ENSF 608 – Databases LAB Session (OCT. 10th)
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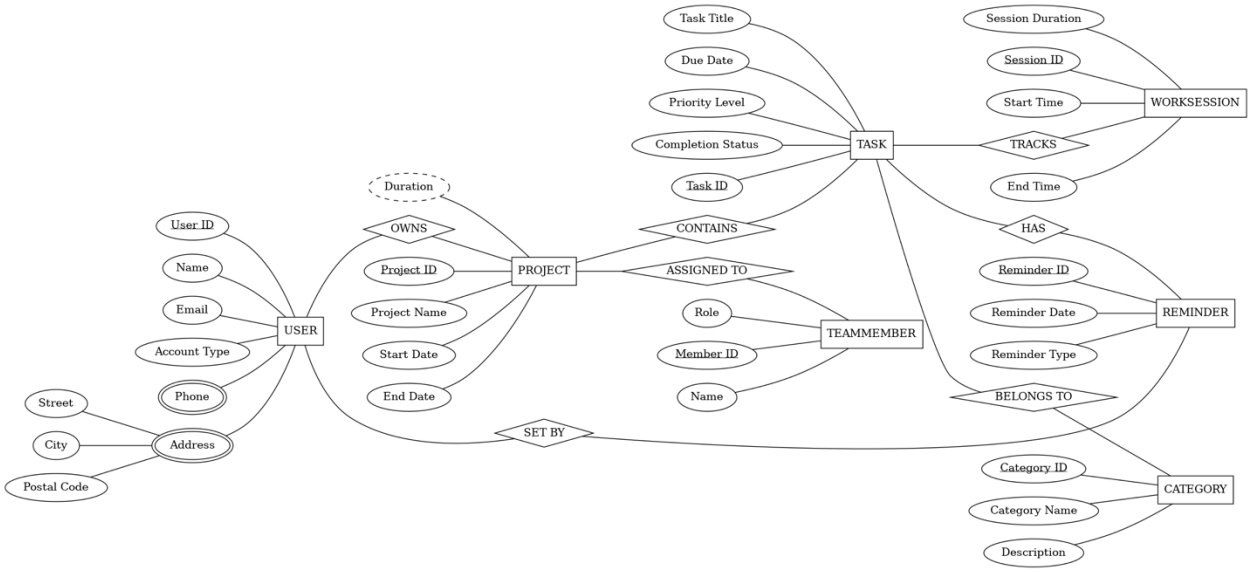
MANDATORY PRACTICE

Practice 1: Mapping an ER Diagram

System Description: You were tasked with creating an ER diagram for **TaskMaster**, a daily task management app that helps users manage their activities, track progress, and set reminders. Using the following description to model the conceptual ER diagram, incorporating entities, attributes, relationships, and specialization concepts, the result was the diagram below.

- **User**. Each user has a User ID, Name, Email, Account Type, Phone, and Address. A user can have multiple phones and addresses. A user is connected to projects.
- **Project**
  A project has a Project ID, Project Name, Start Date, and End Date. Project names are composed of the department acronym and the name code. A project is created by a user and is associated with tasks. The database should allow users to determine the project duration.
- **Task**
  A task has a Task ID, Task Title, Due Date, Priority Level, and Completion Status. A task is related to a project. Each task is independent and not a specialization of projects.
- **Work Session**
  Users can track their time by logging Work Sessions for tasks. A Work Session has a Session ID, Start Time, End Time, and Session Duration. A task creates a work session, and these sessions depend on that task for their existence.
- **Reminder**
  A reminder has a Reminder ID, Reminder Date, and Reminder Type. A reminder is linked to a task and set by a user.
- **Category**
  A category has a Category ID, Category Name, and Description. A category is related to tasks, serving as a way to organize them.
- **Team Member**
  A team member has a Member ID, Name, and Role. Team members are associated with team projects.

Proposed Diagram:



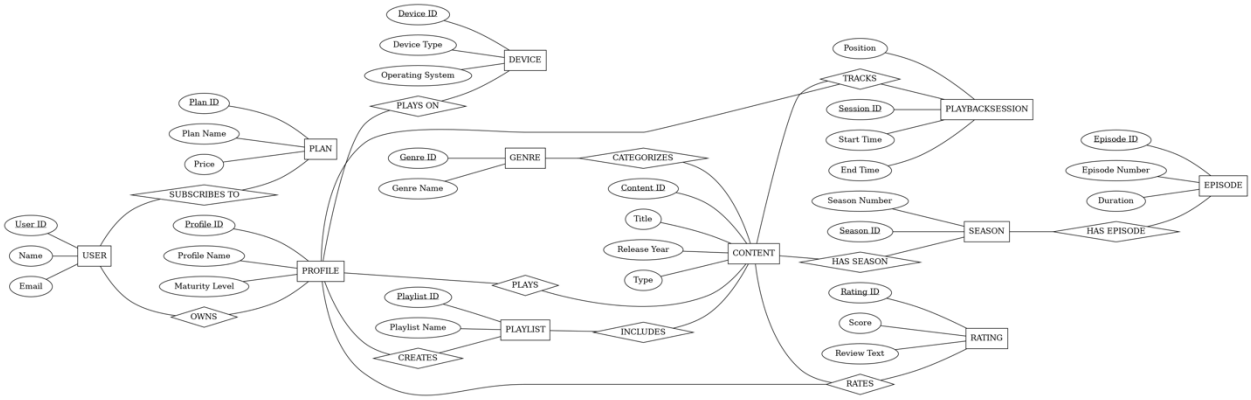
Task 1: Review the proposed diagram and make any necessary adjustments or corrections. If no changes are required, confirm that the diagram correctly represents the system described above.

Task 2: Using the logical mapping process discussed in class, build two versions of the logical model for the system:

- a **table visualization**, and
- a **written (textual) visualization**.

Task 3: Apply the normalization rules to verify that your logical model satisfies at least the **first three normal forms (1NF, 2NF, and 3NF)**. Then, analyze whether **BCNF, 4NF, or 5NF** would be necessary for this project and justify your conclusion.

Practice 2: Mapping without Description



You have just joined an ongoing project and received only the ER diagram shown below. No textual system description is available.

Your task is to interpret and translate this ER diagram into a logical schema.

Instructions:

1. Analyze the diagram to identify entities, attributes, and relationships.
2. Map the diagram into a logical schema using the mapping process discussed in class.
3. Apply normalization to ensure that the resulting logical model satisfies 1NF, 2NF, and 3NF. This requirement is mandatory and not negotiable.
4. Include either the table representation or the written (textual) description of your logical model.