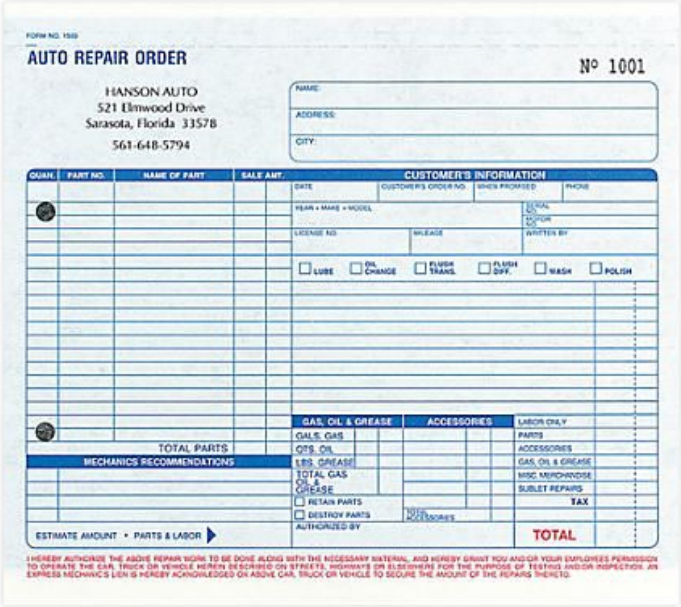
Louie's Auto Repair wants a database to track work orders. Please design a database to meet the needs outlined below:

1. **Work order forms have the following fields:**
   a. Customer Information (see below)
   b. Order Number
   c. Date of Repair
   d. Year, Make, and Model of the vehicle
   e. License Plate Number of the vehicle
   f. Mileage of the vehicle
   g. Estimate Amount
   h. Name of tech who wrote the work order
   i. Checkbox for LUBE
   j. Checkbox for OIL CHANGE
   k. Checkbox for FLUSH TRANSMISSION
   l. Checkbox for FLUSH DIFFERENTIAL
   m. Checkbox for WASH
   n. Checkbox for POLISH
   o. List of parts used and cost for each (quantity, part no, part name, part cost)
   p. Hours of labor and cost per hour
   q. Total cost of all parts (in $$)
   r. Total cost of labor (in $$)
   s. Total cost of all parts and labor (in $$)
   t. Tax Amount (in $$)
   u. Grand Total (in $$)


AUTO REPAIR ORDER

Nº 1001

HANSON AUTO
521 Elmwood Drive
Sarasota, Florida 33578
561-648-5794

NAME
ADDRESS
CITY

QUAN. | PART NO. | NAME OF PART | SALE AMT.

CUSTOMER'S INFORMATION
DATE | CUSTOMER'S ORDER NO. | WHEN PROMISED | PHONE
YEAR + MAKE + MODEL | TOTAL LABOR | TOTAL PARTS
LICENSE NO. | MILEAGE | WRITTEN BY
LUBE | OIL CHANGE | FLUSH TRANS. | FLUSH DIFF. | WASH | POLISH

GAS, OIL & GREASE | ACCESSORIES | LABOR ONLY
GALS. GAS | PARTS
QTS. OIL | ACCESSORIES
LBS. GREASE | GAS, OIL & GREASE
TOTAL GAS OIL & GREASE | MISC. MERCHANDISE
RETAIN PARTS | SUBLET REPAIRS
DESTROY PARTS | TAX
TOTAL ACCESSORIES
AUTHORIZED BY | TOTAL

TOTAL PARTS
MECHANICS RECOMMENDATIONS
ESTIMATE AMOUNT • PARTS & LABOR

I HEREBY AUTHORIZE THE ABOVE REPAIR WORK TO BE DONE ALONG WITH THE NECESSARY MATERIAL AND HEREBY GRANT YOU AND/OR YOUR EMPLOYEES PERMISSION TO OPERATE THE CAR, TRUCK OR VEHICLE HEREIN DESCRIBED ON STREETS, HIGHWAYS OR ELSEWHERE FOR THE PURPOSE OF TESTING AND/OR INSPECTION. AN EXPRESS MECHANIC'S LIEN IS HEREBY ACKNOWLEDGED ON ABOVE CAR, TRUCK OR VEHICLE TO SECURE THE AMOUNT OF THE REPAIRS THERETO.

https://www.officedepot.com/a/products/218291/Work-Order-Forms-Auto-Repair-With/

2. **Each customer must provide a name and phone number.** They may also provide a mailing address and email address, but these are optional.
3. **Each work order belongs to one and only one customer.**
4. **Fields A-H must be filled in when the car is <u>dropped off</u> (when order is inserted)**
5. Fields I-T must be filled in when work on the car is <u>finished</u>

Create an **Entity Relationship Diagram (ERD)** of your database design either on paper or digitally. Include tables for **[Customers]**, **[Orders],** and **[Parts].**

_____ / 20 pts

- ❏ All data described above is captured in the database
- ❏ [Customers] table created with appropriate columns and data types
- ❏ [Orders] table created with appropriate columns and data types
- ❏ [Parts] table created with appropriate columns and data types
- ❏ Relationships between tables are clearly and correctly illustrated using crow's foot notation

Write a schema definition for each table in SQL. Submit all of your schema definitions as a single script to git under **labs/UNIT_03_LAB/WorkOrders/Schema.sql**

_____ / 30 pts

- ❏ All data described above is captured in the database
- ❏ All fields that are listed as required above are required in the database
- ❏ All fields that are listed as optional above are optional in the database
- ❏ [Customers] table created with appropriate columns and data types
- ❏ [Orders] table created with appropriate columns and data types
- ❏ [Parts] table created with appropriate columns and data types
- ❏ Foreign key created for [Orders] -> [Customers]
- ❏ Foreign key created for [Parts] -> [Orders]

Once you have created the necessary tables above. Write out SQL SELECT statements to answer the following questions. Submit your SQL queries as a single script to git under **labs/UNIT_03_LAB/WorkOrders/Queries.sql**

Label each query with a comment.

1. List the order number, date of repair, and tech for all orders, sorted by order number descending. **_____ / 8pts**

2. List the part number, part name, quantity, and price for all parts in order number 37, sorted by part number ascending. **_____ / 8pts**

3. List the order number, date of repair, tech, and grand total for orders with a grand total of more than $1000, sorted by grand total descending. **_____ / 5pts**

4. List the order number, date of repair, tech, and grand total for all orders placed by customer 153, sorted by order number ascending. **_____ / 5pts**

5. List the customer number, full name, and phone number for customers whose first name begins with the letter "K", sorted by first name and last name. **_____ / 5pts**

6. How many orders has tech "Jimmy Threehands" worked on? **_____ / 5pts**

7. How many orders where more than $1000? **_____ / 5pts**

8. How many of the orders that "Jimmy Threehands" worked on where more than $1000? _____ / **5pts**

9. Display the order number, date of repair, tech, and grand total for **only** the most expensive order in the database. _____ / **2pts**

10. Display the order number, date of repair, tech, and grand total for **only** the least expensive order in the database. _____ / **2pts**