

A decorative graphic on the left side of the slide, consisting of a network of white lines and circles on a blue gradient background, resembling a circuit board or a neural network.

WEEK 1

ENTITY RELATIONSHIP DIAGRAMS – WEAK ENTITIES – PART 5

CS3319

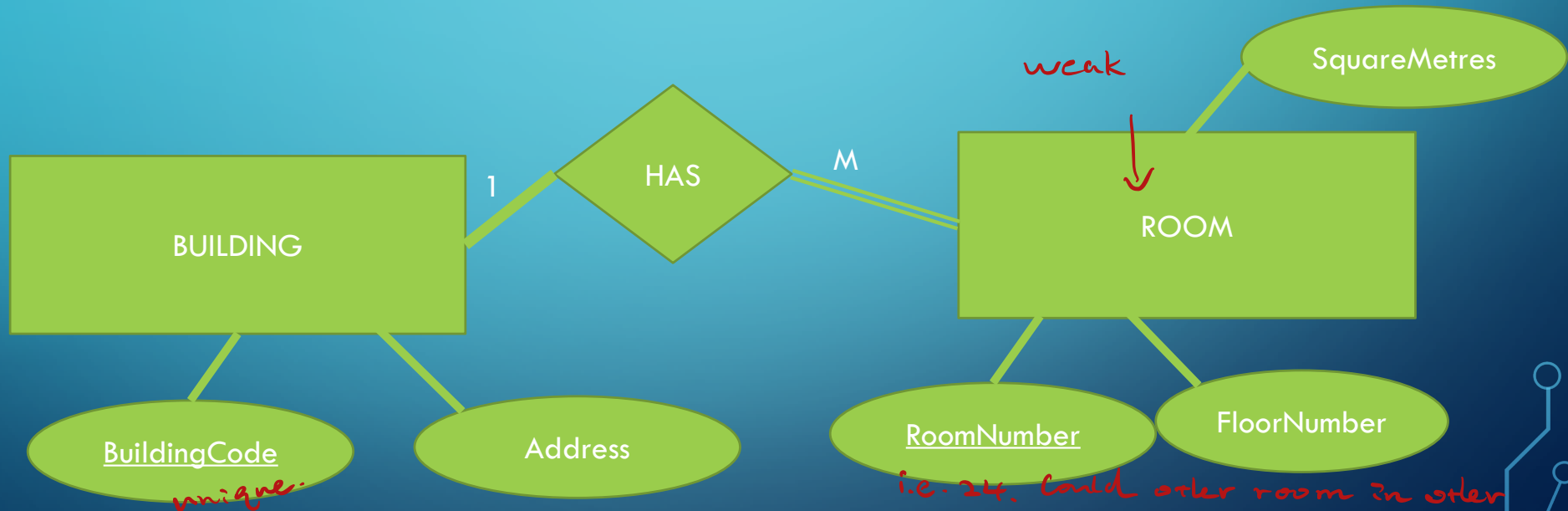
STUDENT OBJECTIVES

- Upon completion of this video, you should be able to:
 - Identify a *Weak Entity* given a set of specifications.
 - Using a double outlined rectangle and diamond indicate a weak entity on an ER Diagram
 - Identify the OWNER Entity of a WEAK Entity.

WHAT MAKES AN ENTITY WEAK?

- 1) if a key attribute is not a one key that does not uniquely identify the entity, then it is a weak entity.
- 2) if an entity could not exist without its owner, the entity may be a weak entity.

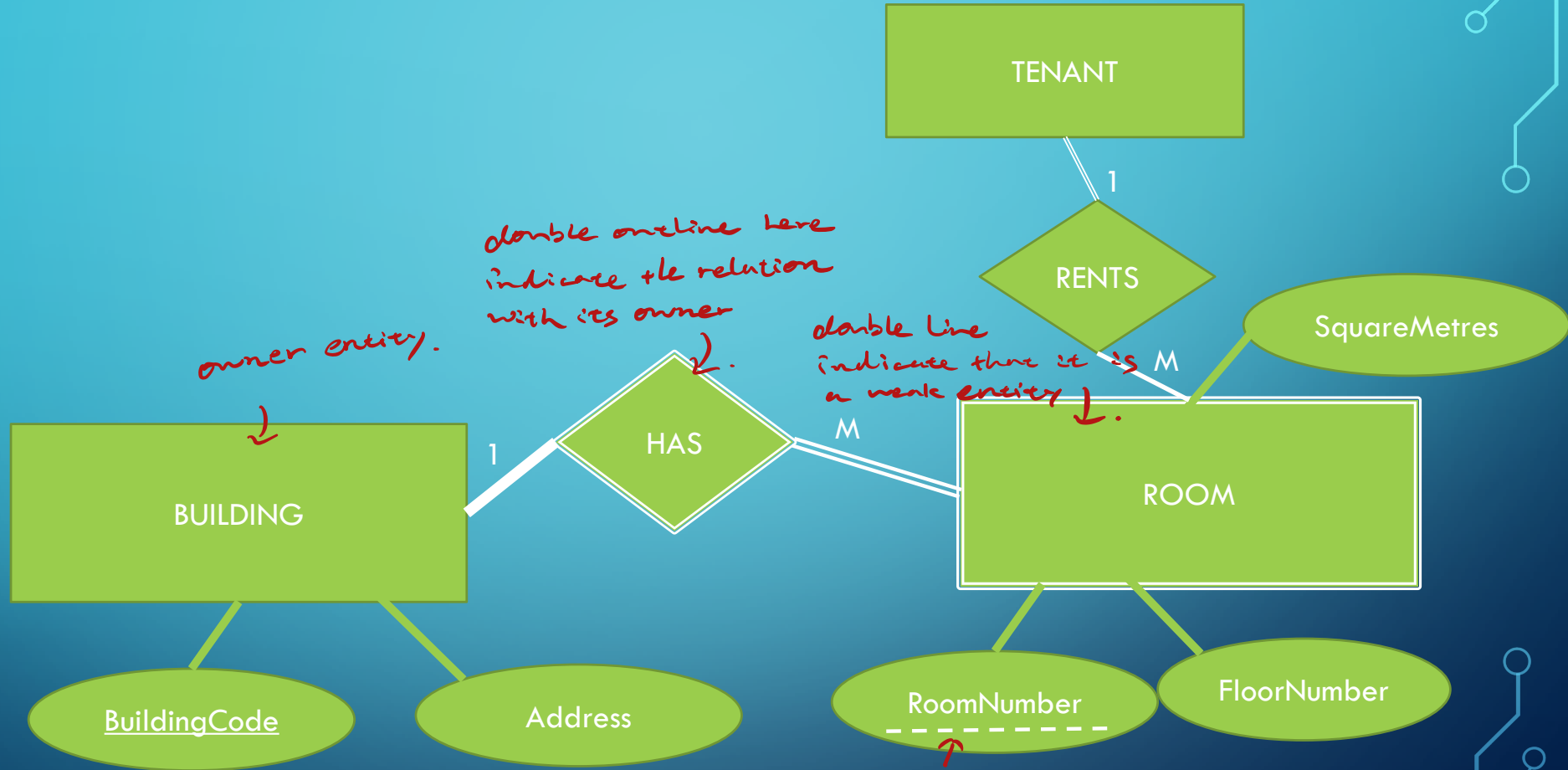
- Look at the Entities: BUILDING and ROOM and at the Relationship HAS



i.e. 24. Could other room in other building have room number 24?

WEAK ENTITY TYPES

- Have no key attribute of their own
- Cannot exist without its identifying owner
- Always has total participation with its identifying owner
- Always has a double line around the relationship with its identifying owner
- The identifying owner does not have to have 1 weak entity (partial participation)
- Can sometimes be represented at composite, multi-valued attributes
- Use a dashed underline to show the partial key of the weak entity
- Use a double outlined diamond to show the relationship with the owner entity



E-R DIAGRAM NOTATION SO FAR:

- Weak Entity



QUESTION: Can you see a weak entity in our case study?

name for employee

CASE STUDY – CREATING AN ER DIAGRAM

- Suppose we plan to model a company which is organized into departments.
- Each department has a unique name, number and employee who manages it (we want to keep track of when the employee started managing the department)
- A department may have several locations
- A department controls a bunch of projects, each project has a unique number, name and a single location
- Each employee has a name, ssnumber, address, salary, sex and birthdate
- An employee is assigned to only one department but may work on several projects which are not necessarily from the same department
- Keep track of the number of hours each employee works on each project.
- Keep track of the direct supervisor of each employee
- Keep track of the dependents of each employee (name, sex, birthdate and relation)



QUESTION: WHAT IS OUR DIAGRAM SO FAR?

Let's use draw.io to finish the diagram.