corresponding results, offering a clear understanding of the database's functionality, performance, and analytical potential. | | |  |  |  |
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**Dashboard KPI’s Queries**

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| **1: Total Employees** – Current total headcount. | |
| **Query** | **Result** |
| SELECT COUNT(\*) as [Total Employees] FROM HR\_Data |  |

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| **2: Attrition Count** – Total number of employees who have left. | |
| **Query** | **Result** |
| SELECT COUNT(\*) as [Employees Left] FROM HR\_Data WHERE Attrition = 'Yes' |  |

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| **3: Attrition Rate** – Percentage of employees who have left the organization. | |
| **Query** | **Result** |
| SELECT (COUNT(CASE WHEN Attrition = 'Yes' THEN 1 END) \* 100.0) / COUNT(\*) AS Attrition\_Rate FROM HR\_Data |  |

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| **4: Active Employees** – Total active employees. | |
| **Query** | **Result** |
| SELECT COUNT(\*) as [Total Active Employees] from HR\_Data WHERE Attrition = 'No' |  |

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| **5: Gender Distribution** – Employee count segmented by gender. | |
| **Query** | **Result** |
| Select Count(\*) as [Total Active Employees] , Gender from HR\_Data  Where Attrition = 'No' Group by Gender |  |

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| **6: Job Role Distribution** – Employee count by job role. | |
| **Query** | **Result** |
| Select Count(\*) as [Total Active Employees] , Job\_Role from HR\_Data  Where Attrition = 'No' Group by Job\_Role |  |

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| **7: Educational Background** – Employee count by field of education. | |
| **Query** | **Result** |
| Select Count(\*) as [Total Active Employees] , Education from HR\_Data  Where Attrition = 'No' Group by Education |  |

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| **8: Average Age** – Mean age of employees. | |
| **Query** | **Result** |
| Select avg(Age) as [Average Age] from HR\_Data where Attrition = 'No' |  |

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| **9: Work-Life Balance Score** – Average work-life balance rating. | |
| **Query** | **Result** |
| select AVG(Work\_Life\_Balance) as [Average Work Life Balance Score] from HR\_Data where Attrition = 'No' |  |

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| **10: Average Monthly Salary** – Mean monthly income of employees. | |
| **Query** | **Result** |
| select round(avg(Monthly\_Income), 2) as [Average Monthly Income] from HR\_Data where Attrition = 'No' |  |

**Dashboard Feature Queries**

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| **2. Employee Distribution by Age Group** | |
| **Query** | **Result** |
| Select Age as [Age Group], count(\*) as [Total Employees] from HR\_Data where Attrition = 'No'  group by Age  Order by Age desc |  |

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| **3. Turnover Rate by Department** | |
| **Query** | **Result** |
| select count(\*) as [Turn over Rate by Departments], Department from HR\_Data where Attrition = 'Yes'  group by Department Order by count(\*) desc |  |

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| **4. Departmental Employee Distribution** | |
| **Query** | **Result** |
| select count(\*) as [Department wise distribution], Department from HR\_Data where Attrition = 'No'  group by Department order by count(\*) desc |  |

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| **5. Job Involvement by Role** | |
| **Query** | **Result** |
| SELECT  Job\_Role,  SUM(CASE WHEN Job\_Involvement = 1 THEN 1 ELSE 0 END) AS Low,  SUM(CASE WHEN Job\_Involvement = 2 THEN 1 ELSE 0 END) AS Medium,  SUM(CASE WHEN Job\_Involvement = 3 THEN 1 ELSE 0 END) AS High,  SUM(CASE WHEN Job\_Involvement = 4 THEN 1 ELSE 0 END) AS Outstanding  FROM HR\_Data  where Attrition = 'No'  GROUP BY Job\_Role  ORDER BY Job\_Role |  |

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| **6. Satisfaction Ratings for Active Employees** | |
| **Query** | **Result** |
| select round(avg(Job\_Satisfaction),2) as [Average Satisfaction Rating ] from HR\_Data where Attrition = 'No'  . |  |

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| **7. Employee Count by Gender and Marital Status** | |
| **Query** | **Result** |
| Select count(\*) as [Employee Count] , Gender, Marital\_Status from HR\_Data where Attrition = 'No'  group by Gender, Marital\_Status  order by count(\*) desc |  |

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| **8. Work-Life Balance Ratings** | |
| **Query** | **Result** |
| SELECT  Department,  CASE  WHEN Work\_Life\_Balance = 1 THEN 'Low'  WHEN Work\_Life\_Balance = 2 THEN 'Medium'  WHEN Work\_Life\_Balance = 3 THEN 'High'  WHEN Work\_Life\_Balance = 4 THEN 'Outstanding'  END AS Work\_Life\_Balance\_Label,  COUNT(\*) AS Employee\_Count  FROM HR\_Data  where Attrition = 'No'  GROUP BY Department, Work\_Life\_Balance  ORDER BY Department, Work\_Life\_Balance |  |

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| **9. Relationship Satisfaction** | |
| **Query** | **Result** |
| SELECT  Department,  CASE  WHEN Relationship\_Satisfaction = 1 THEN 'Low'  WHEN Relationship\_Satisfaction = 2 THEN 'Medium'  WHEN Relationship\_Satisfaction = 3 THEN 'High'  WHEN Relationship\_Satisfaction = 4 THEN 'Outstanding'  END AS Relationship\_Satisfaction\_Label,  COUNT(\*) AS Employee\_Count  FROM HR\_Data  where Attrition = 'No'  GROUP BY Department, Relationship\_Satisfaction  ORDER BY Department, Relationship\_Satisfaction |  |

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| **10. Job Satisfaction Ratings w.r.t Departments** | |
| **Query** | **Result** |
| SELECT  Department,  CASE  WHEN Job\_Satisfaction = 1 THEN 'Low'  WHEN Job\_Satisfaction = 2 THEN 'Medium'  WHEN Job\_Satisfaction = 3 THEN 'High'  WHEN Job\_Satisfaction = 4 THEN 'Outstanding'  END AS Job\_Satisfaction\_Label,  COUNT(\*) AS Employee\_Count  FROM HR\_Data  where Attrition = 'No'  GROUP BY Job\_Satisfaction, Department  ORDER BY Job\_Satisfaction |  |

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| **11. Education wise Employee Attrition** | |
| **Query** | **Result** |
| select count(\*) as [Attrition Count], Education from HR\_Data  where Attrition = 'Yes'  Group by Education |  |

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| **12: Promotion Rate** | |
| **Query** | **Result** |
| SELECT Round((COUNT(CASE WHEN "Years\_Since\_Last\_Promotion" > 0 THEN 1 END) \* 100.0) / COUNT(\*), 2) AS Promotion\_Rate  FROM HR\_Data where Attrition = 'No' |  |

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| **13. Managerial Tenure (Effectiveness)** | |
| **Query** | **Result** |
| SELECT  Job\_Role,  Round(AVG(Years\_with\_Curr\_Manager), 5) AS Average\_Managerial\_Tenure  FROM HR\_Data  WHERE Job\_Role = 'Manager' and Attrition = 'No'  GROUP BY Job\_Role  ORDER BY Average\_Managerial\_Tenure DESC |  |

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| **14: Overtime Participation by Gender.** | |
| **Query** | **Result** |
| SELECT  Gender,  COUNT(\*) AS Total\_Employees,  SUM(CASE WHEN Over\_Time = 'Yes' THEN 1 ELSE 0 END) AS Overtime\_Participants,  (SUM(CASE WHEN Over\_Time = 'Yes' THEN 1 ELSE 0 END) \* 100.0) / COUNT(\*) AS Overtime\_Participation\_Rate  FROM HR\_Data  where Attrition = 'No'  GROUP BY Gender  ORDER BY Gender; |  |

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| **15. Performance Ratings by Gender** | |
| **Query** | **Result** |
| SELECT  Gender,  AVG(Performance\_Rating) AS Average\_Performance\_Rating,  COUNT(CASE WHEN Performance\_Rating = 3 THEN 1 END) AS Rating\_3\_High,  COUNT(CASE WHEN Performance\_Rating = 4 THEN 1 END) AS Rating\_4\_Outstanding  FROM HR\_Data  where Attrition = 'No'  GROUP BY Gender  ORDER BY Gender |  |