ENSF 608 Fall 2021 – Lab 4

September 29, 2021
Dr. Emily Marasco

Recording Notice

Classes may be recorded. Recordings will only be uploaded to University approved platforms such as D2L, will only be for use by students and staff associated with the course, and will not be disseminated to a broader audience by the University.

If a student turns on their microphone or camera, or uses the public chat feature, this constitutes consent for the student's video image or sound audio to be uploaded with a recording. If a student wishes to ensure that their questions/faces/voices are not recorded in the video, they should instead use the private chat feature to ask questions.

Goals for Today

- Assignment 1 clarifications/tips
- Go through example questions for Topic 3

Reminder: Assignment #1

- Learning objective: Application of ER and EER modelling concepts
- Individual assignment
- Upload solution to D2L dropbox
- Use specified file naming convention
- Remember to explain any assumptions
- Due **Friday, October 1st at 11:59 PM**
- Dropbox will remain open until October 3rd at 11:59 PM
- No additional extensions

Virtual Office Hours

- 10 minute appointments with myself and/or the TAs
- Sign-up form and Zoom links on D2L
- New form for each week
- Must reserve 30 minutes ahead of **session** start time
- Contact Dr. Marasco for any changes

Clarifications and Tips

- Only need 16 out of 22 attributes- don't try to force them all to fit
- Parents and guardians are the same entity, emergency contacts are not
- Divisions are groupings for grades (i.e. Grades 1 – 3 are Div. 1, Grades 4 – 6 are Div. 2)
- Teachers have a) current grade and b) grades they are capable of teaching
- Teachers lead other teachers, not grades or subjects
- 1:N vs. N:1 depends on how you setup your workspace – read from left to right
- Remember partial key attributes for weak entities
  - Consider cardinality issues (1 : 1 vs. 1 : N)
- Need all parts of a composite attribute in the "leaves"
- Evidence of attribute inheritance = avoidance of duplication
- Don't overthink or add things to the narrative
- Justify assumptions and design decisions- help the TAs give you 100%!
  - e.g. student to teacher cardinality

Topic 3 Examples

- Introduce yourself to your breakout room
- Work as a group on the answer
- Return to the main session for solution
- Repeat for each question

Identify how the left and right columns are related.

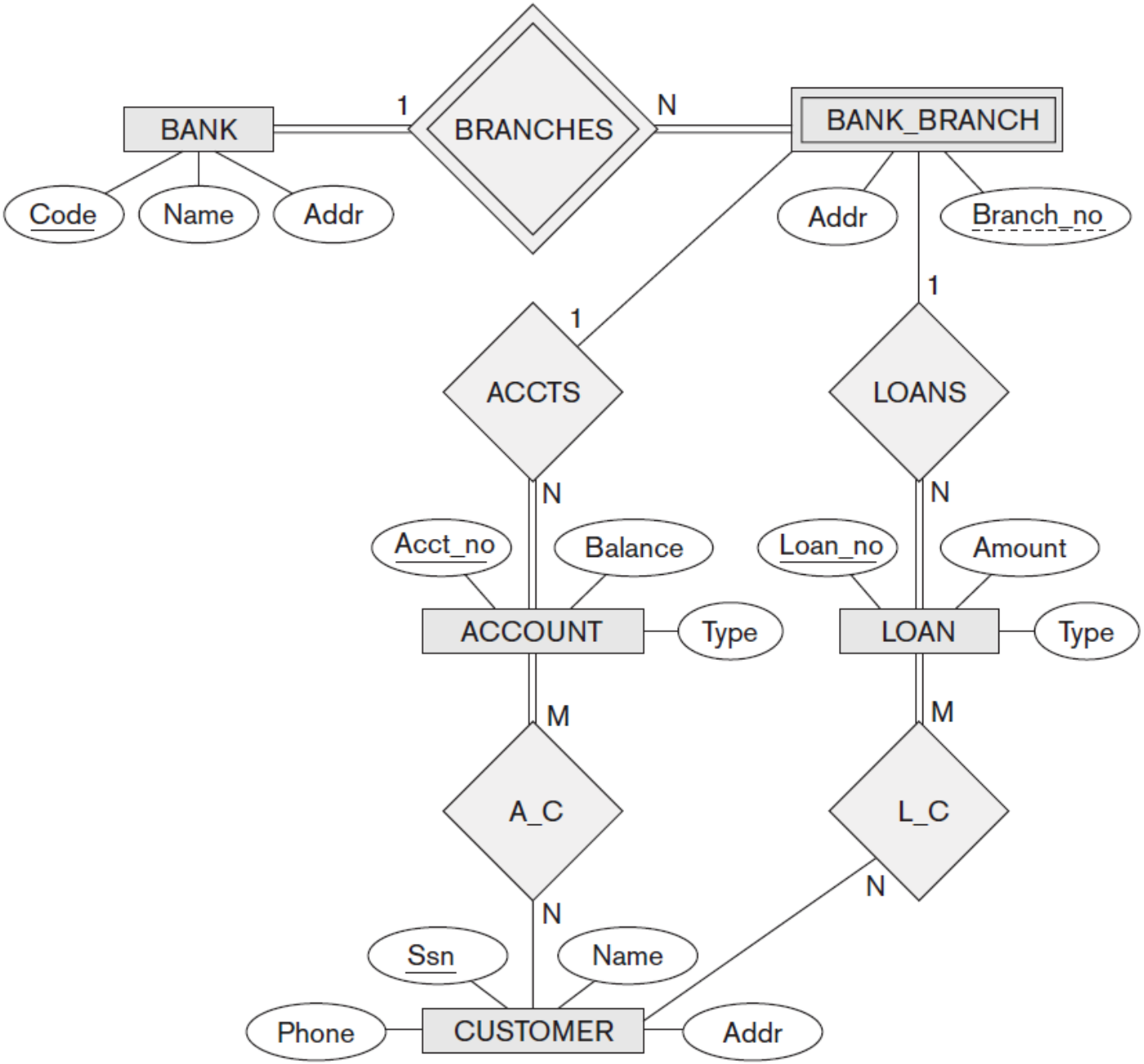
	Entity Set	(a) Has a Relationship with	(b) Has an Attribute that is	(c) Is a Specialization of	(d) Is a Generalization of	Entity Set or Attribute
1.	MOTHER					PERSON
2.	DAUGHTER					MOTHER
3.	STUDENT					PERSON
4.	STUDENT					Student_id
5.	SCHOOL					STUDENT
6.	SCHOOL					CLASS_ROOM
7.	ANIMAL					HORSE
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

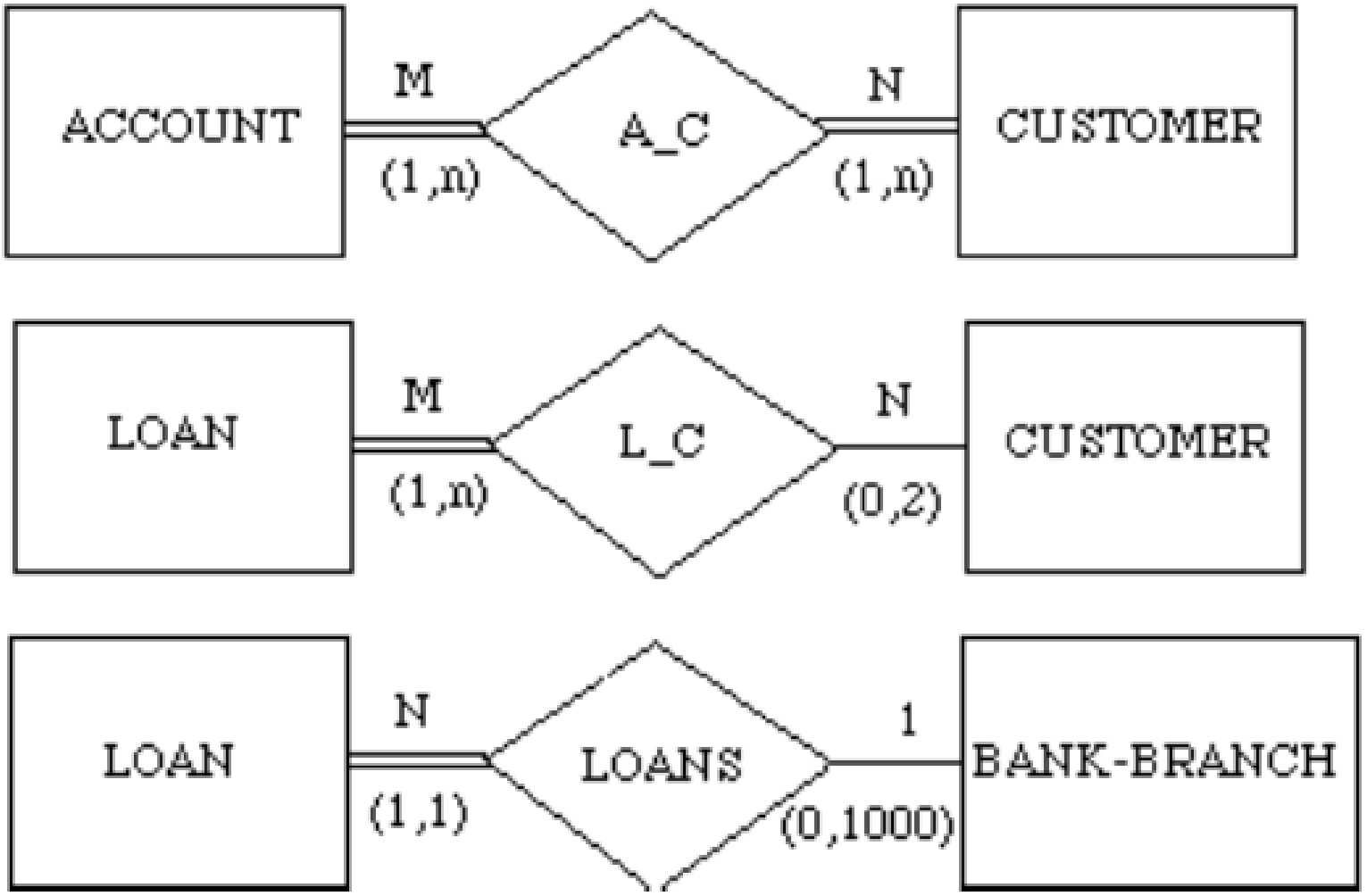
Suggest cardinality ratios for these binary relationships.

	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.

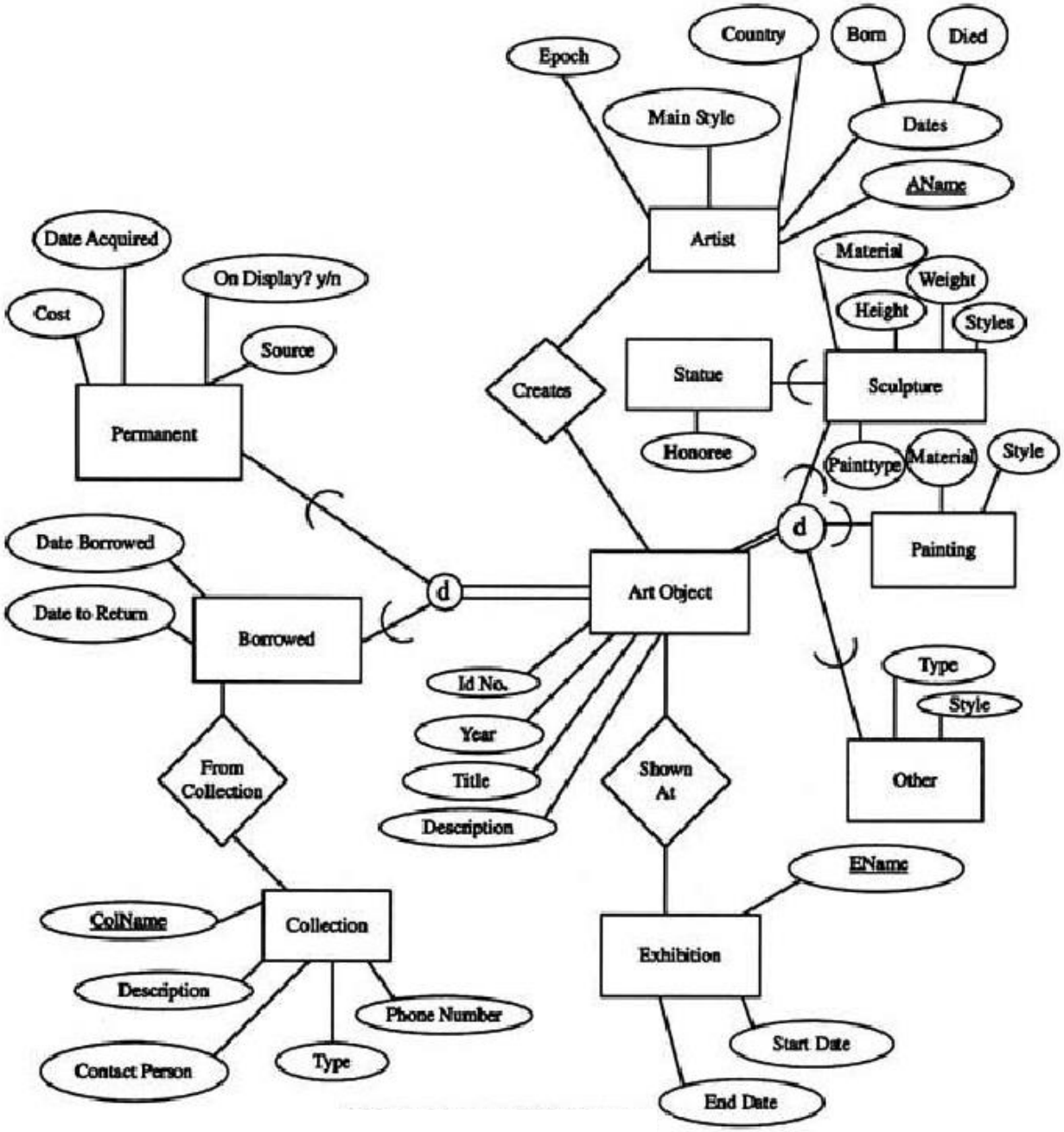
Draw an EER diagram for this application.

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.



This week:

- Keep the conversation going! Please reply on at least one other student's introductory post
- Book any office hours via provided form
- Continue Topic 4 lectures
- **Assignment 1** is due **Friday, October 1st at 11:59 PM**