Assignment 2 – Computer Services Database

Summary

Create a database representing customer interaction for a computer services company. Create the conceptual design for the database using an Entity Relationship Diagram (ERD). You may use either PowerPoint to make a Chen style ERD or LucidChart.com (Sign up for free Education account using your umuc.edu email address) to make a Crow Foot ERD. Your conceptual design should have no Many-to-Many relationships, instead replacing each with Associative Entities and all relationships must be One-to-Many. Your conceptual design must have the same number of Entities or Associative Entities as Database tables in this assignment. Connect your Entities and Associative Entities with One-to-Many relationships.

Procedure to create the Physical Database in a DBMS

1. Create a blank database and save with filename: **`CompServices-YourName`**
2. Create a table in **Design View** and name it **`Labor`** with the following structure

Field Name	Field Type	Field Size	Required	Primary Key
Labor-ID	Text	1	Yes	Yes
Hourly-Rate	Currency	Decimal Places = 2	Yes	

3. Insert the following records into the Table named **Labor**

Labor-ID	Hourly-Rate
A	$35.00
B	$45.00
C	$55.00
D	$65.00

4. Create a table in **Design View** and name it **Customer** with the following structure

Field Name	Field Type	Field Size	Required	Primary Key
Cust-ID	Text	4	Yes	Yes
Cust-Last	Text	15	Yes	
Cust-First	Text	15	Yes	
Cust-Address	Text	30	Yes	
Cust-City	Text	20	Yes	
Cust-State	Text	2	Yes	

5. Insert the following records into the Table named **Customer**

Cust-ID	Cust-Last	Cust-First	Cust-Address	Cust-City	Cust-State
1456	Jones	Albert	43 Oak Drive	Spokane	WA
1933	Valdez	Trini	1011 Hilltop Road	Charlotte	NC
2836	Gonzalez	Juan	678 8th Street	Seattle	WA
6321	Belli	Mary	101 Main Street	San Jacinto	CA
8760	Sansome	Jackie	9 Blueberry Street	Tacoma	WA
8848	McSorely	John	321 Smith Lane	Hudson	FL

6. Create a table in **Design View** and name it **Service-Labor** with the following structure:

Field Name	Field Type	Field Size	Required	Primary Key
Service-ID	Text	5	Yes	Yes
Labor-ID	Text	1	Yes	Yes
Labor-Hours	Number	Decimal Precision = 4 Fixed, Scale = 2 Decimal Places = 2	Yes	

7. Insert the following records into the Table named **Service-Labor**

Service-ID	Labor-ID	Labor-Hours
10796	A	1.5
10796	C	2.0
10798	B	5.0
10799	C	1.5
10799	D	1.5
10801	A	2.5

8. Create in Design View, a Table, and name it **Service-Parts**

Field Name	Field Type	Field Size	Required	Primary Key
Service-ID	Text	5	Yes	Yes
Part-ID	Text	7	Yes	Yes
Qty	Number	Integer	Yes	

9. Insert the following records into the Table named **Service-Parts**

Service-ID	Part-ID	Qty
10796	DD-9192	4
10796	SS-1111	2
10797	AB-6784	6
10799	AB-6784	1
10799	YY-9651	15
10800	SS-1024	8
10801	XC-3133	12

10. Create in Design View, a Table, and name it **Service**

Field Name	Field Type	Field Size	Required	Primary Key
Service-ID	Text	5	Yes	Yes
Cust-ID	Text	4	No	
Service-Date	Date/Time		Yes	
Tech-ID	Text	2	No	

11. Insert the following records into the Table named **Service**

Service-ID	Cust-ID	Date	Tech-ID
10796	1456	12/10/2017	04
10797	2836	12/10/2017	17
10798	8848	12/12/2017	21
10799	1456	1/10/2018	04
10800	6321	1/17/2018	21
10801	1456	1/20/2018	09

12. Create in Design View, a Table, and name it **Technician**

Field Name	Field Type	Field Size	Required	Primary Key
Tech-ID	Text	2	Yes	Yes
Tech-Last	Text	15	Yes	
Tech-First	Text	15	Yes	
Hire-Date	Date/Time		No	

13. Insert the following records into the Table, named **Technician**

Tech-ID	Tech-Last	Tech-First	Hire-Date
04	Robinson	Gerry	6/1/1999
09	Whitfield	David	8/1/2007
17	Kaplan	Carl	1/1/2009
20	Chou	Leland	12/1/2012
21	Johnson	Marie	2/1/2014

14. Create in Design View, a Table, and name it **Part**

Field Name	Field Type	Field Size	Required	Primary Key
Part-ID	Text	7	Yes	Yes
Part-Desc	Text	15	Yes	
Cost	Currency	Decimal Places = 2	Yes	
Price	Currency	Decimal Places = 2	Yes	
In-Stock-Qty	Number	Long Integer	Yes	

15. Insert the following records into the Table, named **Parts**

Part-ID	Part-Desc	Cost	Price	In-Stock-Qty
AB-6784	Meter	$98.50	$125.00	33
DD-9192	Disc	$1.30	$1.69	220
SS-1024	Cover	$16.00	$19.79	78
SS-1099	Emblem	$38.00	$50.00	41
SS-1111	Jumper	$12.50	$15.00	3
XC-3133	Cable	$6.75	$7.99	77
YY-9651	Pin	$0.99	$1.25	1056

16. Using your ERD conceptual model apply it to your Physical Model DBMS by creating the relationships that connect tables using Primary Keys to Foreign Keys. Select Enforce Referential Integrity for all relationships. If you don't see the 1-∞ for the relationships then check entered values for errors. Also upload your ERD to LEO.

17. Forms display one record. Create a simple Form for Customers table using the Form Wizard. Click the Add New Record selector in the form and add yourself as a new customer with Cust-ID = 9000 and filling in all fields.

18. Reports display all records for a Table or Query. Create a simple Report for Customers table using the Report Wizard. Save this Report as a PDF file named **`Customers.pdf`**. You will upload this file to LEO in the Assignment 2 folder.

19. Modify the following two tables in datasheet view by adding one record for your service call.
    - Table = Service: Service-ID=10811, Cust-ID=9000, Service-Date=(use today's date), Tech-ID=21
    - Table = Service-Labor: Service-ID=10811, Labor-ID=D, Labor-Hours=4.5

20. Create the Query in Design view that displays all customers who received service on or after 1/1/2018, name the query **2018 Customers.** This query will use Table = Customer, and Table = Service. Make sure the tables are properly linked primary key to foreign key. Fields in the query will be: Cust-Last and Cust-First from Customer table, and Service-Date from Service table. In the criteria for Service-Date, enter >=1/1/2018. Run the query and save as a PDF file named **`2018 Customers.pdf`**. You will upload this file to LEO in the Assignment 2 folder.

21. Create the Query in Design view that displays all Service calls on which technician Marie Johnson put in more than two hours of labor, and name it **Tech-Report**. This query will use the linked tables: Technician, Service, Customer, and Service-Labor. Select fields from table=Technician: Tech-Last, Tech-First. Select fields from table=Service: Service-Date. Select fields from table=Service-Labor: Labor-Hours. Select fields from table=Customer: Cust-Last, Cust-First.
    The criteria for the query Labor-Hours >2 and in the column Tech-Last =Johnson. Run the query and save results as a PDF file named **`CustomersTech-Report.pdf`**. You will upload this file to LEO in assignment folder.

22. Create the Query in Design view that displays the number and description of all parts sold to customers who live in Washington, name it **Parts Sold in WA.** This query will use tables: Customer, Service, Service-Parts, and Part. Select fields from table=Customer: Cust-First, Cust-Last, Cust-State. Select fields from table=Parts: Part-Desc, Part-ID. Select fields from table=Service-Parts: Qty.
    The criteria for the query Cust-State =WA. Run the query and save results as a PDF file named **`Parts Sold in WA.pdf`**. You will upload this file to LEO in assignment folder.

Upload your **CompServices-*YourName*.accdb** or **CompServices-*YourName*.odb**, your final ERD file and the four PDF files described above in the Assignment 2 folder on LEO.

Congratulations! You did a lot in this database assignment and should feel more confident working with databases.

