

ENSF 608 Fall 2021 – Lab 9

November 3, 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

- Review solutions to Quiz 1
- Notes on Assignment 3
- Open question time for term test and Assignment 2

Reminder: Virtual Office Hours

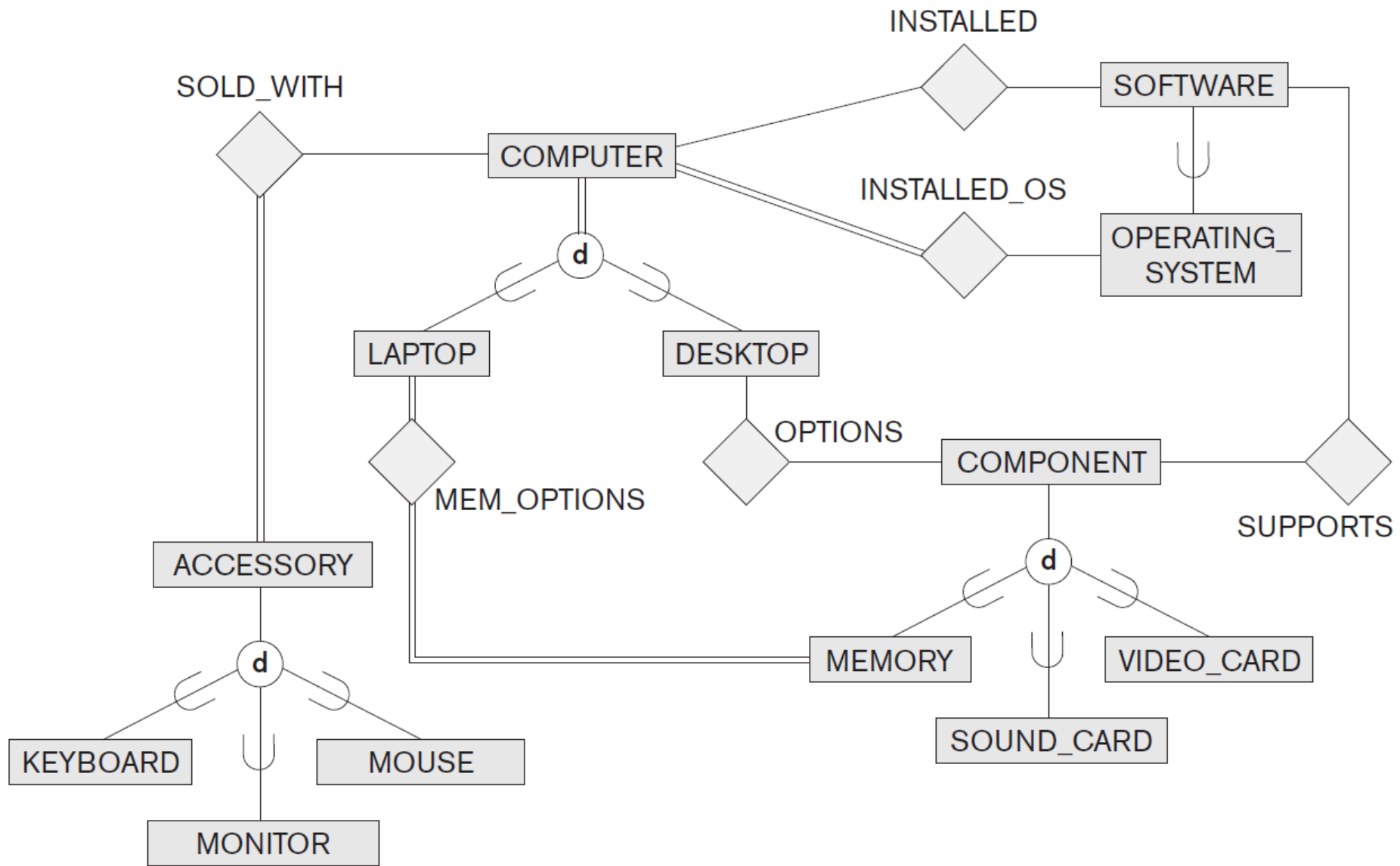
- New form posted on D2L for each week
- 10 minute appointments with myself and the TAs
- Use D2L Zoom links for chosen session
- Must reserve 30 minutes ahead of **session** start time
- Contact Dr. Marasco for any changes

Quiz #1

- Great performance overall
- Grades will be released this afternoon
- View your questions/answers via your submission under Quizzes

For each statement on the right-hand side, match the corresponding relationship, attribute, specialization, or generalization. There is only one correct match for each statement.

➡ <u>4</u>	NEUROLOGIST	1. Is a specialization of ENGINEERING
➡ <u>5</u>	Age	2. Is a generalization of CAT
➡ <u>6</u>	SON	3. Is an attribute of CAT
➡ <u>1</u>	CHEMICAL	4. Is a specialization of DOCTOR
➡ <u>10</u>	StudentID	5. Is an attribute of PERSON
➡ <u>3</u>	Breed	6. Has a relationship with FATHER
➡ <u>8</u>	NumPieces	7. Has a relationship with FACULTY
➡ <u>7</u>	DEAN	8. Is an attribute of CHESS
➡ <u>9</u>	GAME	9. Is a generalization of CHESS
➡ <u>2</u>	MAMMAL	10. Is a key attribute of STUDENT



All computers must have an installed operating system.

- ➡ ☒ True
☐ False

A computer could be a tablet instead of a laptop or desktop.

- ☐ True
➡ ☒ False

A single component could be both a sound card and a video card.

- ☐ True
➡ ☒ False

A laptop may be sold without memory.

- ☐ True
➡ ☒ False

A desktop must have at least one component option.

- ☐ True
➡ ☒ False

Accessories may be sold separately from a computer.

- ☐ True
➡ ☒ False

An operating system is a type of software.

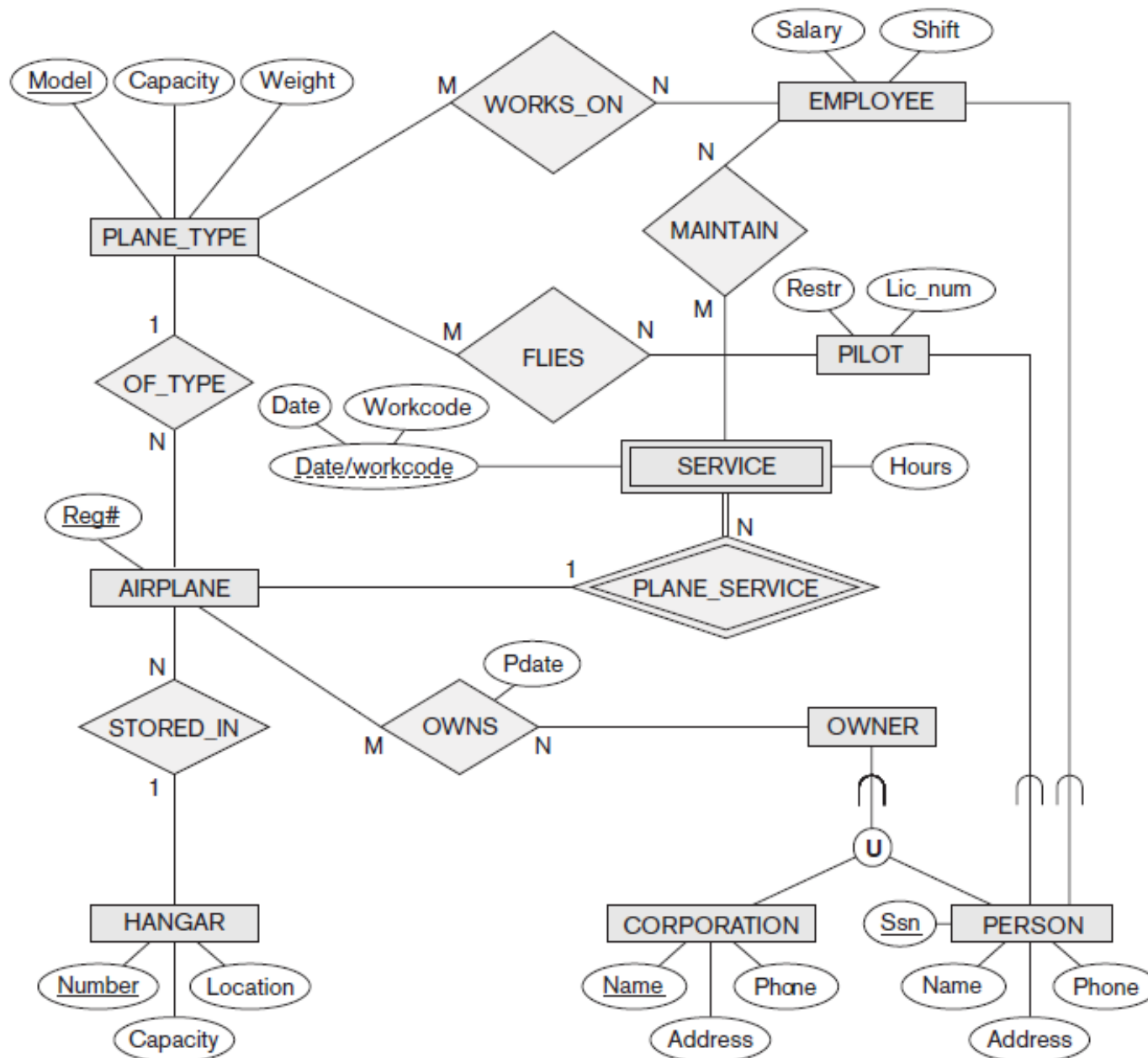
- ➡ ☒ True
☐ False

A computer does not have to have installed software.

- ➡ ☒ True
☐ False

Accessories may be supported by software.

- ☐ True
➡ ☒ False



Which user profile is the **best example** of a potential naïve or parametric user?

➡ ☒ Service reservation agent

☐ Airplane owner

☐ Database administrator

☐ System analyst

Which entity in the diagram is a weak entity type?

☐ OWNER

☐ EMPLOYEE

☐ HANGAR

➡ ☒ SERVICE

Which relationship is an identifying relationship type?

➡ ☒ PLANE_SERVICE

☐ OWNS

☐ MAINTAIN

☐ WORKS_ON

Which statement **best reflects** the cardinality ratio of the STORED_IN relationship?

☐ Each hangar is assigned a single airplane.

➡ ☒ Any number of airplanes can be assigned to a single hangar.

☐ One airplane can be assigned to many hangars.

Based on the diagram, which statement is incorrect?

- ☐ A pilot may fly any number of plane types.
- ☐ An airplane can be owned by a corporation or a person.
- ☐ A person could be an employee and also own an airplane.
- ➔ ☒ An airplane could be more than one type of plane.

Refer to the small airport EER diagram show above. Due to popularity, the airport management team has imposed new restrictions and limitations.

An owner may have no more than 3 airplanes registered at the airport. Even if a previous owner sells all of their planes, they remain in the database.

All hangars are fully assigned and there are always exactly two airplanes in each hangar. Airplanes are not assigned to more than one hangar.

The airport continues to pride itself on employee knowledge. All employees work on at least one type of plane but may be knowledgeable about more types.

Also, due to new safety regulations, each pilot may only fly up to five different plane types. They must be registered to fly at least one type of plane.

Specify the values of the min, max notation for each of the following relationships.

The (min, max) constraint of OWNER participating in OWNS is: (_____ (0) , _____ (3)).

The (min, max) constraint of HANGAR participating in STORED_IN is: (_____ (2) , _____ (2)).

The (min, max) constraint of EMPLOYEE participating in WORKS_ON is: (_____ (1) , _____ (N)).

The (min, max) constraint of PILOT participating in FLIES is: (_____ (1) , _____ (5)).

SALESPERSON

<u>Ssn</u>	Name	Start_year	Dept_no	Salary
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TRIP

<u>Trip_id</u>	Purpose	Ssn	From_city	To_city	Leave_date	Return_date
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EXPENSE

<u>Trip_id</u>	<u>Account#</u>	Amount	Item
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ACCOUNT

<u>Account#</u>	Signatory	Balance
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Which of the following are foreign key(s) within this schema? Select all that apply.

☐ Ssn in SALESPERSON

➔ ☒ Ssn in TRIP

☐ Trip_id in TRIP

➔ ☒ Trip_id in EXPENSE

➔ ☒ Account# in EXPENSE

SALESPERSON

<u>Ssn</u>	Name	Start_year	Dept_no	Salary
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TRIP

<u>Trip_id</u>	Purpose	Ssn	From_city	To_city	Leave_date	Return_date
----------------	---------	-----	-----------	---------	------------	-------------

EXPENSE

<u>Trip_id</u>	<u>Account#</u>	Amount	Item
----------------	-----------------	--------	------

ACCOUNT

<u>Account#</u>	Signatory	Balance
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Which of the following are superkeys within the SALESPERSON relation? Select all that apply.

- ➔ ☒ SALESPERSON(Ssn, Name)
- ☐ SALESPERSON(Name, Dept_no)
- ➔ ☒ SALESPERSON(Ssn, Name, Dept_no)
- ➔ ☒ SALESPERSON(Ssn, Dept_no)
- ☐ SALESPERSON(Name, Salary)

SALESPERSON

<u>Ssn</u>	Name	Start_year	Dept_no	Salary
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TRIP

<u>Trip_id</u>	Purpose	Ssn	From_city	To_city	Leave_date	Return_date
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EXPENSE

<u>Trip_id</u>	<u>Account#</u>	Amount	Item
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ACCOUNT

<u>Account#</u>	Signatory	Balance
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Which of the following could be a relationship attribute?

- ☐ Start_year
- ☐ Dept_no
- ☐ Return_date
- ☐ Balance
- ☐ Trip_id

SALESPERSON

<u>Ssn</u>	Name	Start_year	Dept_no	Salary
------------	------	------------	---------	--------

TRIP

<u>Trip_id</u>	Purpose	Ssn	From_city	To_city	Leave_date	Return_date
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EXPENSE

<u>Trip_id</u>	<u>Account#</u>	Amount	Item
----------------	-----------------	--------	------

ACCOUNT

<u>Account#</u>	Signatory	Balance
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Which of the following could be a weak entity?

☐ SALESPERSON

☐ TRIP

☐ EXPENSE

☐ ACCOUNT

☒ None of the above

SALESPERSON

<u>Ssn</u>	Name	Start_year	Dept_no	Salary
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TRIP

<u>Trip_id</u>	Purpose	Ssn	From_city	To_city	Leave_date	Return_date
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EXPENSE

<u>Trip_id</u>	<u>Account#</u>	Amount	Item
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ACCOUNT

<u>Account#</u>	Signatory	Balance
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Select all of the following statements that are true. You will receive 0.5 marks for each correct decision.

- ➔ ☒ "Item" could be a relationship attribute
- ➔ ☒ The cardinality from SALESPERSON to TRIP is 1-to-N
- ➔ ☒ EXPENSE could be modelled as a relationship between TRIP and ACCOUNT
- ☐ EXPENSE could be modelled as a multi-value attribute of TRIP
- ☐ A salesperson can be deleted from the database without impacting other relations
- ☐ A salesperson can be uniquely identified using their name

Notes on Assignment 3

- Test the .sql file in Workbench ASAP in case of issues
- Answer written questions in the comments
- Query solutions may vary- you are welcome to look up additional techniques for completing queries
- Don't make assumptions about participants
- Use the narrative
- Can use the Toyko 2020 website for quick results verification

Upcoming Deliverables

- Assignment 3 (12%) – Due Nov. 12th, dropbox open until 15th
- Assignment 4 (12%) – Due fourth week of Nov.
- Quiz 2 (10%) – Access Dec. 2nd/3rd
- Assignment 5 (6%) – Due last day of classes
- Joint ENSF 607/608 Project (30%)

This week:

- Keep the conversation going! Share interesting stories on data and databases in the world.
- Complete Assignment 3
- Watch for Topic 6