

ENSF 608 Fall 2021 – Lab 4

Group Questions for Topic 3

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Identify how the left and right columns are related.

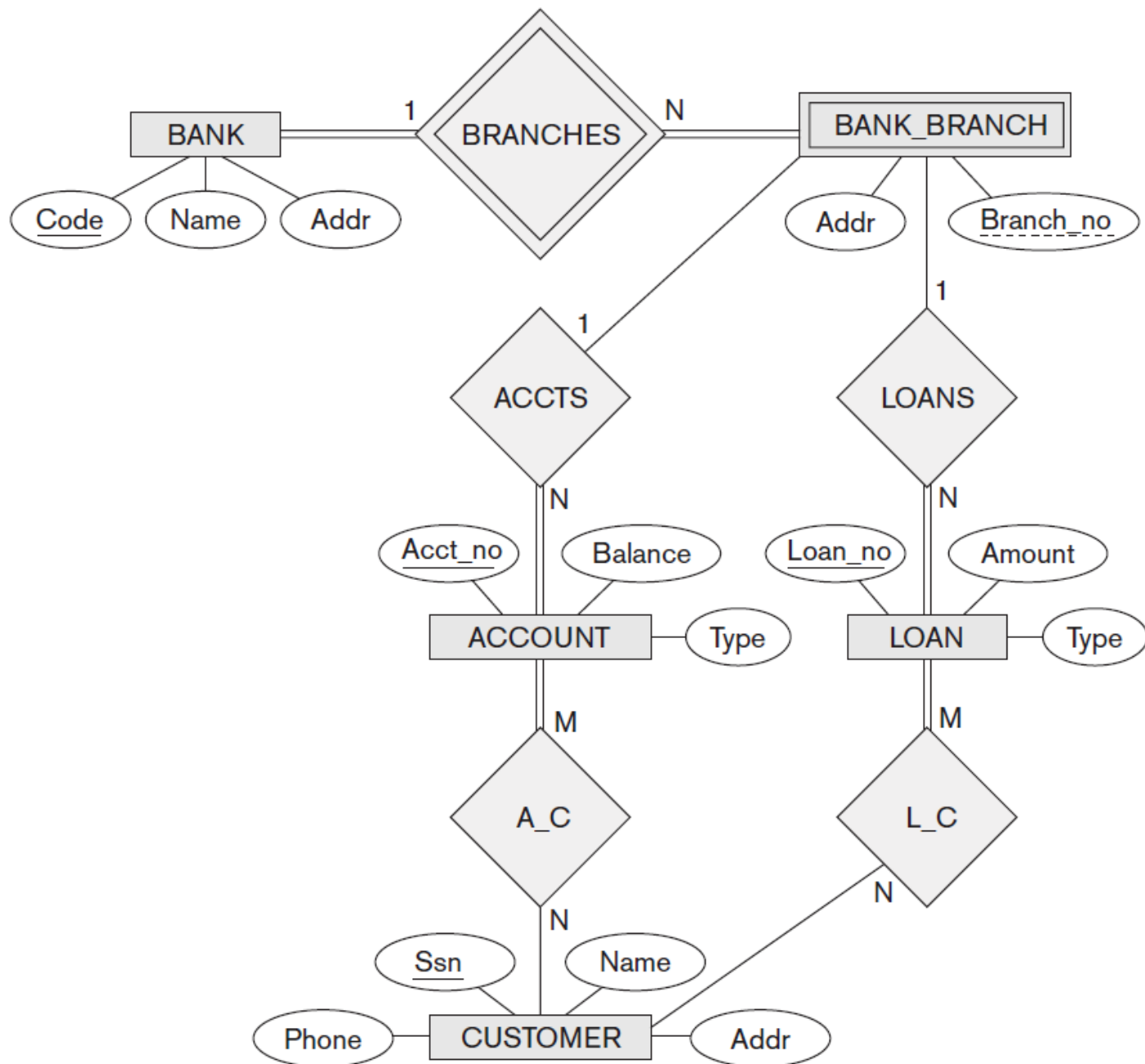
Entity Set	(a) Has a Relationship with	(b) Has an Attribute that is	(c) Is a Specialization of	(d) Is a Generalization of	Entity Set or Attribute
1. MOTHER					PERSON
2. DAUGHTER					MOTHER
3. STUDENT					PERSON
4. STUDENT					Student_id
5. SCHOOL					STUDENT
6. SCHOOL					CLASS_ROOM
7. ANIMAL					HORSE
8. HORSE					Breed
9. HORSE					Age
10. EMPLOYEE					SSN
11. FURNITURE					CHAIR
12. CHAIR					Weight
13. HUMAN					WOMAN
14. SOLDIER					PERSON
15. ENEMY_COMBATANT					PERSON

Suggest cardinality ratios for these binary relationships.

Entity 1	Cardinality Ratio	Entity 2
1. STUDENT	_____	SOCIAL_SECURITY_CARD
2. STUDENT	_____	TEACHER
3. CLASSROOM	_____	WALL
4. COUNTRY	_____	CURRENT_PRESIDENT
5. COURSE	_____	TEXTBOOK
6. ITEM (that can be found in an order)	_____	ORDER
7. STUDENT	_____	CLASS
8. CLASS	_____	INSTRUCTOR
9. INSTRUCTOR	_____	OFFICE
10. EBAY_AUCTION_ITEM	_____	EBAY_BID

For the following ER diagram...

1. Identify any weak entity types. Provide the name, partial key, and identifying relationship.
2. What are the user requirements and constraints specified by this diagram?
3. Suppose that every customer must have at least one account but is restricted to at most two loans at a time, and that a bank branch cannot have more than 1,000 loans. How does this show up on the (min, max) constraints?



Draw an EER diagram for this application.

An art museum has a collection of ART_OBJECTS. Each ART_OBJECT has a unique Id_no, an Artist (if known), a Year (when it was created, if known), a Title, and a Description. The art objects are categorized in several ways, as discussed below.

ART_OBJECTS are categorized based on their type. There are two main types—PAINTING and SCULPTURE—plus another type called OTHER to accommodate objects that do not fall into one of the two main types.

A PAINTING has a Paint_type (oil, watercolor, etc.), material on which it is Drawn_on (paper, canvas, wood, etc.), and Style (modern, abstract, etc.).

A SCULPTURE or a statue has a Material from which it was created (wood, stone, etc.), Height, Weight, and Style. A SCULPTURE may also be a STATUE of a famous figure.

An art object in the OTHER category has a Type (print, photo, etc.) and Style.

ART_OBJECTs are categorized as either PERMANENT_COLLECTION (objects that are owned by the museum) and BORROWED from other COLLECTION. Information captured about objects in the PERMANENT_COLLECTION includes Date_acquired, Status (on display, on loan, or stored), and Cost. Information captured about BORROWED objects includes the Collection from which it was borrowed, Date_borrowed, and Date_returned.

Draw an EER diagram for this application.

Information describing the country or culture of Origin (Italian, Egyptian, American, Indian, and so forth) and Epoch (Renaissance, Modern, Ancient, and so forth) is captured for each ART_OBJECT.

The museum keeps track of ARTIST information, if known: Name, DateBorn (if known), Date_died (if not living), Country_of_origin, Epoch, Main_style, and Description. The Name is assumed to be unique.

Different EXHIBITIONS occur, each having a Name, Start_date, and End_date. EXHIBITIONS are related to all the art objects that were on display during the exhibition.

Information is kept on other COLLECTIONS with which the museum interacts; this information includes Name (unique), Type (museum, personal, etc.), Description, Address, Phone, and current Contact_person.