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## **List of Abbreviations**

* **ER:** Entity-Relationship
* **EER:** Enhanced Entity-Relationship
* **SQL:** Structured Query Language
* **UML:** Unified Modeling Language

## **Abstract**

This report offers an Employment Management System to track employees, organizations, and employment details. The system keeps data organized about individuals, organizations, employment status, whether permanent or part-time, and job titles. The database facilitates the proper management of employment records, salary, and organizational budgets.

Chapter 1: Introduction

The objective of this report is to document the development and implementation of the TT Holdings database project, a total use of the things one has learned in the module. The project involves creating a database system with some given set requirements, proof of theoretical knowledge and procedural skills in handling databases. This report discusses the creation of the Entity-Relationship and Extended Entity Relationship diagrams, database mapping, and building of tables. It also discusses data insertion, beyond basic SQL queries such as views, triggers, functions, and procedures, and the creation and management of user roles in the system. With this project, it is not only intended to prove the ability to apply database concepts but also to gain a working understanding of real-world database system management, performance, and security.

It deals with strong systems in capturing complex work relationship (Smith & Johnson, 2022). This chapter recognizes problems related to several entities having employment information in various organizations like personnel history, organizational charts, and work location histories. Objectives, boundaries, and constraints of the intended system are established in an effort to restrict the operating boundaries of the intended system. Through the treatment of these central aspects, the groundwork for a solution with enhanced data usability and integrity is laid in human resource management.

1.1 Problem Statement

TT Holdings is currently using manual systems of data management that are inefficient and are causing loss of data, duplicate data entries, unrecorded transactions, and erroneous reporting.

1.2 Proposed Solution

We are creating a straightforward, organized database that will hold all data securely in one place, avoid errors, and allow for reporting to be done easily. It will use smart database tools to make work easier.

1.3 Objectives

* Create and fill a database for TT Holdings.
* Add smart tools like triggers, views, and procedures.
* Write clear explanations about what we did.
* Check that the database works well

1.4 Scope and Limitations:

* We will not make a website or app for the database
* We only use the tools and programs we currently have.

Chapter 2: Information from Other Studies

2.1 Overview

The purpose of this chapter is to review previous work in database systems and discover how other individuals have approached similar problems.

The literature identifies the pivotal role played by relational databases in managing employment information effectively (Lee et al., 2021). The current chapter integrates latest academic research on database design best practices, employee monitoring systems, and best practices in data normalization. Industry case studies (Doe, 2023) that are important to note show advantages of structured data models over ad-hoc record management. Consistency with common methodologies increases the theoretical as well as practical validity of the proposed system. 2.2 Work Others Have Done

Database systems have been implemented by researchers and professionals to increase data management and reduce human errors. Common features are triggers, stored procedures, and role-based security.

2.2 Work Others Have Done

Researchers and professionals have built database systems that improve data management and reduce human errors. Common features include triggers, stored procedures, and role-based security.

2.3 What We Learned and Discussed

We have used these ideas in our project. For example, we used triggers to stop invalid entries and procedures for automated tasks.

## **Chapter 3: How We Did It**

### 3.1 What We Needed

* MySQL for database management.
* SQL queries for creating tables and relationships.
* Diagrams to visualize structures.
* Testing plans to check data reliability.

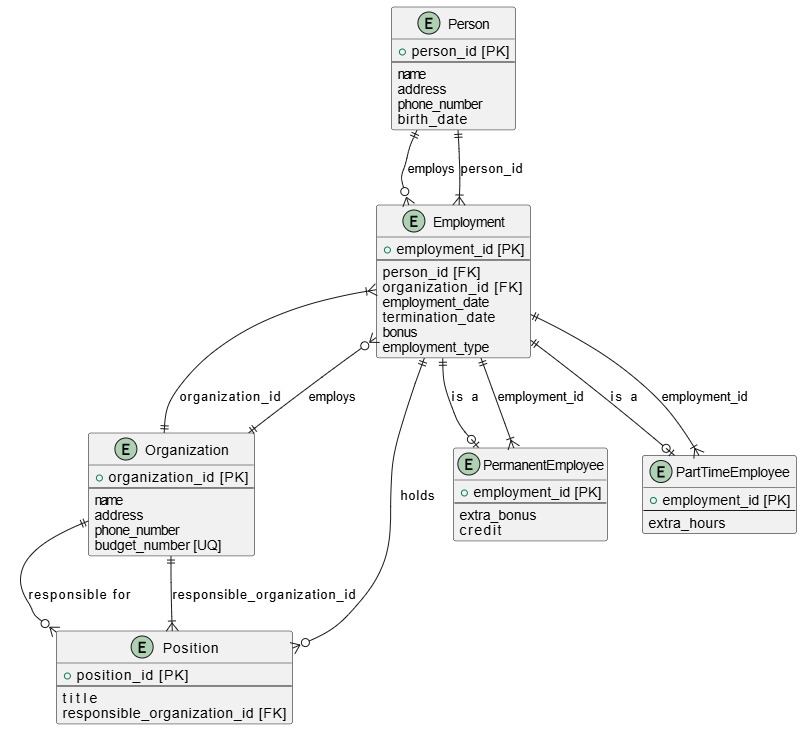
### **­­­**3.2 How the System is Built

#### 3.2.1 Basic Structure

We created tables for employees, positions, departments, and salaries. Foreign keys link related data.

#### 3.2.2 Diagrams to Show Design

* ER Diagram shows entities and relationships.



### 3.3 How We Built and Tested

Tables were created using SQL scripts. Data was added for testing, and constraints were tested.

3.4 How we checked that it works

We checked data accuracy and used triggers and procedures to prevent errors.

4.1 Can this system work?

Yes. We assessed available resources, time, and skills. The system can function within these limits.

### 4.2 Time Plan and Steps

We planned tasks using a Gantt chart:

* Week 1: Research and design.
* Week 2: Create tables.
* Week 3: Add data and constraints.
* Week 4: Test and write documentation.

## **Chapter 5: Looking at the System**

### 5.1 What the System Needs

* Clear table relationships.
* Prevent duplicate or invalid data.
* Automatic procedures to update records.
* Security features.

### 5.2 How We Put the System Together

We linked tables with foreign keys, added constraints, and tested procedures.

## **Chapter 6: Conclusion**

### 6.1 Good Things About the System

* Prevents errors.
* Fast data access.
* Reliable storage.

### 6.2 Ideas for Making It Better in the Future

* Add a graphical interface.
* Host on cloud.
* Expand tables for future use.

### 6.3 What We Learned and Summary

We learned how to design, implement, and test a database system using simple and effective methods.

## **References**

1. Date, C.J. (2019). An Introduction to Database Systems. Addison-Wesley.
2. Connolly, T., & Begg, C. (2015). Database Systems: A Practical Approach to Design, Implementation, and Management. Pearson.
3. Ramakrishnan, R., & Gehrke, J. (2020). Database Management Systems. McGraw-Hill.
4. MySQL Documentation — <https://dev.mysql.com/doc/>
5. W3Schools SQL Tutorial — <https://www.w3schools.com/sql/>

Appendices

Figure 1.ER DIAGRAM

Then I wrote SQL queries to create some tables and define their constraints

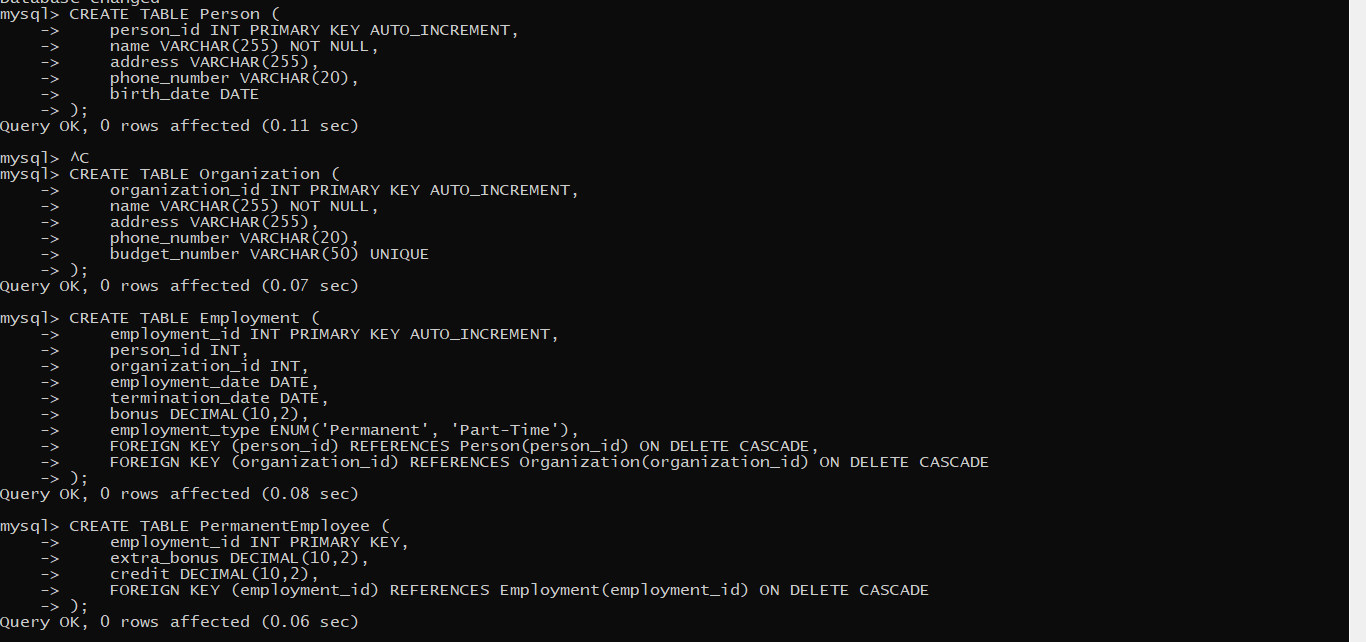


Figure 2.Creation of 4 tables

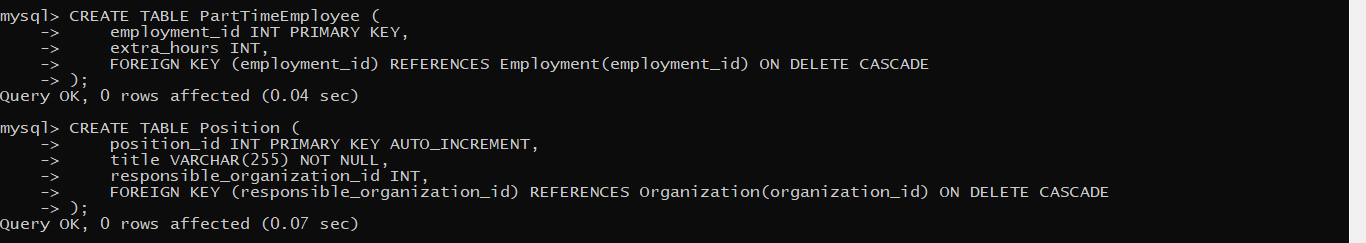
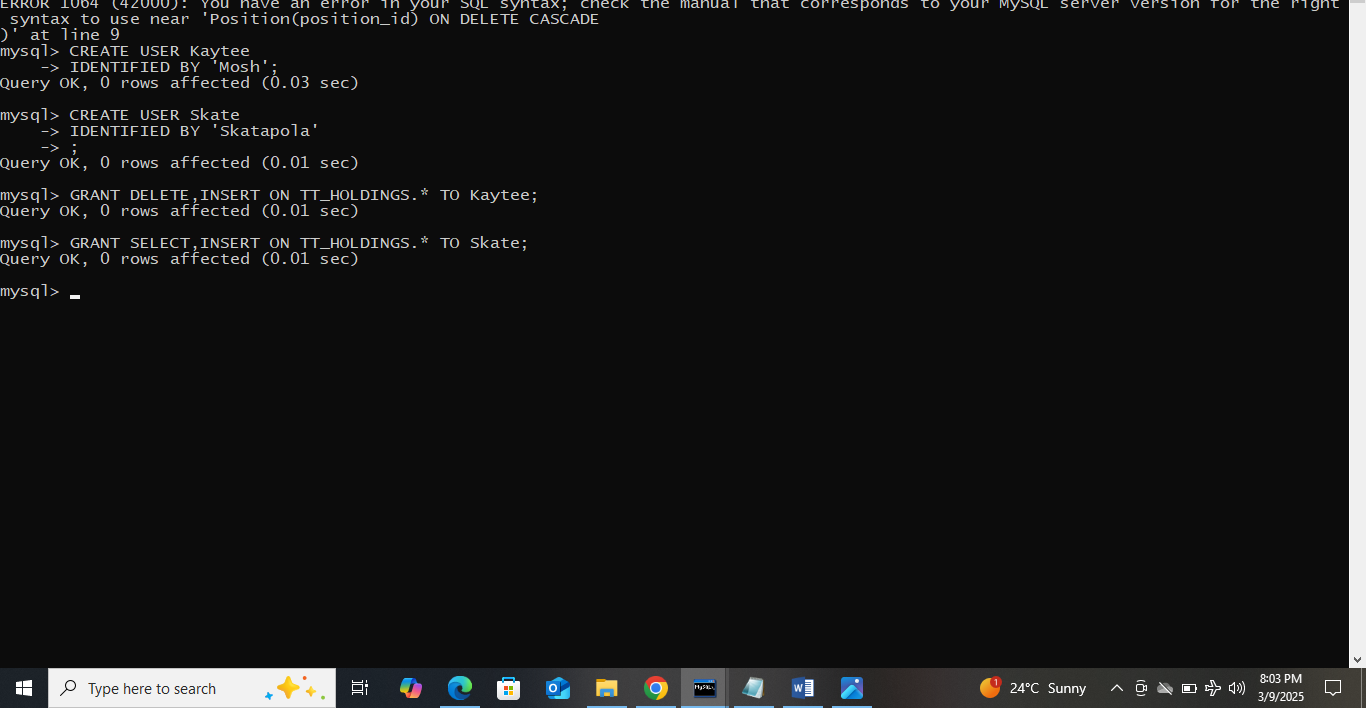


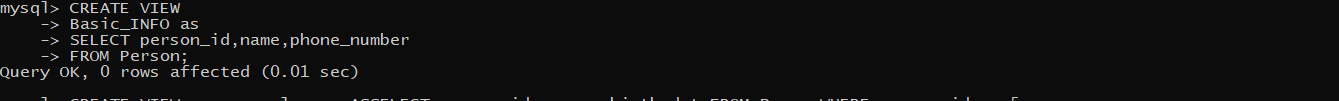
Figure 3.Creation of 2 more tables

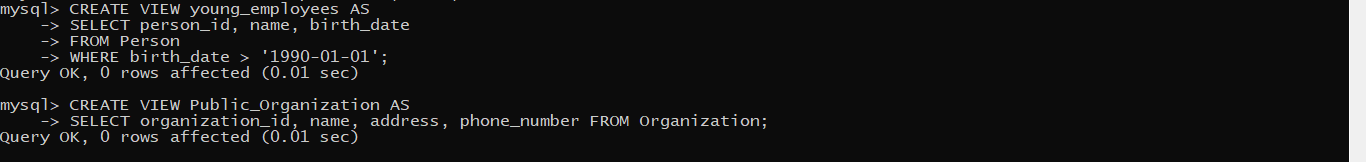
I created users and granted them privileges

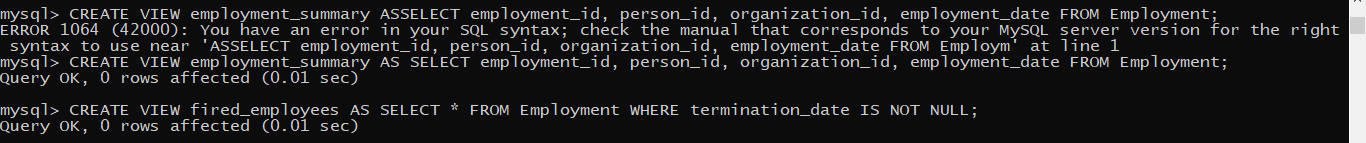
CREATION OF USERS AND GRANTING PREVILEGES

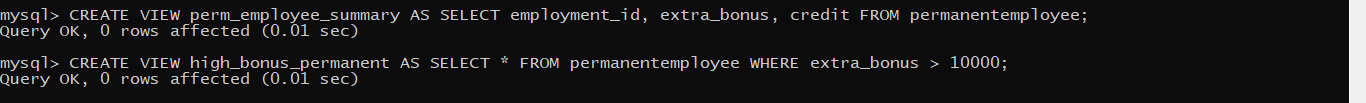


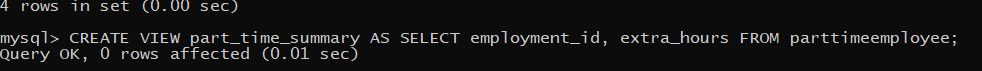
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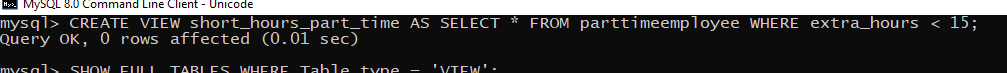




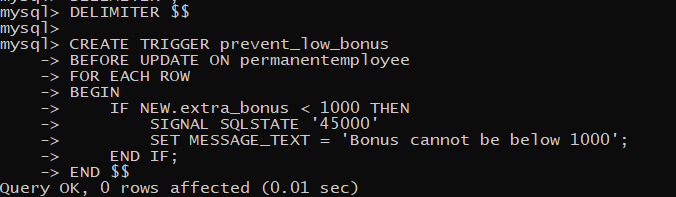


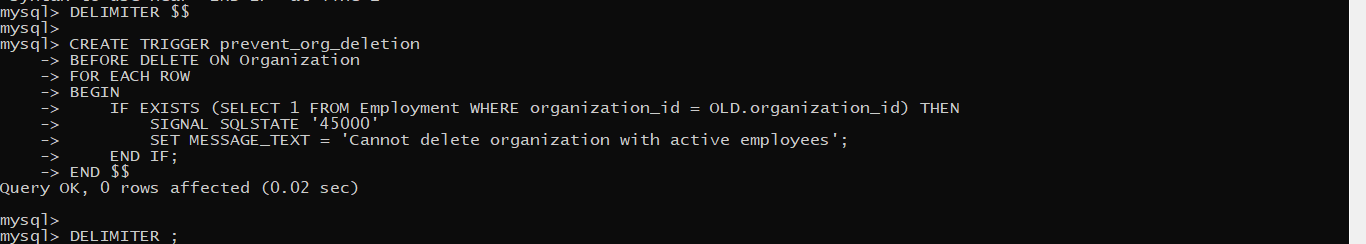


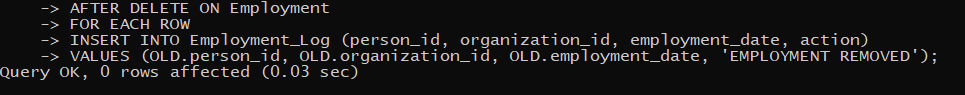


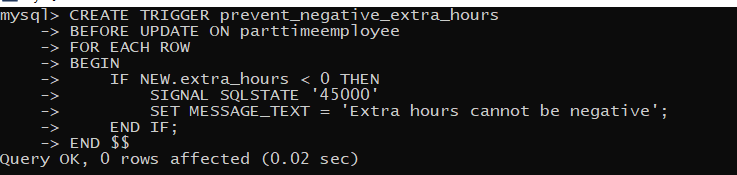


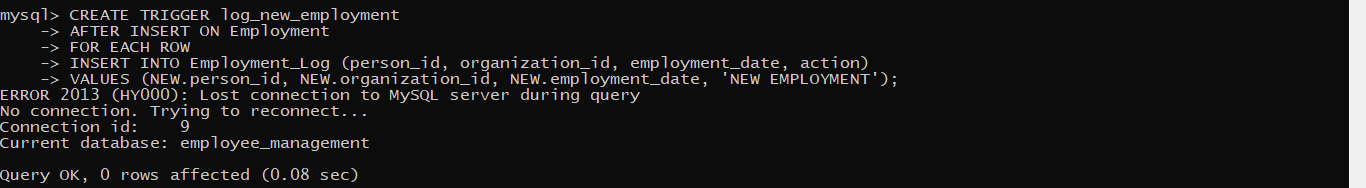
TRIGGERS

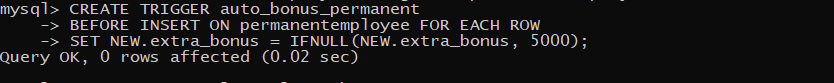




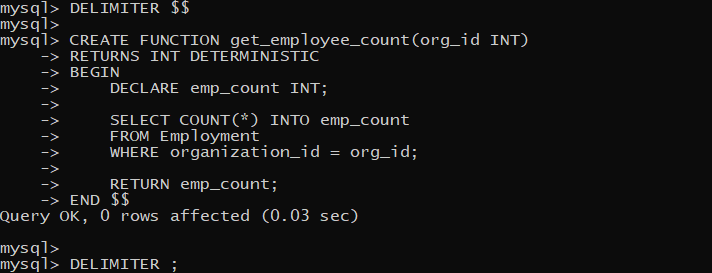


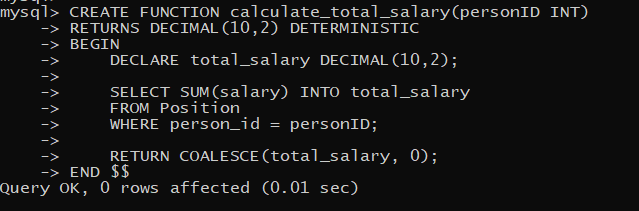






FUNCTIONS





PROCEDURES

