

# Assignment 1

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## Analysis

The first paragraph of the description is ignored when creating the ER diagram since it is just an introduction.

The sentence “First, the system will store information about several cinemas” indicates that there is an entity Cinema for the diagram. “Each cinema has a unique name and an address” shows that the entity Cinema has attributes name and address. Although each cinema has a unique name, cinema names have changed in the past. Thus, we cannot let the attribute name be the primary key. We cannot let the attribute address be the primary key either since the location of a cinema may change (e.g., moving the cinema to another place or expanding the cinema). Thus, I believe it is better to add another attribute called cid, stands for cinema id, and let this attribute be the primary key. Therefore, the Cinema entity has three cid, name and address where cid is the primary key.

“Per cinema, the system will also maintain information per room” illustrates that the entity Room is owned by the entity Cinema. In other words, Room is a weak entity of Cinema since a room can only be uniquely defined when there is a cinema corresponding with it. Since each room has a different room number, the attribute room\_num is added to be the partial key for the entity Room. So, the primary key for the entity Room is the pair (cid, room\_num). Based on the description, the entity also has attributes screen\_type, screen\_size, projector\_type, sound\_system and accessibility. The examples of screen type, projector type, sound system are ignored since we focus on the attributes rather than the examples of each attribute when creating the diagram.