Databases-Week02

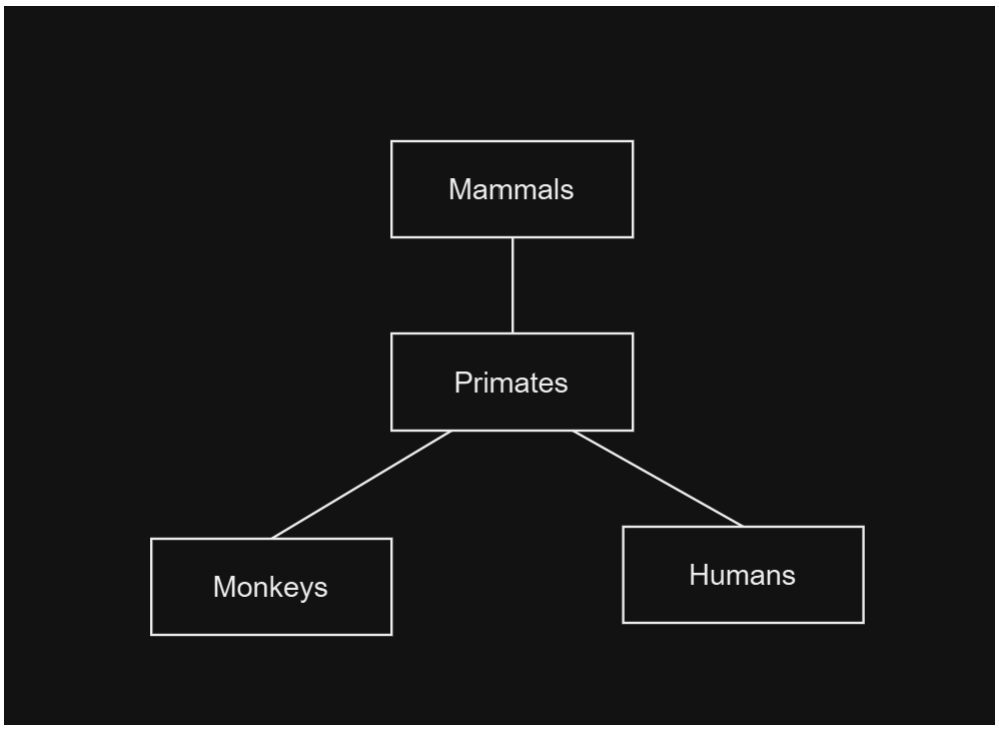
-Tao Nijia, He Yiyang, Liang Ruyi

BASIC TASKS

Task 1.

a. Hierarchy of abstraction:

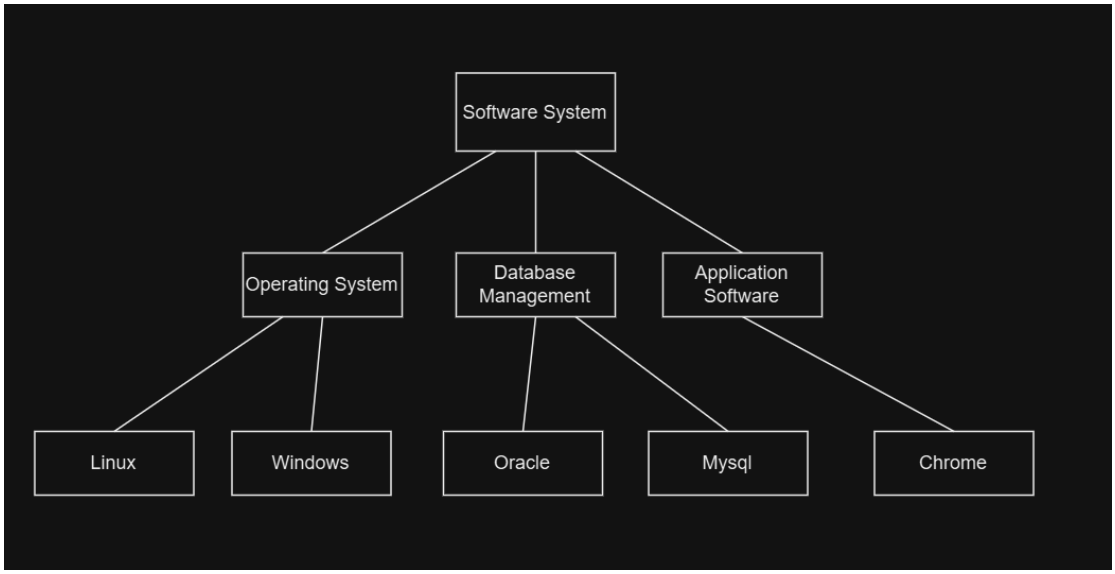
- Mammals
  - Primates
    - Monkeys
    - Humans



b. Hierarchy of abstraction:

Software System

- Operating System
  - Linux
  - Windows
- Database Management System
  - Oracle
  - Mysql
- Application Software
  - Chrome



Task 2.

a. Entity: An entity is a distinct object or thing in the real world that has independent existence.

b. Entity Type: An entity type is a collection of entities that share the same attributes.

c. Entity Instance: An entity instance is a

specific occurrence of an entity type.

d. Optional: In the context of an entity relationship, optional means that the participation of an entity in the relationship is not mandatory, and it may or may not participate.

e. Mandatory: In the context of an entity relationship, mandatory means that the participation of an entity in the relationship is required, and it must participate.

f. Cardinality: Cardinality represents the quantitative relationship between two entities, such as one-to-one, one-to-many, or many-to-many.

Task 3.

Data Model: A data model is an abstract representation of data in the real world, including the structure, relationships, and constraints of the data. Three reasons why data modeling is important are:

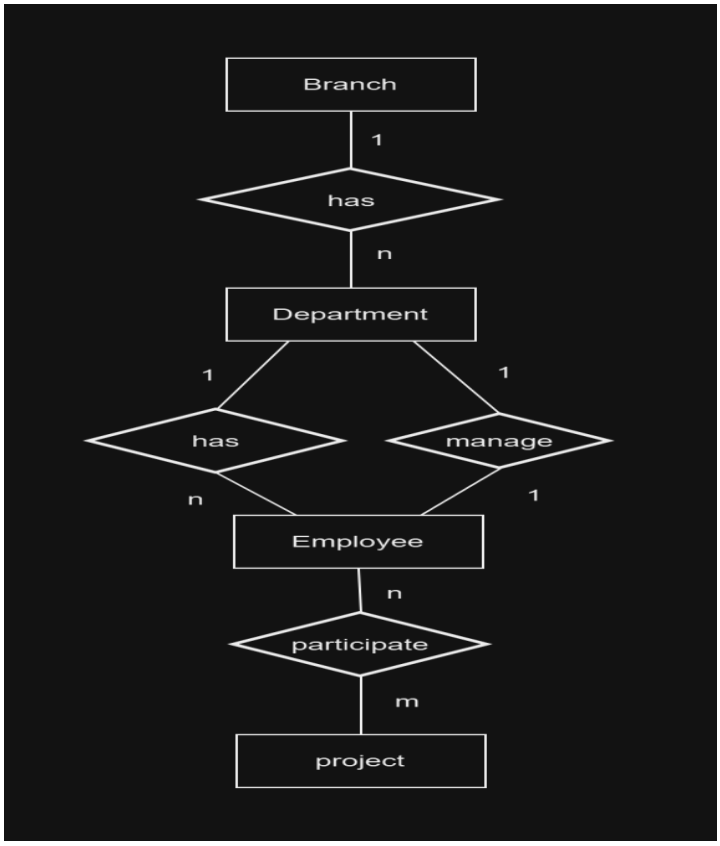
1. Accurately Represent Business Requirements: A data model helps to accurately understand and

represent business requirements, ensuring that the database design matches the actual business processes.

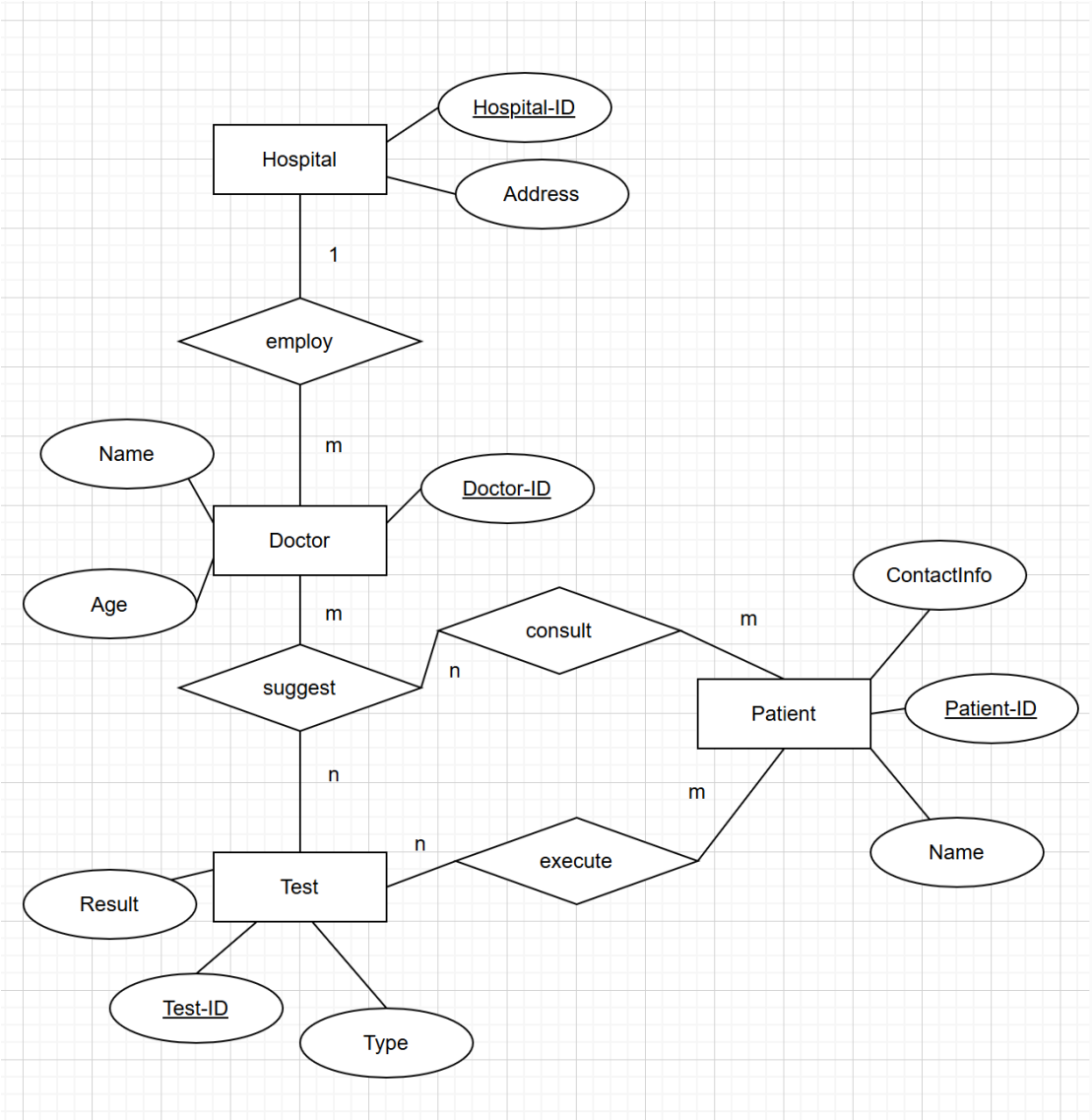
2. Ensure Data Quality: By defining the integrity and consistency rules of the data, data modeling can improve the quality and reliability of the data.

3. Optimize Database Performance: A reasonable data model can optimize the storage and query performance of the database, improving the efficiency of data processing.

Task 4.

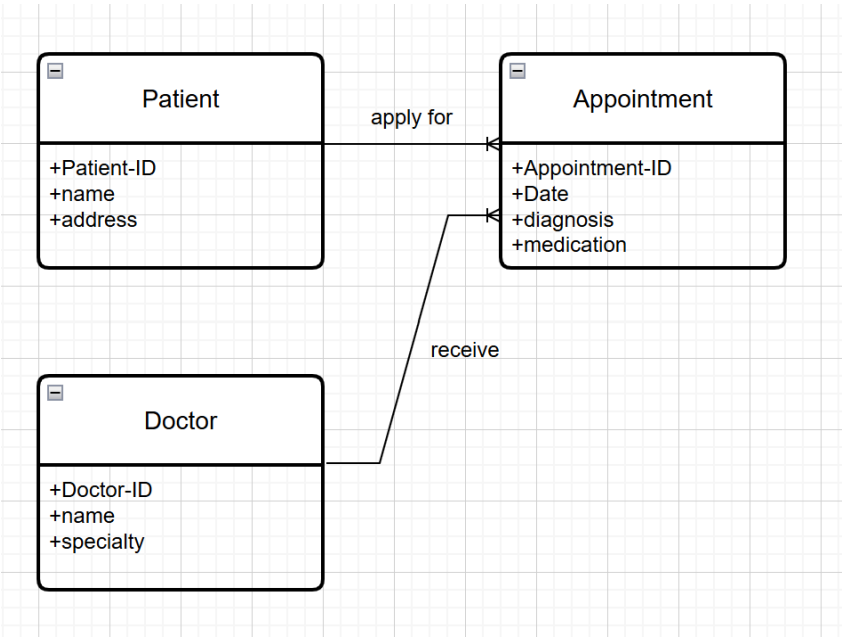


Task5.



Medium Tasks

Task6.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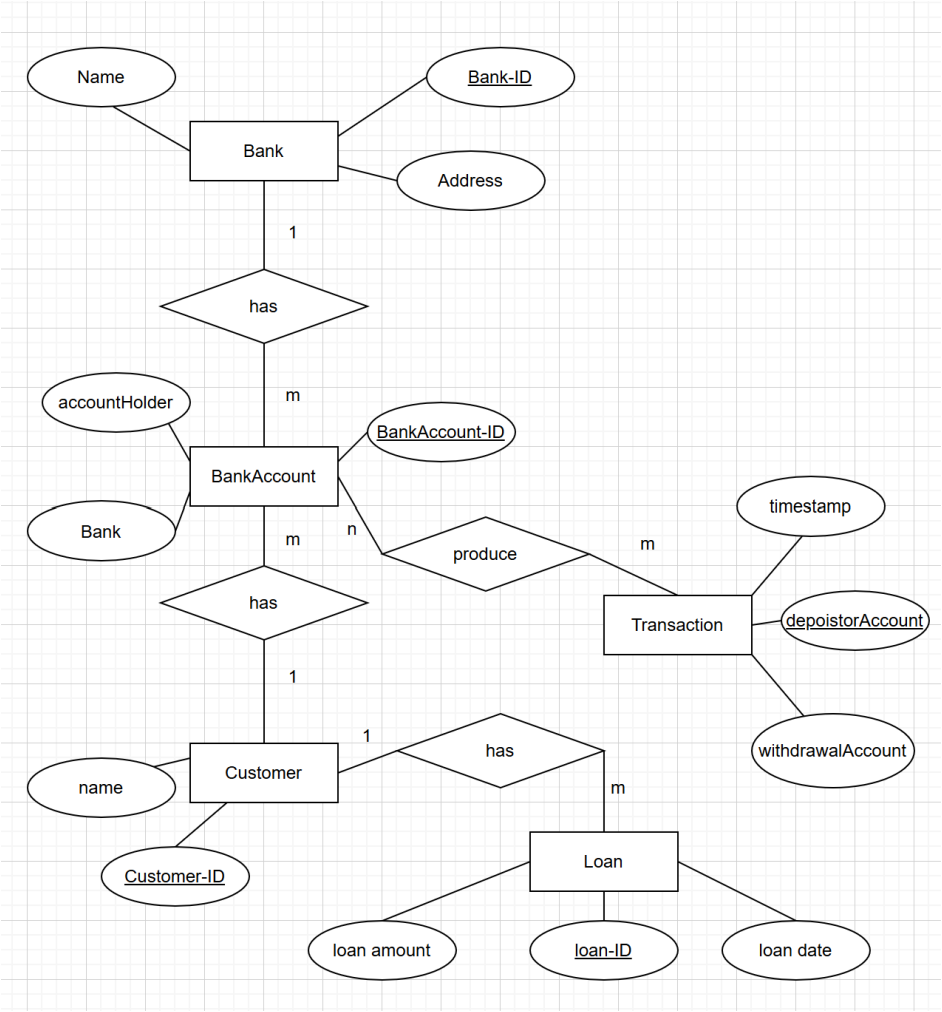
Task7.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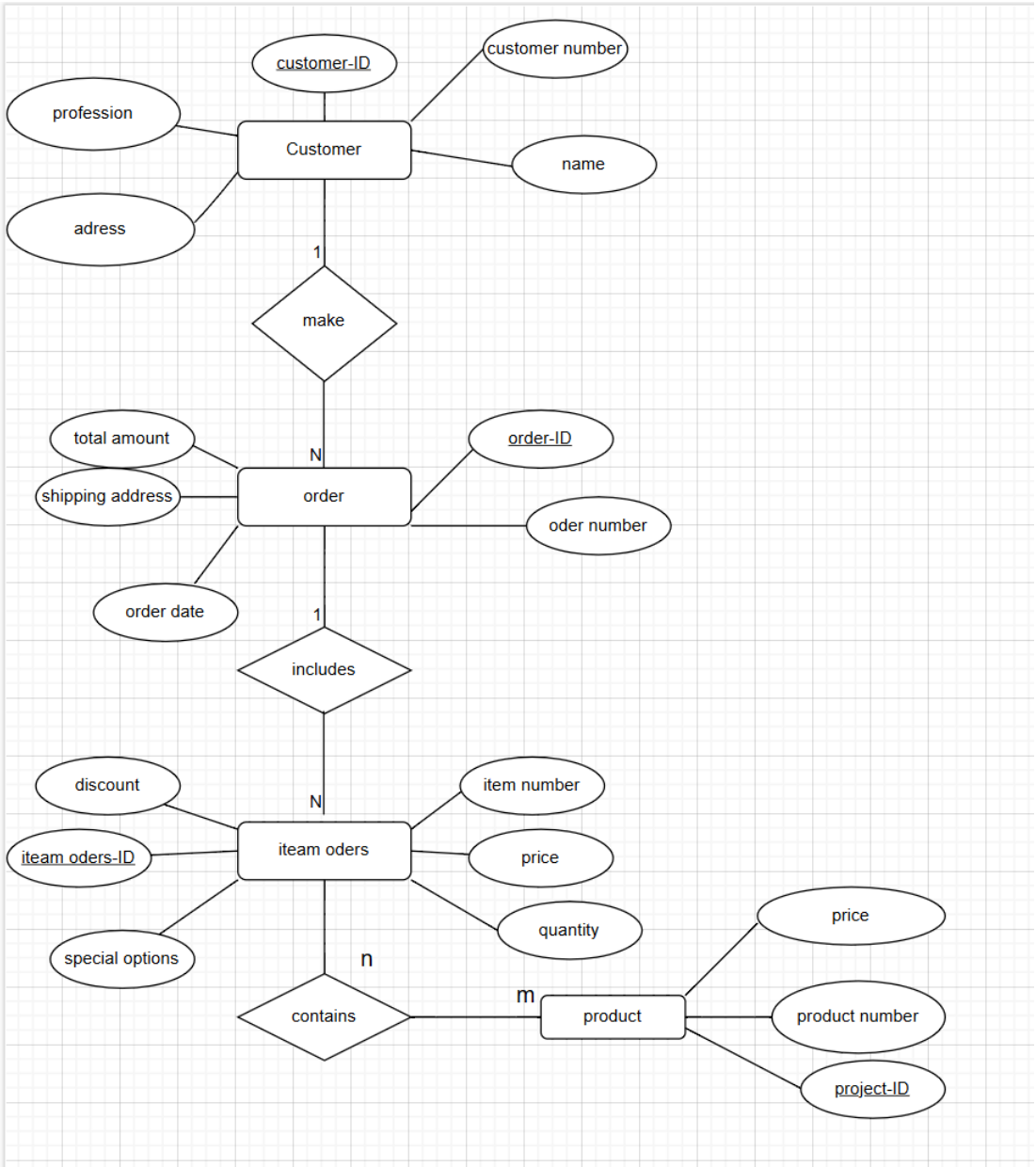
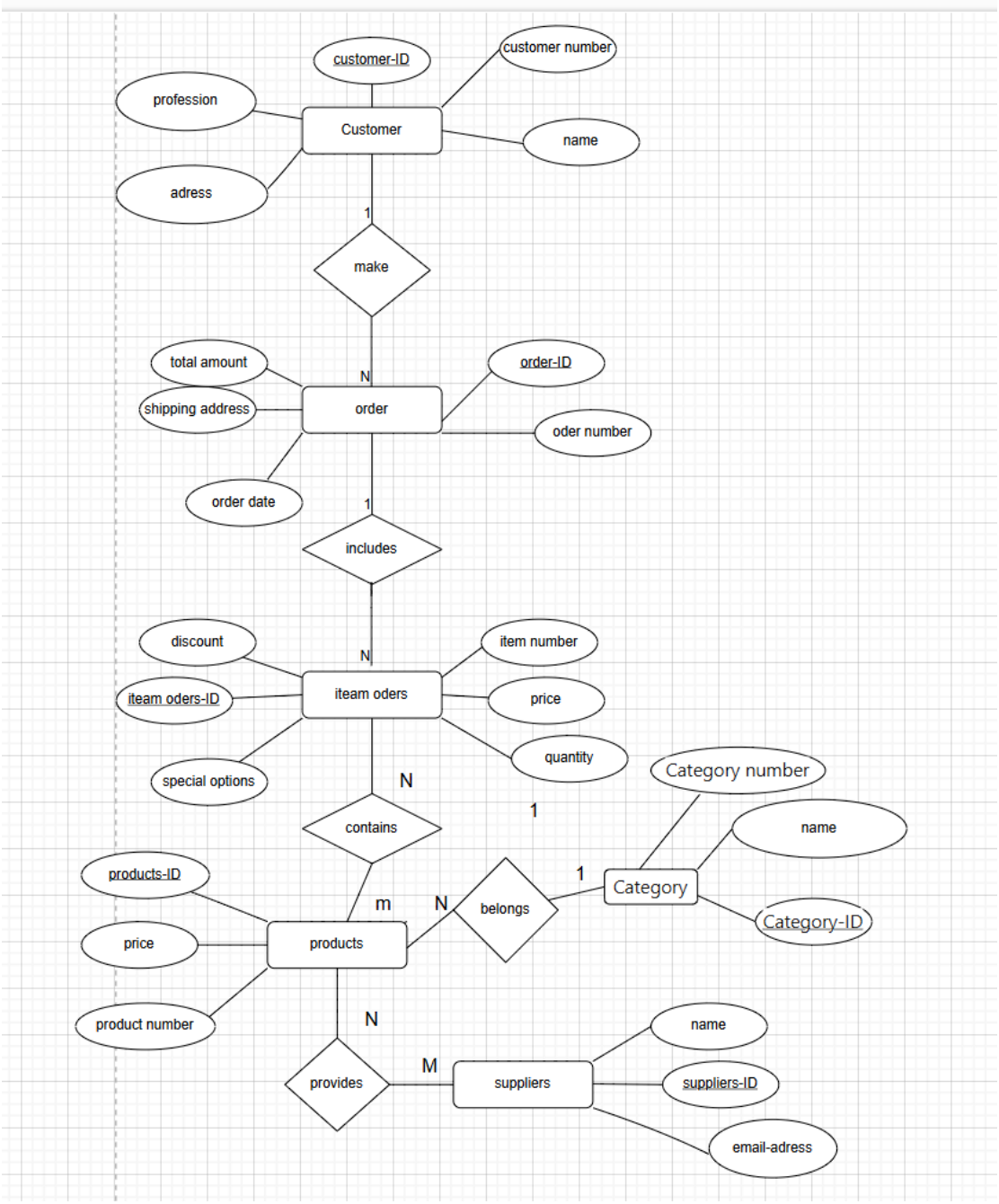
ADVANCED TASKS

Task8.



Task9.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