

Unit 07 Problem Set Submission Form

Overview

Your Name	Jainish Savaliya
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Instructions

Put your name and SU email at the top. Answer these questions all from the lab. When asked to include screenshots, please follow the screen shot guidelines from the first lab.

Remember as you complete the problem sets it is not only about getting it right / correct. We will discuss the answers in class so it's important to articulate anything you would like to contribute to the discussion in your answer:

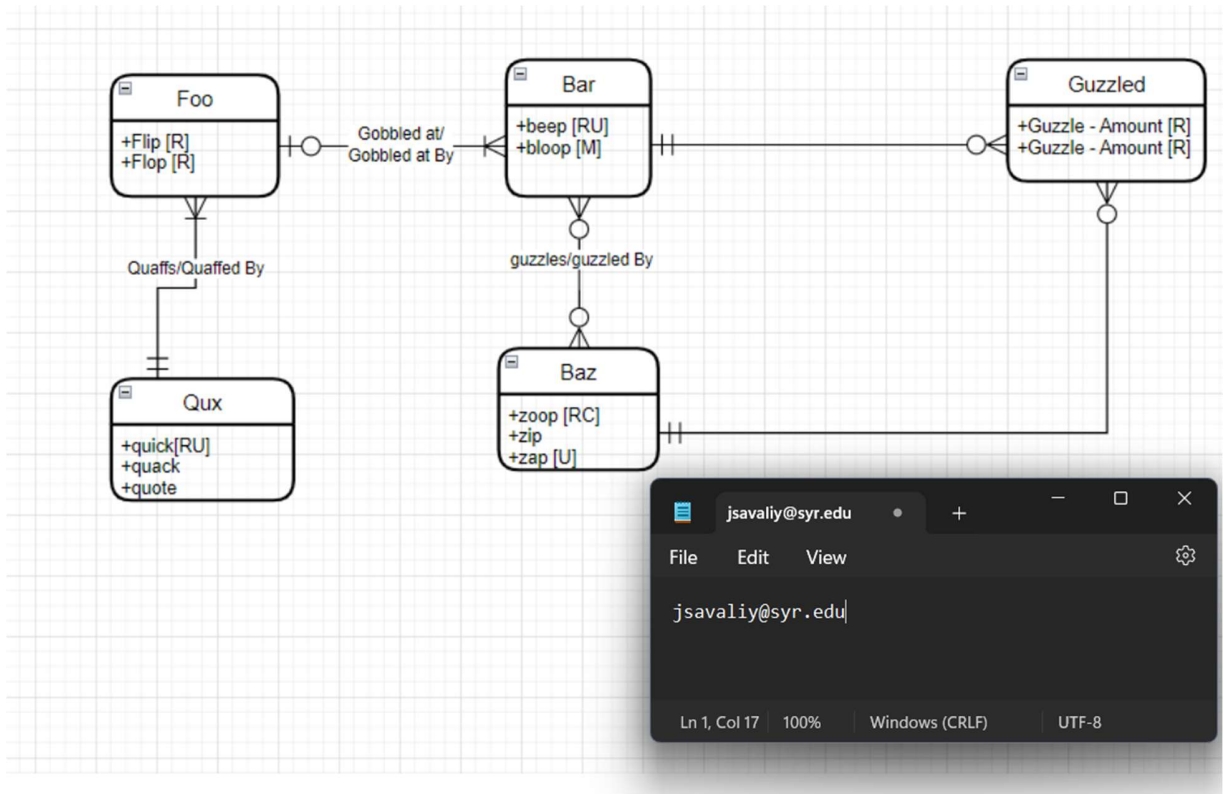
- If you feel the question is vague, include any assumptions you've made.
- If you feel the answer requires interpretation or justification provide it.
- If you do not know the answer to the question, articulate what you tried and how you are stuck.

This how you receive credit for answering questions which might not be correct.

Questions

Answer these questions using the problem set submission template. You will need to provide a screen shot for each answer. Please follow the guidelines for submitting a screenshot.

1. Provide a screenshot of your completed E-R Diagram (ERD) from Walkthrough Part 3.

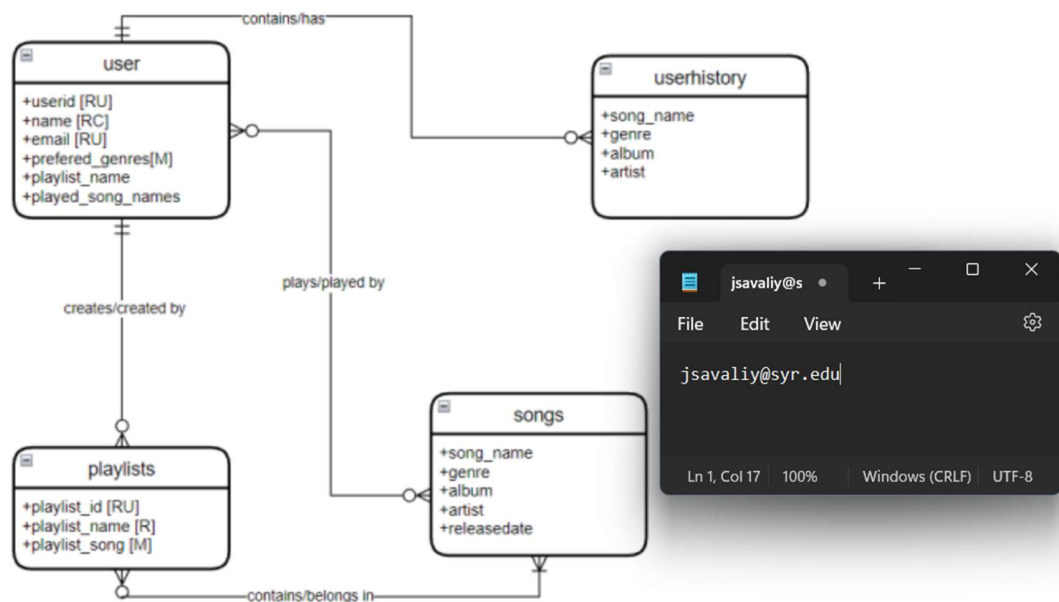


2. Provide a screenshot of your E-R data requirements from Walkthrough Part 4.

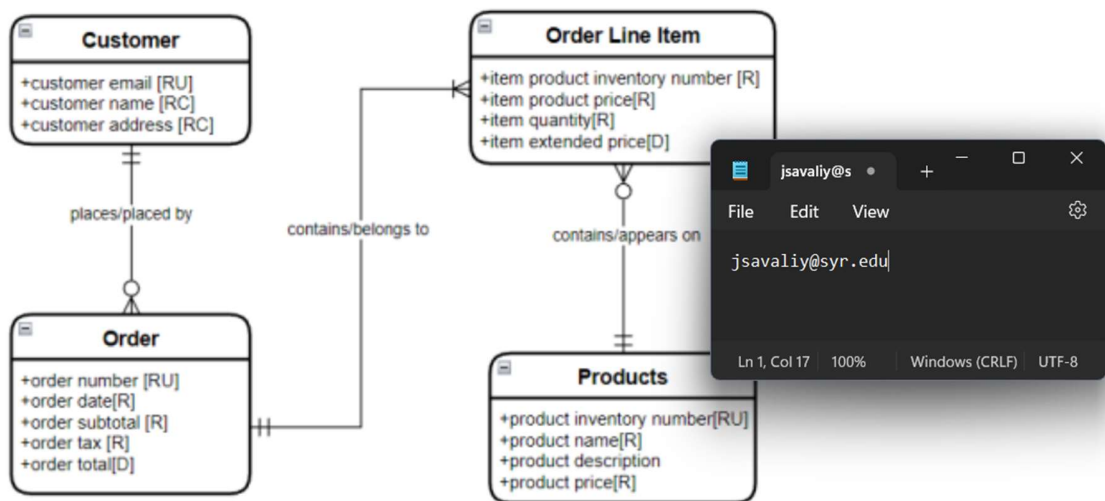
Entities and Attributes				Relationships				
Entity	Attribute	Props	Description	Relationship	Entity	Rule	Min	Max
<u>Song</u>	title	R	name of the song	song-user	<u>Song</u>	played by	0	M
	artist	R	artist of the song		<u>User</u>	plays	0	M
	genre	RM	music genre of the song	user-playlist	<u>User</u>	creates	0	M
	length	R	length of the song		<u>Playlist</u>	created by	1	1
<u>User</u>	name	R	user's name	song-history	<u>Song</u>	falls within	1	M
	email	RU	user's email address		<u>History</u>	contains	0	M
	preferred genre	M	user's list of genres preferred					
<u>Playlist</u>	title	R	name of the song					
	Created Date	R	date when playlist was created					
<u>History</u>	title	R	name of the song					
	artist	R	artist of the song					

A screenshot of a code editor window is overlaid on the bottom right, showing the email address jsavaliy@syr.edu.

3. Provide a screenshot of the E-R Diagram (ERD) Walkthrough Part 4.



4. Draft an ERD from the following requirements. Try not to let your interpretation of the facts get into the way until **after you've drawn the diagram**. Once you have a diagram together, feel free to criticize and comment.
- Entities: customer, order, products, order line item
 - Attributes:
 - Customer: customer email – unique, required, customer name – composite, required, customer address – composite, required.
 - Order: order number – unique, required, order date – required, order subtotal – required, order tax – required, order total – derived
 - Products: product inventory number – required, unique, product name – required, product description, product price – required.
 - Order Line Item: item product inventory number – required, item product price – required, item quantity – required, item extended price – derived.
 - Relationships:
 - A customer places 0 or more orders. An order is placed by 1 and only 1 customer.
 - An order contains 1 or more-line items. A line item belongs to 1 and only 1 order.
 - A line item contains 1 and only 1 product, a product appears on 0 or more-line items
 - Other facts:
 - You cannot have a line item without a product and an order.

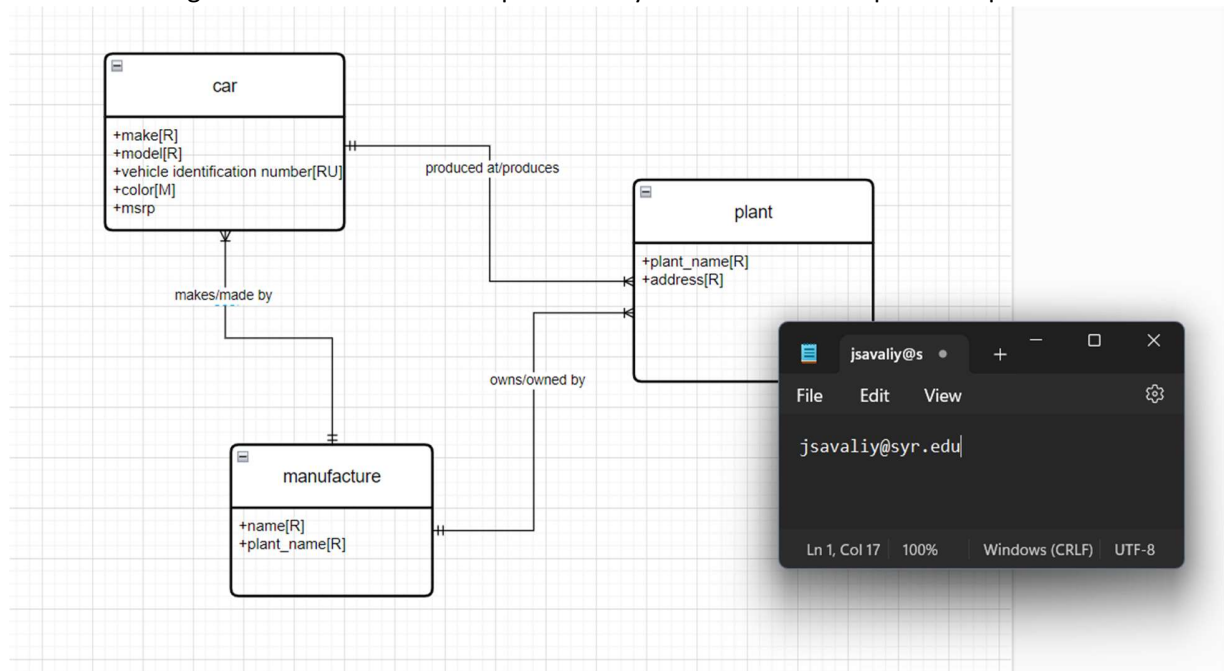


5. In this next example, I give you a list of data requirements, but they are not organized into entities, relationships, and attributes. You may have to make some assumptions to complete E-R Model.
 - a. A car is made by only one manufacturer, but a manufacturer makes a lot of cars.
 - b. A car has a make, model, vehicle identification number (vin), msrp, and color.
 - c. A manufacturer has a name (which is unique and not always the same as the make).
 - d. A manufacturer has several plants where the cars are made. A plant is owned by just one manufacturer.
 - e. A car is produced at just one single plant. And a plan produces several cars.
 - f. A Plant has a name and address.
 - g. Only cars of a certain make are produced at certain plants. For example, plant "A" might produce makes "X", "Y", and "Z", while plant "B" might produce makes "W" and "Z" only.

Use a copy of the **Empty-ER-Data-Requirements** spreadsheet, provided with this lab, to enter your data requirements. Provide a screenshot of your data requirements.

Entities and Attributes				Relationships				
Entity	Attribute	Props	Description	Relationship	Entity	Rule	Min	Max
car	make	R	manufacturer of vehicle	car-manufacturer	car	made by	1	1
	model	R	model name of vehicle		manufacturer	makes	1	M
	vehicle identification number	RU	vin number of vehicle	manufacturer-plant	manufacturer	owns	1	M
	msrp		retail price of car		plant	owned by	1	1
	color	M	color of vehicle	car-plant	car	produced at	1	1
manufacturer	name	RU	name of manufacturer		plant	produces	1	M
	plant_name	R	names of different plants of manufacturer					
plant	plant_name	R	Name of plant					
	address	R	address of plant					

6. Draw an ER Diagram based on the data requirements you identified in the previous question.



7. In this last example, read the following paragraphs, identify the data requirements. Once more use a copy of the **Empty-ER-Data-Requirements** spreadsheet, provided with this lab, to enter your data requirements.

The XYZ consulting firm handles project management for its customers.

Customers have a name, address, phone, and one or more contacts (people who work for the company). Customers interact with XYZ through projects.

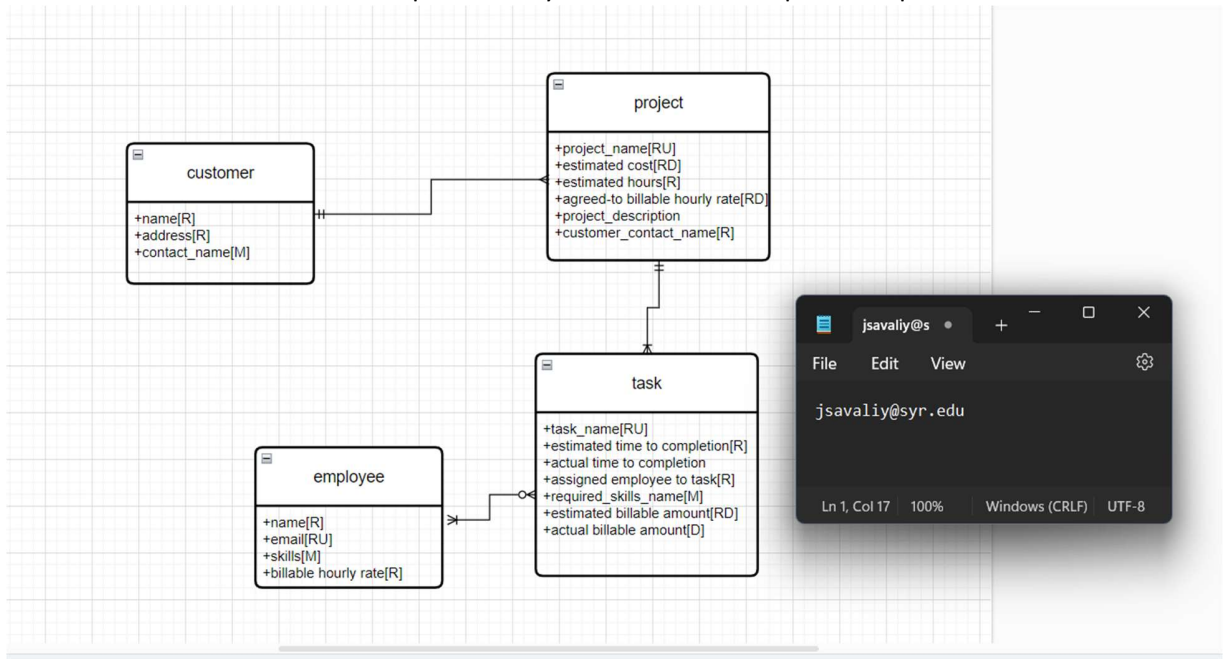
For any project there should be the name of the project the estimated cost, estimated hours, and an agreed-to billable hourly rate. There should also be an optional description for the project. There should be one customer contact assigned to the project.

Each project is broken down into tasks. Tasks have a name, estimated time to completion, actual time to completion, and assigned employee to the task. One employee is assigned to the project as the project manager. Tasks also contain a list of required skills to complete the tasks. An example of those skills might be database, systems admin, project management, web design, or programming to name a few.

XYZ employees have a name, email, set of skills (like the ones in tasks), and billable hourly rate. The estimated and actual billable amounts are derived from the employee's hourly rate and the task's estimated and actual time to completion these values should be stored with the task. Employees can work on more than one task and can be assigned to different tasks at the same time

Entities and Attributes				Relationships				
Entity	Attribute	Props	Description	Relationship	Entity	Rule	Min	Max
<u>Customer</u>	name	R	name of the customer	customer-project	<u>Customer</u>	assigned to	1	M
	address	R	address of the customer		<u>Project</u>	assigned for	1	1
	phone	RU	customer's phone number	employee-project	<u>Employee</u>	assigned to	1	1
	contacts	RM	customer's contacts		<u>Project</u>	was assigned	1	1
<u>Project</u>	name	R	name of project	employee-task	<u>Employee</u>	assigned to	0	M
	estimated cost	R	estimated cost of the project		<u>Task</u>	have	1	1
	estimated hours	R	estimated hours to complete the project					
	hourly rate	R	billable hourly rate					
<u>Task</u>	description		optional description of project					
	name	R	name of task					
	estimated completion time	R	estimated time to complete					
	actual completion time	R	actual time to complete					
<u>Employee</u>	estimated billable amount	RD	estimated amount to be billed based on employee's rate					
	actual billable amount	RD	actual amount to be billed based on employee's rate					
	assigned employee	R	employee assigned to task					
	skills	RM	required skills to complete task					
<u>Employee</u>	name	R	name of employee					
	email	RU	employee's email address					
	skills	RM	employee's set of skills					
	hourly rate	R	employee's hourly rate					

8. Draw an ERD based on the data requirements you identified in the previous question



Reflection

Use this section to reflect on your learning. To achieve the highest grade on the assignment you must be as descriptive and personal as possible with your reflection.

- What are the key things you learned through the process of completing this assignment?
->Learnt about how to make ER diagrams and how to define the relation between two entities in the ER diagram.

2. What were the challenges or roadblocks (if any) you encountered on the way to completing it?
-> This time I did not face that many challenges.
3. Were you prepared for this assignment? What can you do to be better prepared?
-> I watched the video, and I can practice more with the ER diagrams to prepare better.
4. Now that you have completed the assignment rate your comfort level with this week's material. This should be an honest assessment: (choose one)
4 ==> I understand this material and can explain it to others.