Employee Management & Attendance Tracker – Project Report

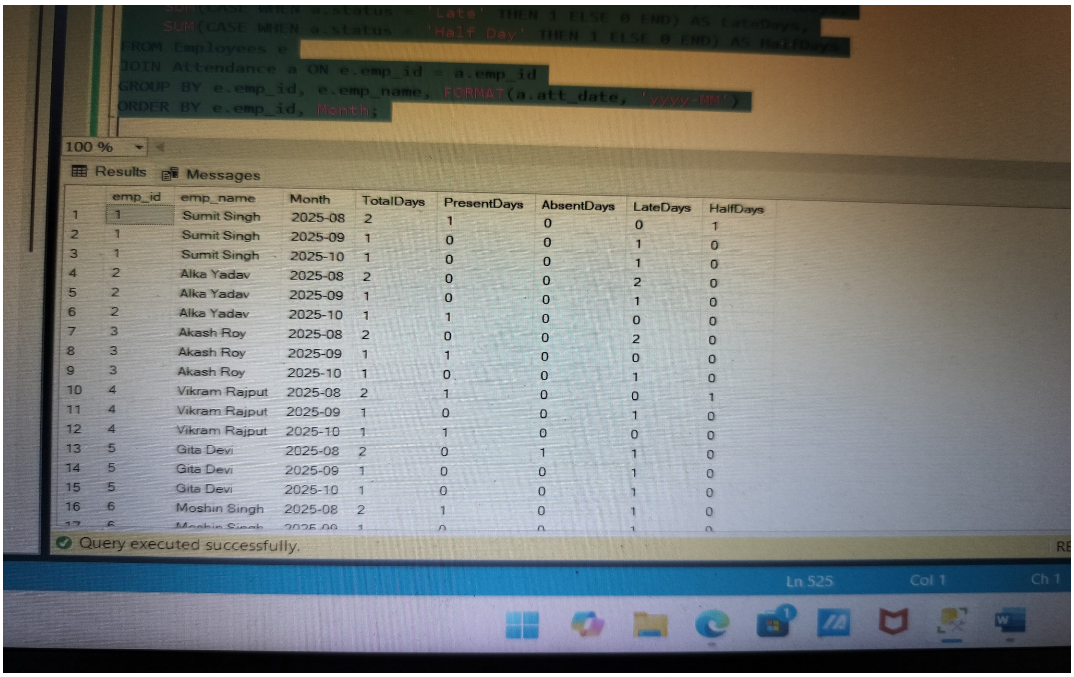
Introduction:
The Employee Management & Attendance Tracker project was developed to maintain employee records, track attendance, calculate work hours, and generate HR reports. It simulates a real-world HR system by ensuring efficient data management and reporting using SQL Server.

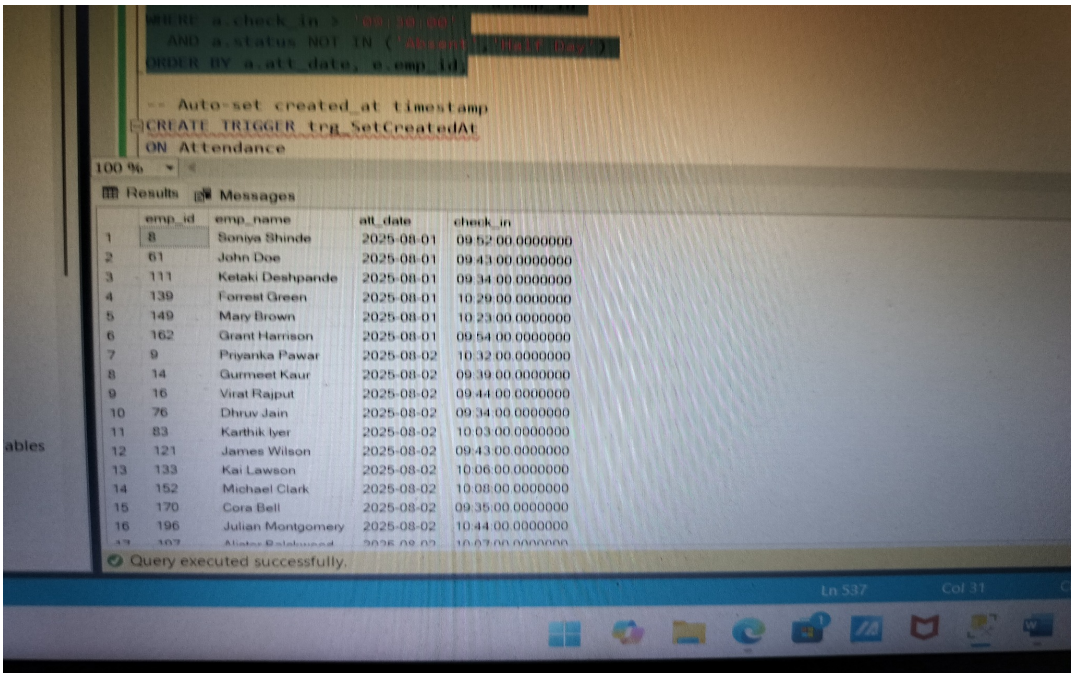
Abstract:
This project demonstrates how database systems can simplify HR operations. The system manages employee details, their roles, departments, and daily attendance. It automates repetitive tasks such as timestamping and status updates and provides insights into attendance trends and work hours. Reports generated from the database help management monitor employee discipline, late arrivals, and overall work productivity.

Tools Used:
- SQL Server Management Studio (SSMS)
- T-SQL for queries, triggers, and functions
- Database normalization (up to 3NF), dummy data population (200+ records), reporting using aggregate functions

Steps Involved in Building the Project:
1. Database Design: Employees, Departments, Roles, and Attendance tables with relationships.
2. Data Population: Inserted 200+ employee records and attendance data across months.
3. Automation with Triggers: Auto-set timestamps and assign attendance status.
4. Function for Work Hours: Reusable calculation of daily work hours.
5. Report Generation: Monthly summaries, department-wise late arrivals, and work-hour analysis.

Sample Outputs (Screenshots Attached):





Conclusion:

This project successfully demonstrates how SQL-based systems can automate HR processes. From employee data management to attendance reporting, it provides an efficient solution for HR teams. By leveraging triggers, functions, and queries, the system eliminates manual effort, improves accuracy, and ensures effective monitoring of workforce productivity.

The Employee Management & Attendance Tracker serves as a practical example of how databases can support real-world business operations and decision-making.