

CASE 1

PRELIMINARY CASE: THE HENS FOR HIRE DATABASE

Setting Up a Relational Database to Create Tables, Forms, Queries, and Reports

PREVIEW

In this case, you will create a relational database for a chicken and coop rental service. First, you will create four tables and populate them with data. Next, you will create a form and subform for recording orders for coops, feed, and chickens. You will create five queries: a select query, a parameter query, an update query, a totals query, and a query used as the basis for a report. Finally, you will create the report from the fifth query.

PREPARATION

- Before attempting this case, you should have some experience using Microsoft Access.
- Complete any part of Tutorial B that your instructor assigns, or refer to the tutorial as necessary.

BACKGROUND

The sharing economy is popular now. Without the cost or risk of ownership, many consumers rent or borrow cars, apartments, and other items. This concept now extends to renting a farm experience, wholesome eating, and pets. Combining these three trends, you and your roommate (an agriculture science major) have started a business that rents chickens, coops, and feed for six-month periods. Your customers can try out the experience of having chickens that lay eggs during the spring and summer without having to invest in a coop and raise hens from chicks. The name of the business is Hens for Hire.

Here is how the business will work: Customers order their hens, chicken coop, and feed, which comes in either a one-month or six-month supply. Included in the coop rental are two chickens of the customer's choice. These hens are mature chickens in the prime of their egg-laying lives. The business serves local clients only because the chicken coop and hens must be delivered and the coop must be set up for each customer. Deliveries take place in early spring; the coops and chickens will be collected in early autumn and housed at your parents' small farm. You suggest creating an Access database to track and record all ordering for your small business. You have experience using the program from your information systems coursework.

Your first tasks are to design the database, create the tables, and populate them with current data. You have decided to begin in a simple fashion, so your database design includes only four tables, as shown in Figures 1-1, 1-2, 1-3, and 1-4:

- Customers, which maintains records for each customer, including their delivery address, telephone number, and birthdate. (You are interested in customers' ages because you hope to attract young farmers.)
- Items, which includes information about the coop for rental, two types of feed (a six-month supply or one-month supply), and choices of different chickens and the colors of eggs they lay. The table includes the price of each item and the type of each item. (Chickens are included in the coop rental, and therefore are not charged as a distinct item.)
- Orders, which maintains records for each customer's ID number, the date each order was placed, and the date it was delivered.
- Order Line Item, which shows the items in each order. Every order includes a coop, some sort of feed, and two chickens.

After the database tables are complete and populated with data, you want to computerize several common tasks. First, you need a streamlined way to know what orders are being placed and the contents of each order. You recognize that a form and subform would be ideal for recording information about orders.

You and your roommate are hoping to attract a young group of renters who are interested in having chickens and fresh eggs; promoting a healthy, wholesome diet; and having a fun set of pets for the summer months. You would like to compile a list of all customers who are under 30 years old in order to direct your advertising properly. A query will easily answer that question.

Customers who are interested in renting hens like to know what kind of eggs a specific breed of chicken will produce. On your Web site, you will advertise that customers can rent chickens that lay several different colors of eggs. You think a query that lists all requests for specific types of chickens and egg colors would be a perfect tool for answering customers' questions.

You anticipate that the price of the organic chicken feed you supply will increase in the near future. You know you can easily increase prices in the database with an update query. Because you will need this capability soon, you want to practice creating an update query now.

As a business major, you want to know which chickens are the most popular to your customers. You can create a query that lists all chicken breeds available for rent and how many of each you have rented this season. This information will be important for future planning purposes.

Finally, the two of you would like a comprehensive order report that lists each customer, what they ordered, and how much money they paid for your services. You decide that the best solution is to use a query that feeds into the report.

ASSIGNMENT 1: CREATING TABLES

Use Microsoft Access to create tables that contain the fields shown in Figures 1-1 through 1-4; you learned about these tables in the Background section. Populate the database tables as shown. Add your name to the Customers table with a fictitious ID number; complete the entry by adding your address, phone number, and birthday. Order yourself a chicken coop, a six-month supply of feed, and two chickens of your choice.

This database contains the following four tables:

Customer ID	Last Name	First Name	Street Address	City	State	Zip	Phone	Date of Birth	Click to Add
501	Almquist	Antonia	406 Gypsy Hill Road	Longview	WA	98632	425-268-0123	9/1/1989	
502	Hudson	Bruce	23 Sycamore	Bellingham	WA	98225	253-287-6675	4/2/1995	
503	McFarland	Katie	25 Stephen Ct	Anacortes	WA	98221	206-737-0092	5/2/1987	
504	Mattias	Rich	509 Junction Ave	Seattle	WA	98101	206-998-3421	11/15/1986	
505	Lindvall	Dana	3 Amherst Dr	Seattle	WA	98101	206-738-2231	12/30/1985	
506	Pittaway	Craig	2 Versailles Ct	Bainbridge Isla	WA	98110	253-986-3652	12/7/1995	
507	Moore	Steven	323 Glen Road	Camas	WA	98607	425-876-5532	7/12/1965	
508	Dawson	James	76 North East Lane	Longview	WA	98632	425-998-3321	5/25/1983	
509	Greene	Lauren	67 Main Street	Seattle	WA	98101	206-737-0099	8/14/1980	
510	Searling	Joey	9 Elm Road	Seattle	WA	98101	206-738-1231	12/14/1986	

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FIGURE 1-1 The Customers table

Item ID	Item Name	Description	Price	Type	Click to Add
901	Ameraucanas	blue eggs	\$0.00	chicken	
902	Marans	brown eggs	\$0.00	chicken	
903	Welsummer	speckled eggs	\$0.00	chicken	
904	Rhode Island Red	brown eggs	\$0.00	chicken	
905	Buff Orpington	tan eggs	\$0.00	chicken	
906	Isbar	green eggs	\$0.00	chicken	
907	Araucanas	blue eggs	\$0.00	chicken	
908	Coop - 6 months	With run for two	\$200.00	coop	
909	Feed - 6 months	Organic with omega 3	\$50.00	feed	
910	Feed - 1 month	Organic with omega 3	\$10.00	feed	
			\$0.00		

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FIGURE 1-2 The Items table

Orders				
Order ID	Customer ID	Date Ordered	Date Delivered	Click to Add
480	501	2/1/2017	4/1/2017	
481	502	3/15/2017	4/3/2017	
482	503	2/26/2017	4/10/2017	
483	504	3/18/2017	4/3/2017	
484	505	3/31/2017	4/20/2017	
485	506	2/10/2017	3/31/2017	
486	507	2/3/2017	4/3/2017	
487	508	3/2/2017	4/10/2017	
488	509	1/31/2017	3/30/2017	
489	510	3/1/2017	4/16/2017	
*				

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FIGURE 1-3 The Orders table

Order Line Item			
Order ID	Item ID	Quantity	Click to Add
480	901	2	
480	908	1	
480	909	1	
481	902	2	
481	908	1	
481	910	2	
482	905	2	
482	908	1	
482	909	1	
483	904	2	
483	908	1	
483	909	1	
484	906	1	
484	907	1	
484	908	1	
484	909	1	
485	903	2	
485	908	1	
485	910	1	
486	901	2	
486	908	1	
486	909	1	
487	904	2	
487	908	1	
487	909	1	
488	904	1	
488	905	1	
488	908	1	
488	910	3	
489	906	1	
489	907	1	
489	908	1	
489	909	1	
*			

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FIGURE 1-4 The Order Line Item table

ASSIGNMENT 2: CREATING A FORM, QUERIES, AND A REPORT

Assignment 2A: Creating a Form

Create a form for easy recording of orders and the specific items within those orders. The main form should be based on the Orders table and the subform should include the fields from the Order Line Item table. Save the form as Orders. View one record; if required by your instructor, print the record. Your output should resemble that shown in Figure 1-5.

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FIGURE 1-5 The Orders form with subform

Assignment 2B: Creating a Select Query

Create a query to list all customers who are under 30 years old. Include columns that display the Last Name, First Name, Street Address, City, State, and Zip. Save the query as Customers Under 30. Your output should resemble that shown in Figure 1-6, but the data may vary. Print the output if desired.

Customers Under 30					
Last Name	First Name	Street Address	City	State	Zip
Almqvist	Antonia	406 Gypsy Hill Road	Longview	WA	98632
Hudson	Bruce	23 Sycamore	Bellingham	WA	98225
McFarland	Katie	25 Stephen Ct	Anacortes	WA	98221
Mattias	Rich	509 Junction Ave	Seattle	WA	98101
Pittaway	Craig	2 Versailles Ct	Bainbridge Island	WA	98110
Searling	Joey	9 Elm Road	Seattle	WA	98101
*					

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FIGURE 1-6 Customers Under 30 query

Assignment 2C: Creating a Parameter Query

Create a parameter query that prompts for a specific chicken breed and then lists the color of egg laid by that breed. The query should include columns for Item Name (the breed) and Description (the egg color). Save the query as Egg Color by Chicken. Your output should resemble Figure 1-7 after you enter "Araucanas" at the prompt.

Egg Color by Chicken	
Item Name	Description
Araucanas	blue eggs
*	

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FIGURE 1-7 Egg Color by Chicken query

Assignment 2D: Creating an Update Query

Create a query that updates the price of chicken feed by 10 percent. Consider using a wildcard that looks for entries in the Item Name column that contain the word "feed." Click the Run button to test the query. When prompted to change the records, answer "Yes." Save the query as Increased Prices.

Assignment 2E: Creating a Totals Query

Create a totals query that lists each breed of chicken in an Item Name column and totals up the number of chickens that have been purchased for rental. In the output, display columns for Item Name and Total Purchased. Sort the list of breeds from most orders to least. Note that Total Purchased is a change in column heading from the default setting in the query generator. Save your query as Chickens Ordered Summary. Your output should resemble that shown in Figure 1-8. Print the output if desired.



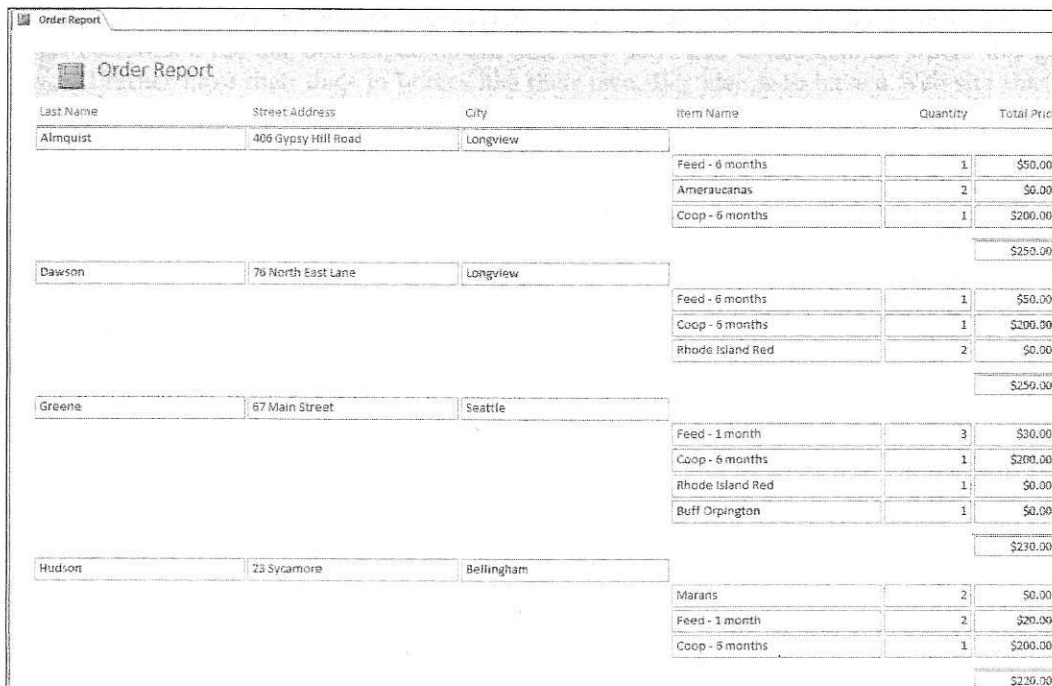
Item Name	Total Purchased
Rhode Island Red	5
Ameraucanas	4
Buff Orpington	3
Welsummer	2
Marans	2
Isbar	2
Araucanas	2

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FIGURE 1-8 Chickens Ordered Summary query

Assignment 2F: Generating a Report

Generate a report based on a query that summarizes customers' orders. The query should display columns for Last Name, Street Address, City, Item Name, Quantity, and the Total Price of all ordered items. Save the query as Order Report. From that query, create a report that groups each customer's order and totals up the amount paid. Make any needed adjustments to the output to avoid repeating names and to ensure that all fields and data are visible. Ensure that "Order Report" appears as the title at the top of the report, and save the report under the same name. Your report output should resemble that shown in Figure 1-9, although only a portion of the report appears in the figure.



Last Name	Street Address	City	Item Name	Quantity	Total Price
Almquist	406 Gypsy Hill Road	Longview	Feed - 6 months	1	\$50.00
			Ameraucanas	2	\$0.00
			Coop - 6 months	1	\$200.00
					\$250.00
Dawson	76 North East Lane	Longview	Feed - 6 months	1	\$50.00
			Coop - 6 months	1	\$200.00
			Rhode Island Red	2	\$0.00
					\$250.00
Greene	67 Main Street	Seattle	Feed - 1 month	3	\$30.00
			Coop - 6 months	1	\$200.00
			Rhode Island Red	1	\$0.00
			Buff Orpington	1	\$0.00
					\$230.00
Hudson	23 Sycamore	Bellingham	Marans	2	\$0.00
			Feed - 1 month	2	\$20.00
			Coop - 6 months	1	\$200.00
					\$220.00

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FIGURE 1-9 Order report

If you are working with a portable storage disk or USB thumb drive, make sure that you remove it *after* closing the database file.

DELIVERABLES

Assemble the following deliverables for your instructor, either electronically or in printed form:

1. Four tables
2. Form and subform: Orders
3. Query 1: Customers Under 30
4. Query 2: Egg Color by Chicken
5. Query 3: Increased Prices
6. Query 4: Chickens Ordered Summary
7. Query 5: Order Report
8. Report: Order Report
9. Any other required printouts or electronic media

Staple all the pages together. Write your name and class number at the top of each page. If required, make sure that your electronic media are labeled.