

German International University, Berlin

Media Engineering and Technology

Dr. Mervat Abuelkheir, Dr. Turker Ince

Databases I, Winter 2024

Milestone 1

Submission: 26/10/2024 (11:59 PM)

In this milestone, you are required to draw the EERD according to the project description and translate the EERD designed to its corresponding relational schema.

You are required to submit a zip file containing the following documents:

- a) A PDF file containing an image of your Enhanced Entity Relationship Diagram (EERD) of the database of the required application.
- b) A PDF file containing the Database Schema of your application.
- c) An Excel file containing:
 - Team name
 - Team leader name and tutorial.
 - Team members' names.
 - Team members' application numbers.
 - Team members' tutorial groups.

Note that:

The Milestone description is subject to minor changes that would be announced on CMS. Do check the CMS periodically.

The EERD has to be drawn using graph editing software, screenshots or handwritten EERDs will not be accepted

Examples of software:

- yEd: <https://www.yworks.com/products/yed>, online/offline tool
- draw.io: <https://www.draw.io/>, online tool

Submission guidelines:

- a) You have to stick to the conventions of the EERD discussed in the tutorials.
- b) The deadline of submission for this milestone is Saturday 26th of October at 11:59 PM. This is a hard deadline with no extensions. Plan your work on the milestone as a team accordingly.
- c) Only one copy of the documents will be submitted via a team member, other submissions will not be considered. The zip file submitted has to be named after the team number which will be announced after registration e.g. Team_10.
- d) Submission will be via the submission link, check CMS regularly as it will be posted there, you will be notified when that happens.

- e) Make sure that the team leader submits a printed A3 hard copy to the project assigned TA that should be announced on a document uploaded on CMS. [Yes, this is required so that the course instructors can review your EERD in detail, please don't communicate with the course instructors to confirm it].

Important Note:

- No late submissions will be accepted.
- The submission will be through the submission link ONLY, which will be announced on CMS. NO mail submissions would be accepted.
- Cheating cases will be graded by ZERO in the whole Milestone.
Cheating detection will be applied after your submission, and the team will be notified with an email. The purpose of the email then will be either to notify the team that the ZERO is a final grade, or to notify the team of a meeting so that you can discuss it.
- It is your responsibility to make sure that the files are not corrupt and were uploaded successfully to the submission link. Corrupt files cases are non-negotiable. If I don't have the file via the form, I won't grade any other file through any other platform, exceptions being GIU mails if something happened to the form.

German International University in Berlin

Media Engineering and Technology

Dr. Turker Ince, Ahmed Mohammed Hassan

Databases I, Winter 2024

Milestone 1 Project Description

“Supermarket Management System”

1. Project Overview

This project aims to design and implement a database to manage the operations of a supermarket including customer, employee, product, sales, and inventory data management. The data management system handles mainly customer information, payment details, employees, products, suppliers, sales transactions, and inventory information.

The database will store critical information such as customer and employee profiles, customer accounts, sales transactions, product and supplier information, product promotions and inventory information. This system will support efficient data retrieval for customer service, payment and sales history, consumer products, and inventory.

The customer will automatically create an account upon purchasing a shopping card of the supermarket. This seamless process ensures immediate access to account features and services.

2. System Requirement

This section describes the different requirements that the system has to include.

2.1 Customer Profile

Detailed records of customer profile, including personal information such as name (first name and last name), phone, email, address, date of birth, and customer shopping card number.

2.2 Customer Account

Each account is uniquely tied to a customer’s shopping card number, allowing for tailored management of services and preferences associated with each customer.

Each account has account type, account start date, account status, and total points earned which represents points earned through various transactions, which can later be exchanged for multiple vouchers on future purchases.

2.2.1 Customer Card Points

Customer card points are earned through various payment transactions; each group of points is assigned based on a specific percentage calculated from a total transaction amount. Points record has ID and amount.

2.3 Employee Profile

It should include at least the following fields employee ID, name, position, hire date, and salary.

2.4 Product Information

Product ID, name, category (dairy, bakery, produce, etc.), brand, product's stock quantity, supply price and sale price.

2.5 Supplier Information

The supplier ID, name, contact, address, as well as product ID, supply price, and lead time information can be recorded. A product may have multiple suppliers.

2.6 Payment Information

Payment refers to the record of all previous transactions made by the customer account. Each payment transaction is uniquely identified by a payment ID. It also includes transaction amount, date of payment, payment method and payment status. This information enables tracking the payment history, ensuring transparency, and facilitating better financial management of the services.

2.6 Sales Transactions

Each sales transaction has an ID, date, total amount, employee ID, and customer account number, as well as other transaction details such as ID of the product sold, quantity sold, and its selling price. There can also be cash sales without customer details.

2.7 Promotions

The promotions represent various advantages or features offered to the customer's account. This includes points group, cashback, and exclusive offers.

A customer's account may be entitled to multiple promotions on the same time, while each promotion instance may be associated with one specific account.

The promotion ID serves as a unique identifier for each promotion. A promotion can also have a description, validity date (start and end date), and status (active or expired).