Employee Management and Attendance Tracker

Introduction

This project focuses on building an Employee Management and Attendance Tracker system using Oracle SQL. The goal of this project is to manage employee details, departments, roles, and attendance records in a structured and efficient manner. It helps organizations to maintain accurate data of employees and their attendance patterns, which is essential for payroll and performance evaluation.

Abstract

The Employee Management and Attendance Tracker project is designed to create a relational database system for storing and managing employee information and attendance logs. The system allows for tracking employee work hours, calculating attendance summaries, and identifying patterns such as lateness or absenteeism. It demonstrates the use of schema design, SQL queries, joins, aggregate functions, and data handling in Oracle SQL.

Tools Used

The following tools and technologies were used in this project: - Oracle SQL*Plus for database creation and query execution - SQL (DDL and DML) for schema design, data insertion, and queries - PL/SQL concepts such as joins, grouping, and aggregate functions.

Steps Involved in Building the Project

1. Designed the database schema with four main tables: Departments, Roles, Employees, and Attendance.
2. Defined relationships between tables using primary keys and foreign keys.
3. Inserted sample data into all tables to simulate real-world records.
4. Wrote SQL queries to display employees with their department and role, generate attendance reports, and calculate total working hours per employee.
5. Used aggregate functions (COUNT, SUM) and GROUP BY to prepare monthly attendance summaries.
6. Tested the queries to ensure data consistency and accuracy of results.

Conclusion

The Employee Management and Attendance Tracker project successfully demonstrates how SQL can be used to design and manage a relational database system for HR and payroll applications. By maintaining accurate employee and attendance records, organizations can streamline operations, improve performance analysis, and ensure transparency. This project strengthened skills in Oracle SQL, database design, and query writing, making it a valuable learning experience for real-world applications