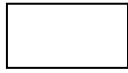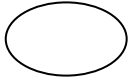Student Name: ZUO YIYANG

Student ID: 12200086b1

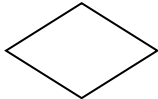## In-class Exercise 01 E-R Models

Solution:

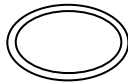Q1. Please explain the meaning of the following graphical symbols.

Rectangle — entity set

Ellipse — attribute

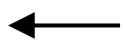Diamond — relationship set

Double ellipse — multi-valued attribute

Dashed ellipse — derived attribute

Thick line — total participation

Arrow — key constraint

Q2. Please draw an E-R diagram which fulfills the following requirements.
We want to create a very simple database for MUST in which to record information
about professors, students and classes. (The Solution to Q2 is illustrated on page 3)
- For each professor we need to store the p-id, name and office number.
- For each student we need to store the student-id and name
- For each class the id (e.g., CS231) and the name.
- Each class is taught by exactly one professor.
- Each student must take at least one class.
- For each class that a student took we need to give the grade
- *Simplifying assumptions: there is only one lecture for each class and only one semester in the database.*

Q2:

Solution:

An ER diagram.

Professor entity (attributes: Pid [key], Name, office no.) connects via **Teach** relationship to **Class** entity (attributes: Cid [key], Name).

Class connects via **Take** relationship to **Student** entity (attributes: Sid [key], Name). The **Take** relationship has attribute **Grade**.