ERDS

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OBJECTIVES:

01 **ERDs**

02 **Entities, Relationships and Attributes**

ERD

- Is a conceptual model

- A set of notations to draw the logical structure of a database

ERD

- Has 3 main types of notations (Chen, Barker, crow's foot)
- Has 3 components

ERD

- The main notations are Barker and Crow's Foot

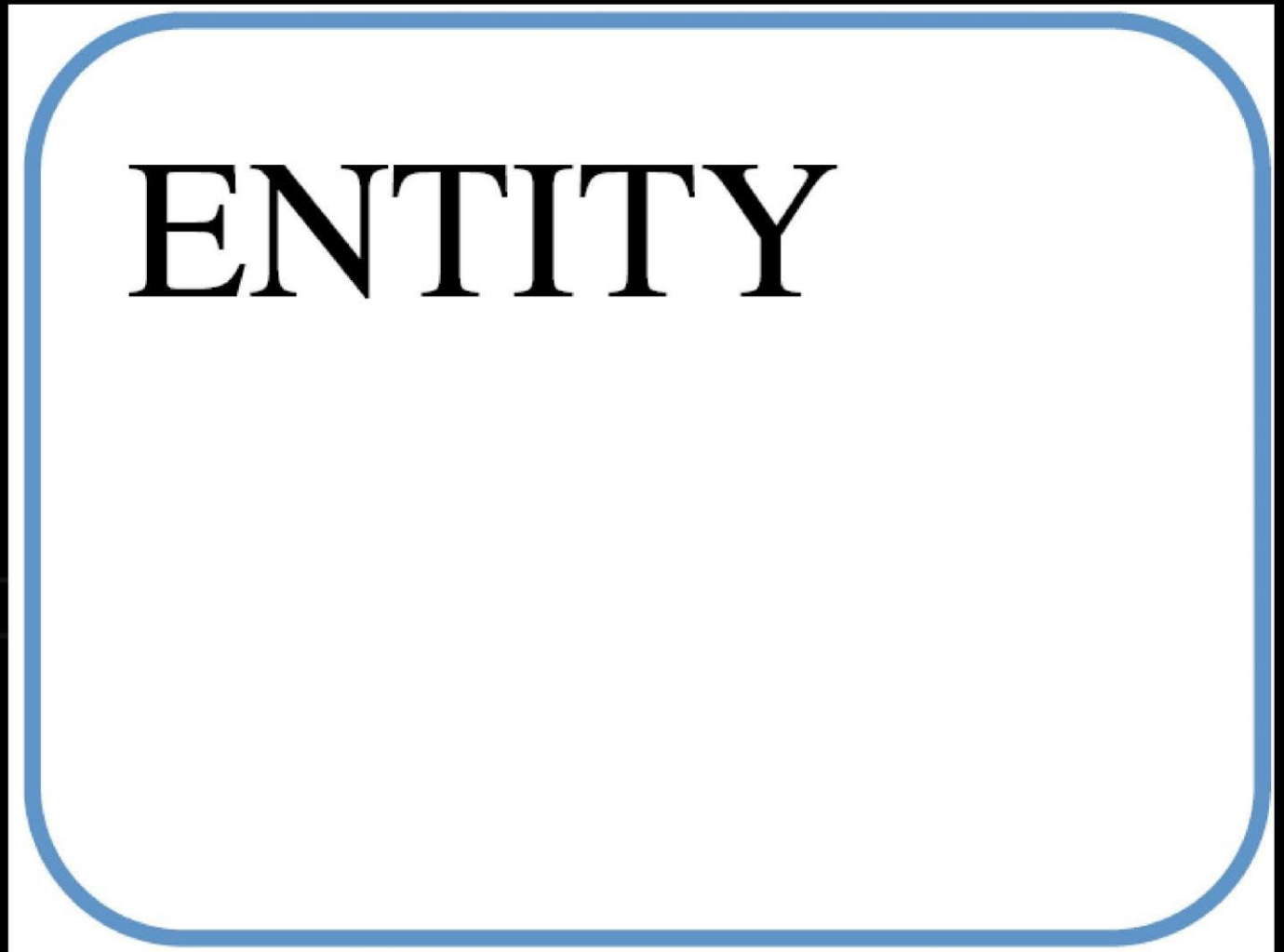
Entities

- “Something” of significance must be known to the business about which data must be known
- A name for a set of similar things that you can list

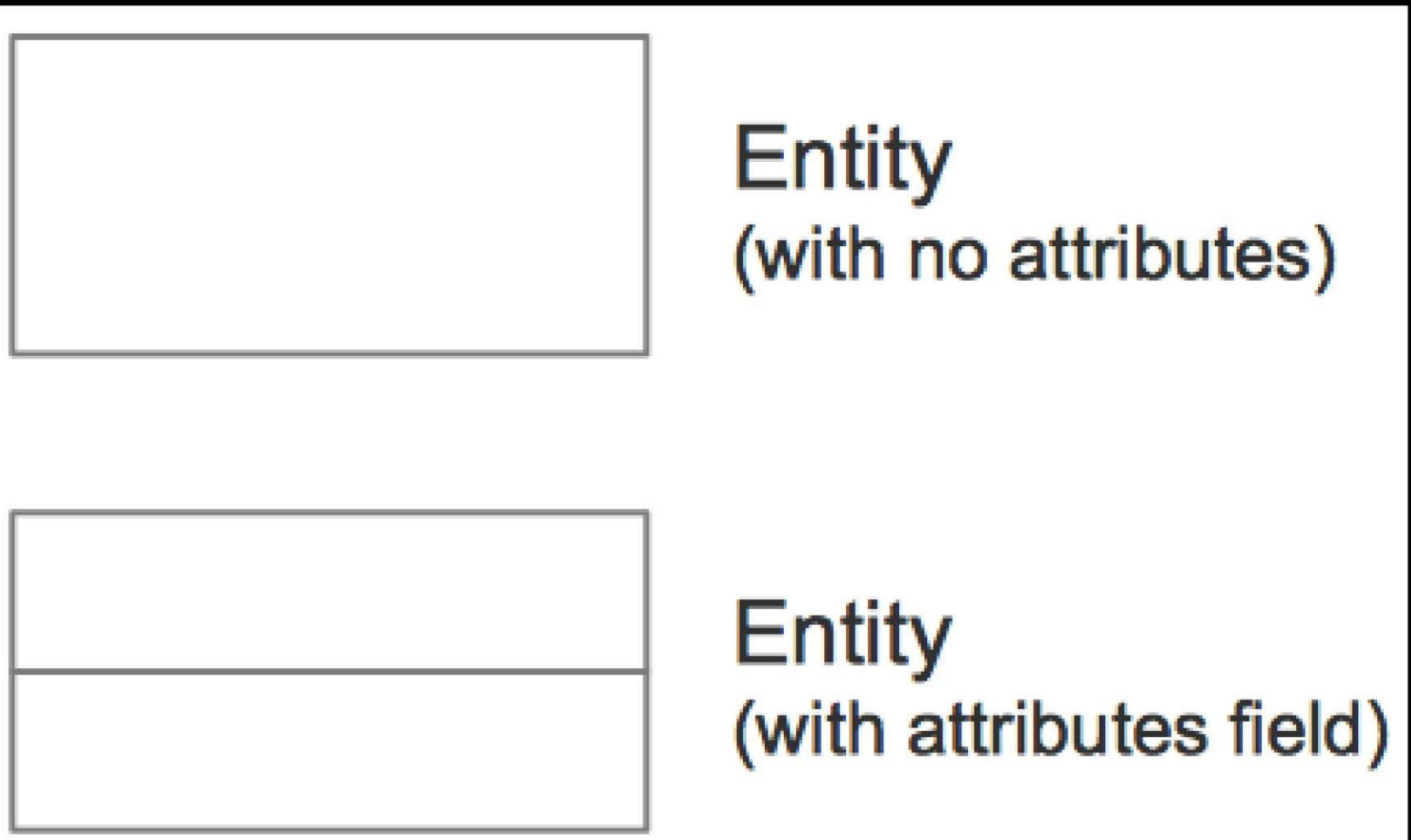
Entities

- Must have a name, in uppercase
- will contain attribute/s
- will have at least 1 relationship

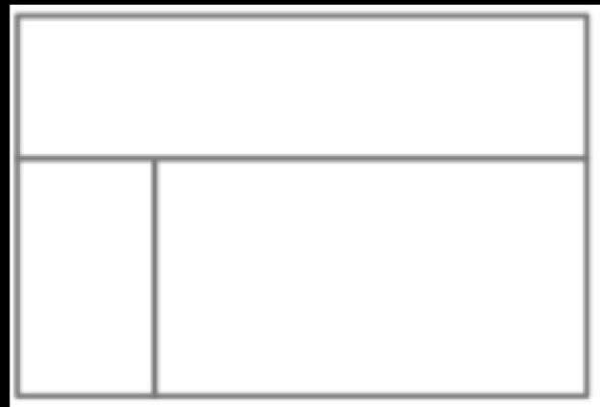
Entities (Barker's)



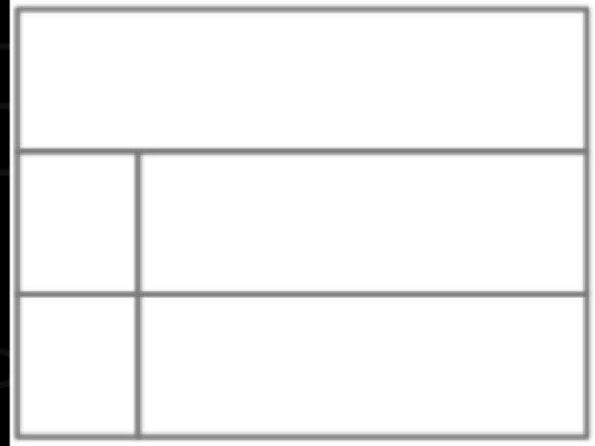
Entities (Crow's Foot)



Entities (Crow's Foot)



Entity
(attributes field with columns)



Entity
(attributes field with columns and variable number of rows)

Attributes

- Like an entity, an attribute represents something of significance to the business.
- Attributes have values.

Attributes

- Attributes have types

Attributes (Barker's)

- Unique Identifier: A UID is an attribute whose value uniquely identifies an entity instance. A UID is implemented as a Primary Key.

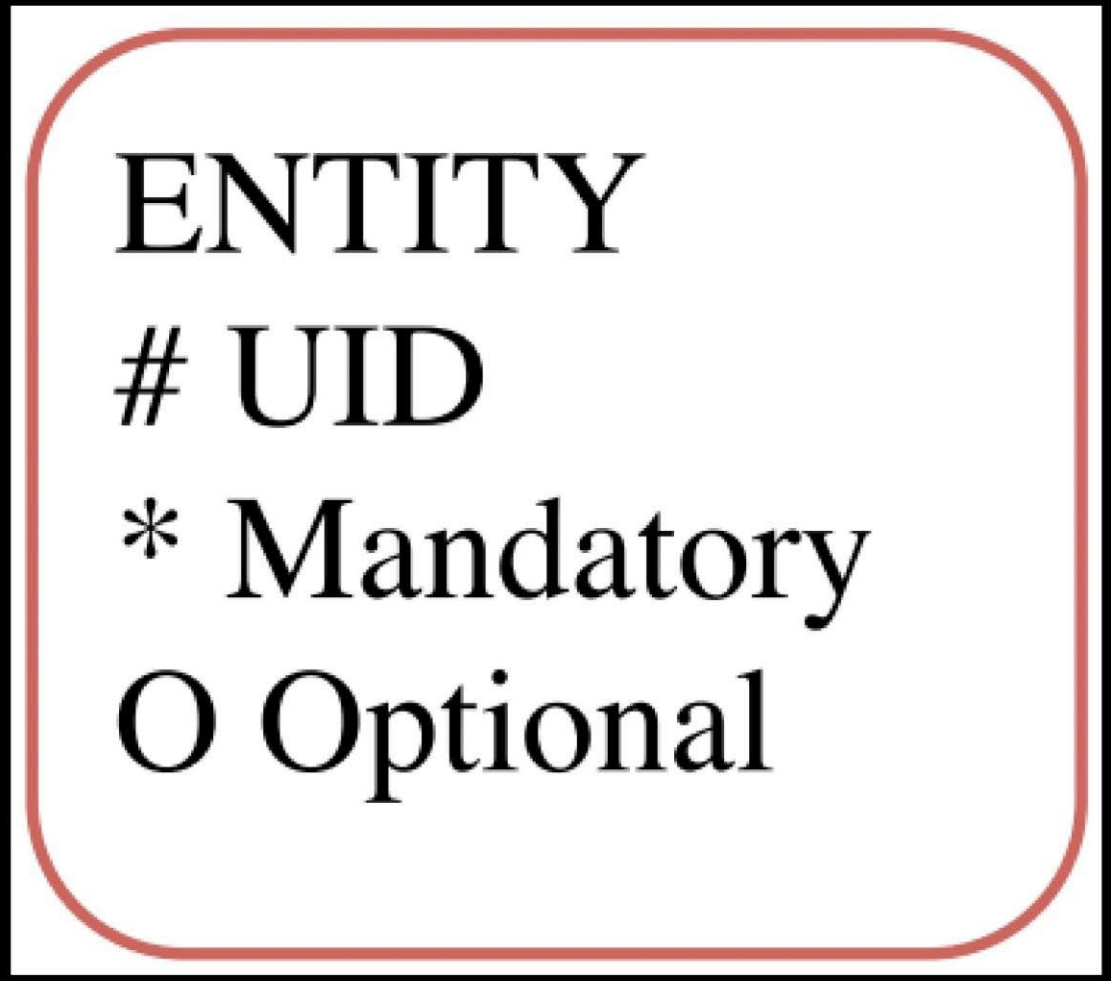
Attributes (Barker's)

- Mandatory Attribute: A mandatory attribute is one whose value cannot be null.

Attributes (Barker's)

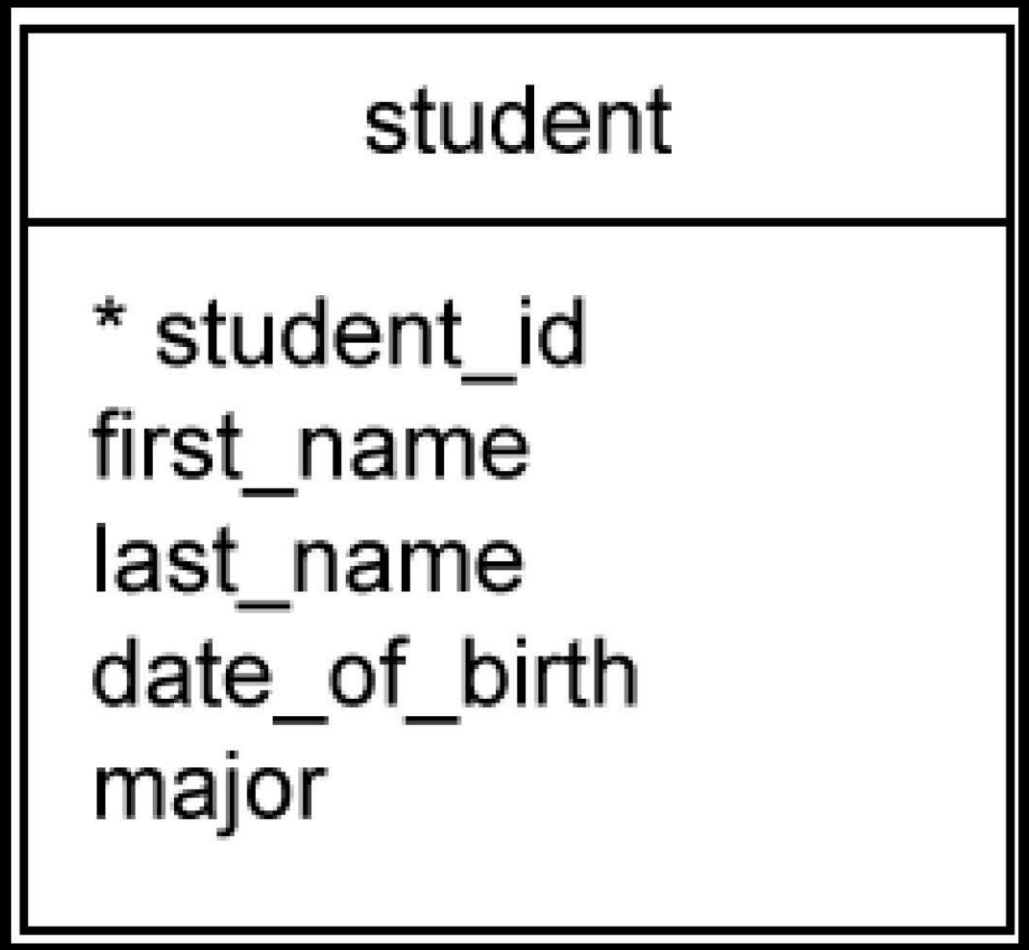
- Optional Attribute: An optional attribute is one whose value can be null.

Attributes (Barker's)



Attributes (Crow's Foot)

Attributes (Crow's Foot)



Relationship

- It is the way in which two or more people or things are connected.

Relationship

- Optionality and Cardinality

Relationship (Barker's)

- Optionality

Relationship (Barker's)

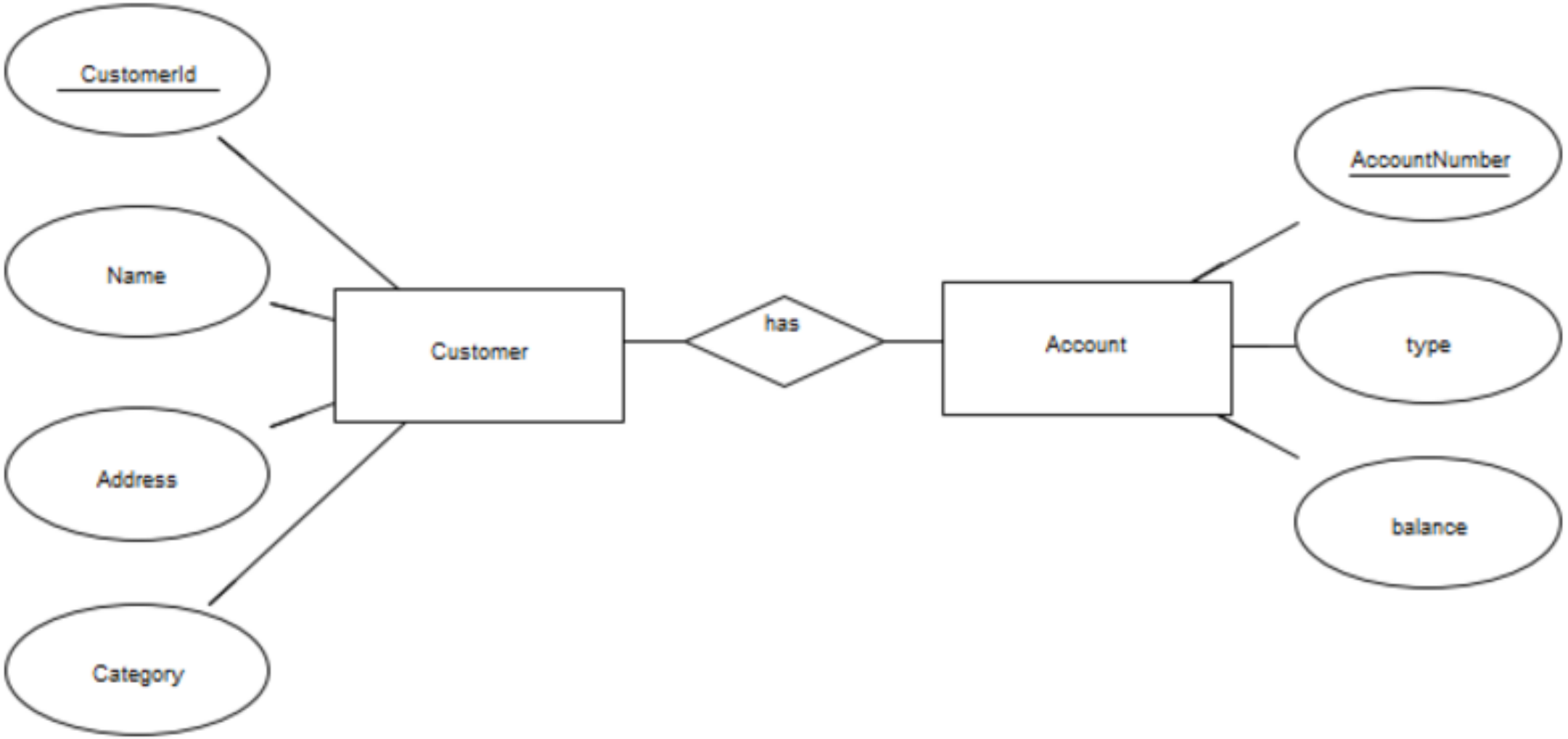
- Cardinality

Relationship (Barker's)

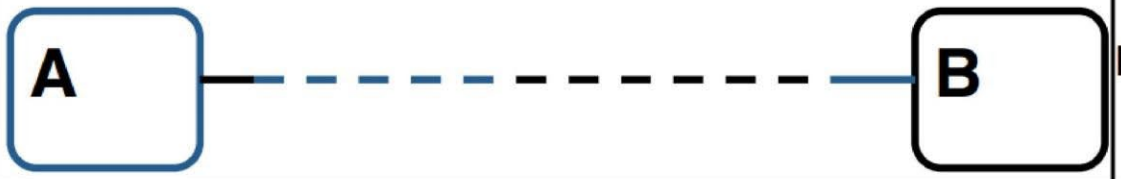
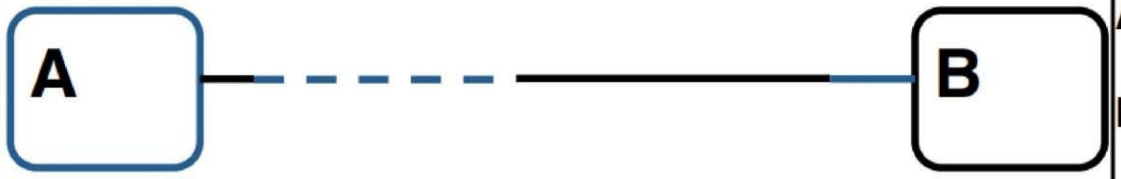
- Cardinality

Relationship (Barker's)

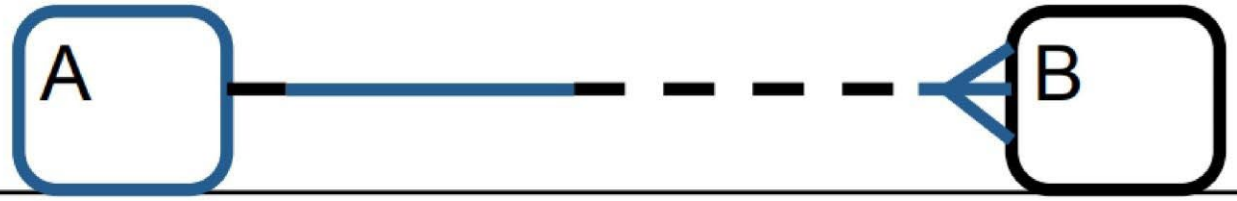
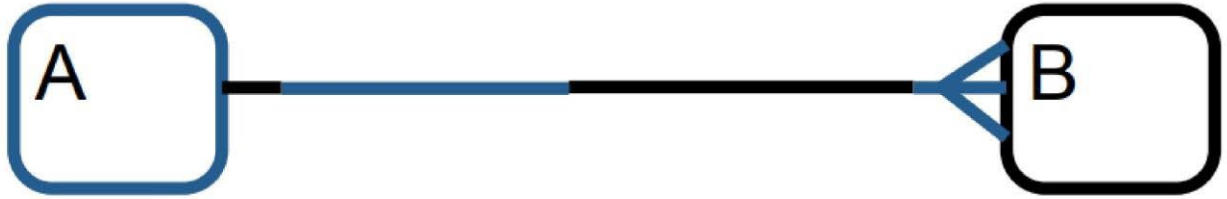
Barker's Notation



Relationship Degree (Barker's)

#	Scenario	Minimum	Maximum
1		A -> B 0 B -> A 0	A -> B 1 B -> A 1
2		A -> B 1 B -> A 0	A -> B 1 B -> A 1
3		A -> B 0 B -> A 1	A -> B 1 B -> A 1
4		A -> B 1 B -> A 1	A -> B 1 B -> A 1

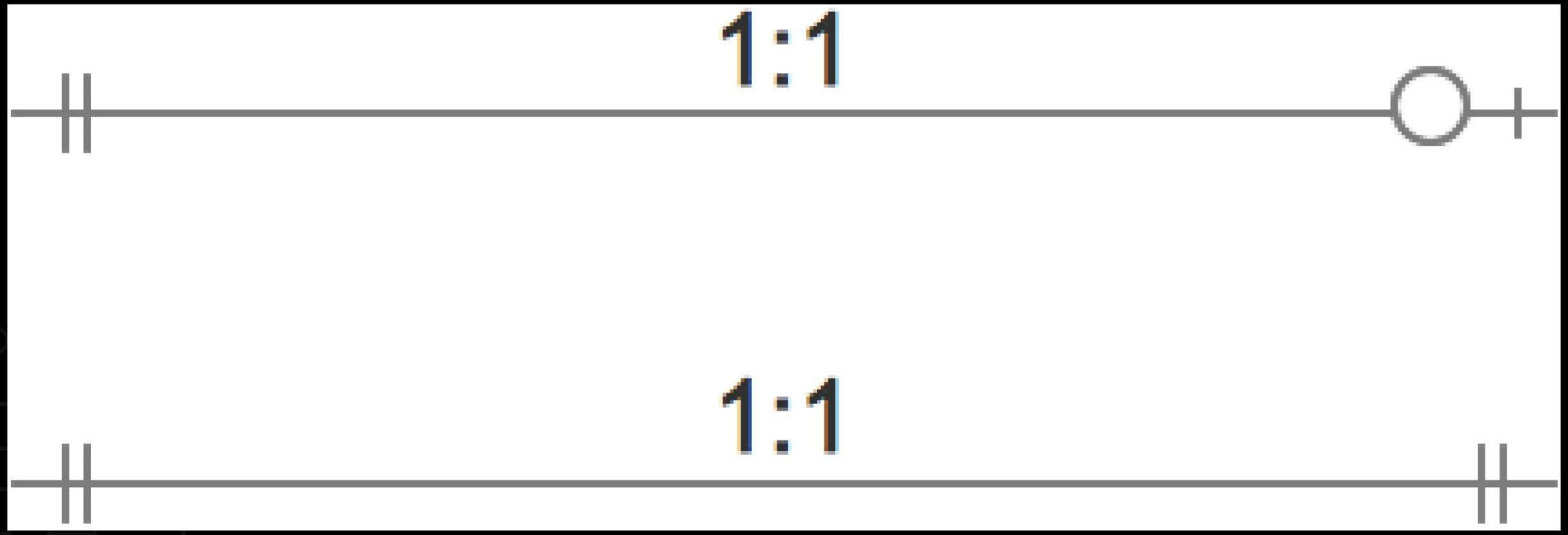
Relationship Degree (Barker's)

#	Scenario	Minimum	Maximum
1		**A -> B** 0 **B -> A** 0	**A -> B** n **B -> A** 1
2		**A -> B** 1 **B -> A** 0	**A -> B** n **B -> A** 1
3		**A -> B** 0 **B -> A** 1	**A -> B** n **B -> A** 1
4		**A -> B** 1 **B -> A** 1	**A -> B** n **B -> A** 1

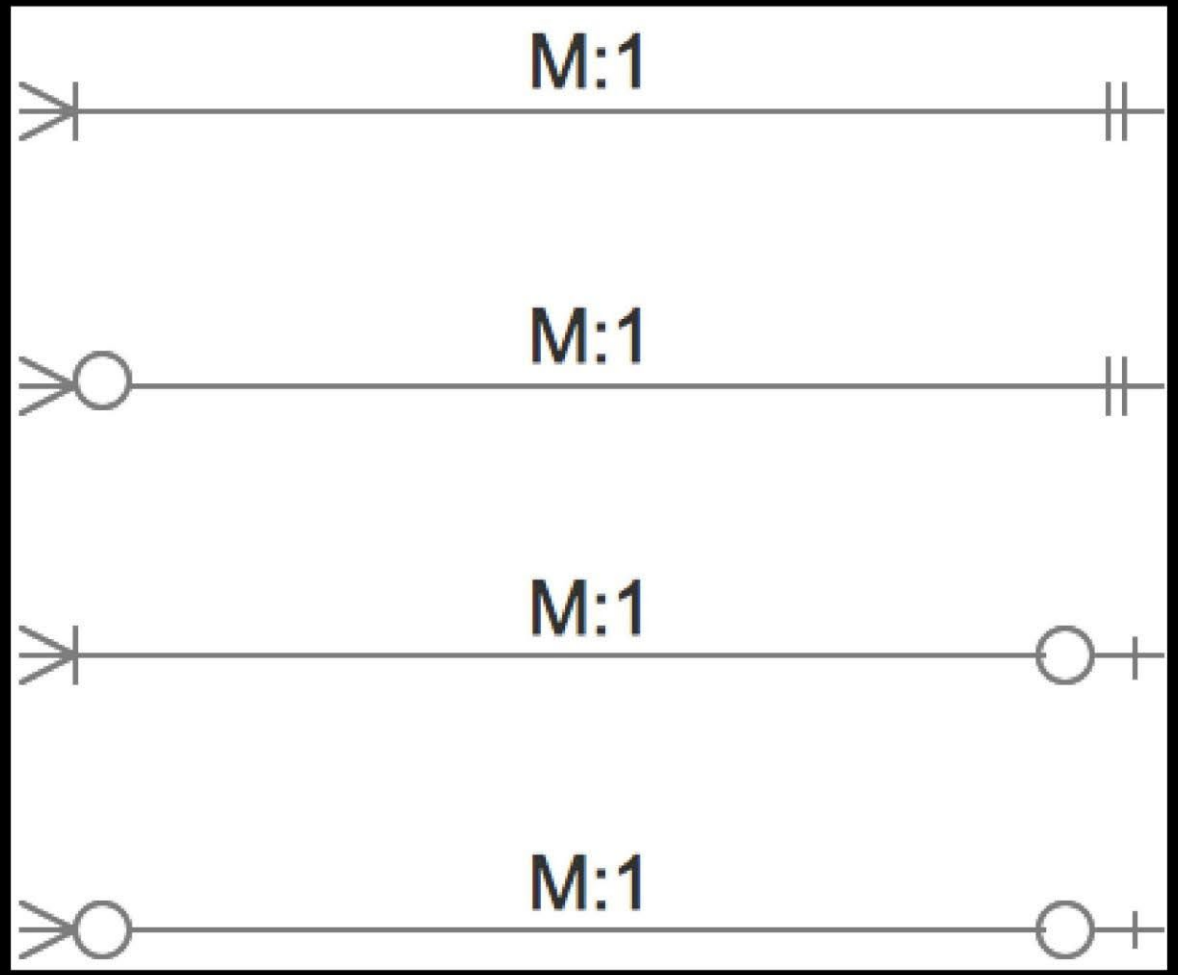
Relationship (Crow's Foot)

- Cardinality and Modality

Relationship Degree (Crow's Foot)



Relationship Degree (Crow's Foot)



Relationship Degree (Crow's Foot)