Project Database Design and Analysis Report

Name: Ahmed Fathy Ali Hassan

Chapter 1: Introduction

This report presents a detailed technical overview of a database designed for managing employees and their projects. The system aims to efficiently organize data related to staff members, projects, and their assignments, ensuring data consistency and ease of access.

Chapter 2: ERD Analysis

The ERD consists of the following main entities:
- Employee: Contains attributes such as id, name, date of birth, salary, street, and No.
- Project: Contains attributes such as id, name, and budget.
- WorksFor: An associative entity linking employees to projects with a start date.

The ERD diagram visually represents these entities and their relationships.

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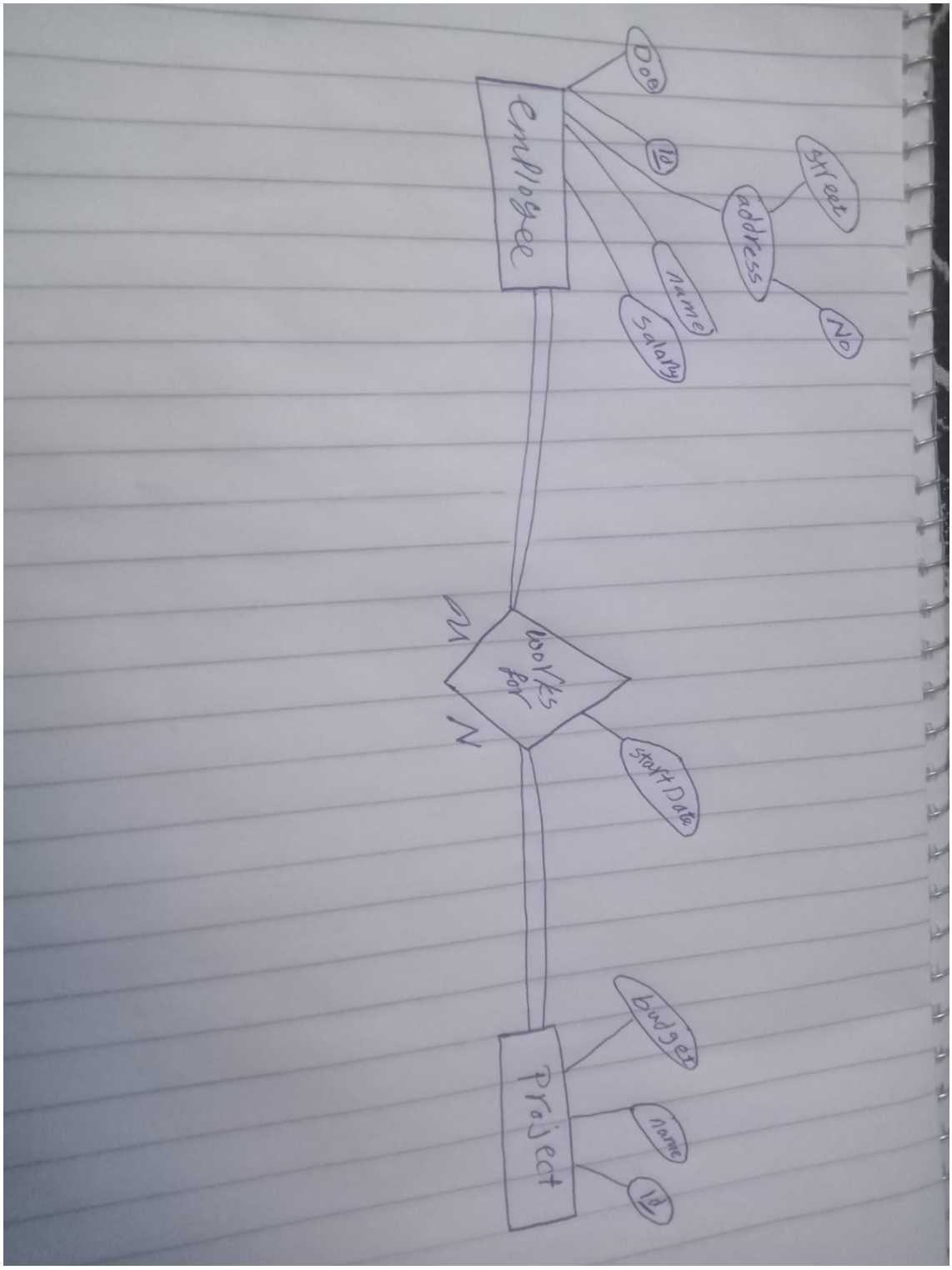
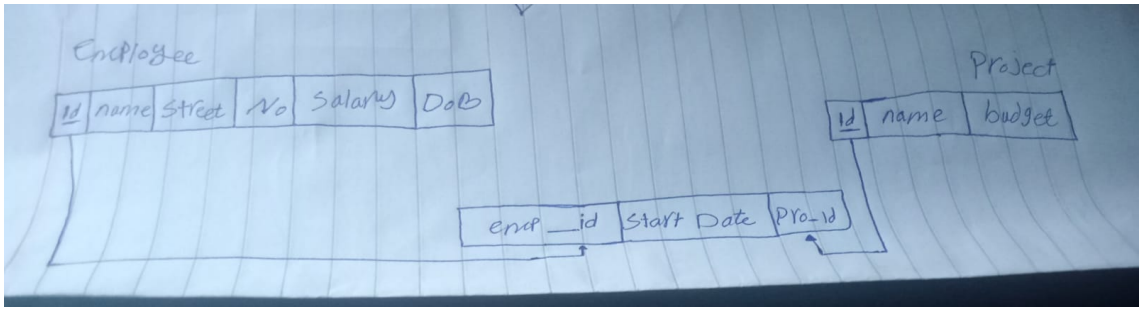


Chapter 3: Mapping and Normalization

Each entity and relationship in the ERD was mapped into relational tables. Primary keys and foreign keys are used to ensure referential integrity.

Normalization rules up to the third normal form (3NF) were applied to eliminate redundancy and ensure data

consistency.



Chapter 4: Tables Overview

The system includes the following relational tables:

- Employee: Stores employee records.
- Project: Stores project details.
- WorksFor: Many-to-many link between employees and projects with start dates.

Foreign key constraints maintain consistency between related tables.

Chapter 5: SQL Queries Analysis

The SQL scripts include queries that:

- Search for employees by name using text search.
- Calculate average salaries using aggregate functions.
- List projects ordered by budget ascending.
- List employees ordered by date of birth descending.
- Count employees assigned to each project.

Chapter 6: Observations and Recommendations

The database design effectively models the project management system. Further enhancements could include:

- Adding indexes to improve query performance.
- Implementing triggers for data validation.
- Developing user roles and access controls.
- Creating views for reporting and analytics.

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Chapter 7: Conclusion

This report summarizes the design and implementation of a normalized, relational database for managing employees and projects. The design ensures data integrity and scalability.