Teaching Case

Tourism through Travel Club: A Database Project

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Abstract

This applied database exercise utilizes a scenario-based case study to teach the basics of Microsoft Access and database management in introduction to information systems and introduction to database course. The case includes background information on a start-up business (i.e., Carol's Travel Club), description of functional business requirements, and sample data. Carol is a young entrepreneur who wishes to start her own business. Starting a new business has required Carol to be more efficient with her resources. She desires a way to organize her data and would like a computerized database management system. Students are asked to design and develop a database to help her manage the new company's customers, products, and purchases by emphasizing effective business rules and professional database development. In addition, this case will explore the benefits of working with MS Access, data population, creation and development of forms, queries, reports and a switchboard to complete the requirements expressed by Carol's Travel. This case can be used in a course where the students have little or no prior relational database experience, as well as a more intermediate/advance level of experience. Teaching notes containing suggested guidelines, deliverables, and the resulting database containing data, forms, queries, reports, and switchboard are provided upon request.

Keywords: Database Development, MS Access, SQL

1. CASE OPENING

Carol loves to travel! Each time she is ready to visit a new city, she has always wished there was a database that logged many of the great attractions, sites, and events of the cities. In college she majored in Marketing and remembered seeing so many clunky and misinformed websites. Many people, including friends and family, consistently mentioned the difficulty in searching for city information when traveling. To solve this issue, Carol came up with the idea of creating a list of all the sights in the major cities that she and her friends typically visited or wanted to visit. Her lists became so popular that she decided to make a business out of her idea. Now as an entrepreneur, she is challenged to build a system that will allow tourists (friends or not) that have registered as members to view the information that she has collected about cities. Thus, Carol's Travel Club was born.

Carol wants to be more efficient with her resources. She has been using spreadsheet software to keep track of the different sight-seeing activities. She needs a better way to organize her data and would like a computerized database management system to help manage the attraction information and provide summary reports for each city. She wants to start small and then eventually grow into a complete travel business.

You are challenged to help Carol make her dreams come true. She has provided a series of questions and business rules that will help you develop a database that will store tourism and event information and allow others to search and prepare for their upcoming travels. You will develop a database with 5 cities and some of their attractions and sights.

2. FUNCTIONAL REQUIREMENTS

Carol wants a database that allows her to track member and employee information. Members are either free or paid (premium). She also needs to manage the numerous attractions and sights around the world. In addition, she needs simple, effective forms for entering the data about each attraction and location information.

Carol would like to organize and track:
- Member Information
- Employee Information
- Attraction and Location of Trips
- Club Membership and Payment

She would also like to address a number of concerns and requests provided by her employees and members:
- To provide our members with the opportunity to review and reserve different attractions in cities all around the world.
- There are multiple locations (city, state, country) and each location has multiple sights.
- There are approximately 9 categories (museums, theaters, food, etc). Each category may have multiple attractions but each attraction has only one category.
- As a paid member (premium) you can request reservations for major attractions. If you are a viewing member (free) then you only see information and cannot have reservations made on your behalf.

Carol has already been collecting the data in Excel and Word documents. These documents can be found in the Appendix (or attached). The next several sections explain further details on the

database development (e.g., ER-diagram, data dictionary), the forms, queries, and reports and the navigational page.

Member Scenario
When you initially approach Carol's Travel Club, there are two member choices – free or premium. As a free member, access to city information and sights are available for viewing. With a premium membership, a member can access city and sight information, build an itinerary and use our club employees to set reservations for different attractions on your itinerary. Currently the premium membership is an annual $60 fee starting from the day you purchase it. During your membership you may create itineraries and reservations for during the membership time period. At the current time, Carol collects member name, address, phone, email preferred vacation location and their membership. (See Appendix Fig 1)

Employee Scenario
Each employee accesses the database for a number of reasons. Their primary task is to make reservations for the attraction requests on each premium member's itinerary. They are to check for open reservations and complete any that are not closed. At the end of each day, the manager will print a report of all closed itineraries/reservations. In order to know who our employees are we request their name, email, phone and location (ex: Miami, FL, USA). Since this company is a pure-play business, there is no reason to know exact addresses at this time for employees. They are paid direct-deposit through a secured online banking system. (See Appendix Fig 2)

Attractions/Sights Information
Attractions and sights around the world have been broken down into categories (see Table 1). Each category may have multiple attractions/ sights but each attraction/sight has only one category.

Table 1. Attraction categories	
Code	**Category**
C1	Art
C2	Fashion
C3	Food
C4	Museum
C5	Music
C6	Performance/Entertainment
C7	Sporting Events
C8	Statues and Monuments
C9	Tours

Each of the categories have specific opening months. Art, Food, Museum, Music, Performance/ Entertainment, and Tours are open year round. Fashion, Sporting Events, and Statues and Monuments are open from March to November.

Each category has multiple attractions. These attractions each belong to only one city location. In order to create reservations, itineraries, and reviews for the different attractions, you will need to collect some basic information about each. See Figure xx for some sample data.

4. FORM REQUIREMENTS

Carol and her employees need several user-friendly forms to enter data into the database. Two types of forms are needed – input forms and application forms. The input forms are data entry forms or forms that replicate the information in the database. The application forms combine information from multiple tables to produce related table information. The functional requirements for the input and application forms are provided below.

Input Forms
Input forms are to allow the employees to enter, edit, or query data in given table. These forms are to be columnar type forms that display data or allow for input of one record at a time. The forms are to be user friendly with all the field labels consisting of user-friendly descriptive names.

Input/Query forms are to be developed for the following tables:
- Employee information Form
- Attraction/Sight Page Form
- Location Information Form
- Attraction Category Form

Application Forms
1. **Membership/Payment Form:** This form is an entry form for the members and includes any payment information for premier members. This form should include all of the Member table information. If the member is a premier member then there should be payment information. The subform includes payment ID, amount, payment type, and payment date.
2. **Reviews by Member:** This form is an entry form for the member reviews of the attractions and sights that members have visited. This form should include review ID, member first name, member last name, attraction name (drop-down list), comment, and rating.
3. **Reservations (open only – intermediate):** This form is an entry form for member reservations. This form should have three parts: member type check, itinerary information, and reservation information. The upper portion should include premier member checkbox, member first name, and member last name. The middle portion should include itinerary ID and start and end dates of vacation. The bottom portion should include reservation ID, employee ID, attraction name (drop-down), day of reservation, estimated time, number of visitors, and name to place reservation under.
4. **Switchboard:** The database is to have a menu system designed for our everyday users. The menu is to be user-friendly and contain selections for all the forms and reports. The management team is open to design and look, so any template or design choices are feasible. Your switchboard at minimum should meet the following requirements:
   a. Contain menus for Input Forms, Application Forms, and Reports
   b. The main menu is to contain an exit selection that will exit the database application. Each smaller menu should contain a return link to the main menu
   c. The menu is to be executed automatically when the database is opened and the database window is to be displayed in the background.
   d. All forms and reports created in the earlier sections should be included in their appropriate sections.

Note: Each part of the switchboard should be user friendly. Therefore, there should be an easy way to move in and out of menu selections. Don't forget you should have exit buttons on your forms/reports to close them properly! *(Don't just use the x in the upper corner)*
Double check that your forms are usable and enter data to verify.

5. QUERIES

A variety of queries are required to extract meaningful and accurate data. In order for Carol's Travel Club's employees to be more efficient and effective with their members, reservations, and locations, data must be extracted and filtered to

answer fundamental and essential questions. We have determined that the initial queries to be included in the database are below.

All query column headings are to be clear, concise and accurately describe the contents of the column to the average user. Only universally accepted abbreviations are to be used. All queries, when printed out, should fit on standard paper when printed in landscape mode (11" by 8½"). The queries are to be named as they are listed below.

Basic Queries
1. **Current Member List:** List all members in the database. Order by member last name and then first name.

2. **Things to Do:** Display all activities and their corresponding categories. Sort in ascending by category.

3. **Cities and their Activities:** List all attractions and their addresses, include their cities, states, and countries. Sort by Country and City.

4. **Closed Reservations:** How many reservations has an employee completed? Show all completed reservations include reservation ID, reservation name, attraction name, day, employee name associated with reservation. Sort by reservation ID.

5. **Reservation Summary:** List all reservations in the database. Display reservation ID, employee ID, attraction name, day, estimated time, number of visitors, and name the reservation is placed under. Order by day.

6. **Premium Members:** List all premium members in the database, include all member information.

7. **Museum Listing:** Show all museums in their given cities, states, and countries. Order by City.

8. **City Information:** Display information about Berlin, Germany, include city information, all attractions/sights and the associated categories.

9. **3 Stars or Higher:** Display members and their reviewer comments with a rating of 3 or higher.

10. **Member City Attraction Search: a)** Display a city (member's choice) and country with the activities and sights in that city, include the categories of each of the attractions. Sort by category. **b)** Run the same query but give the member choice by country. Sort by city

11. **Top Attractions Reserved:** Display the top 5% attractions that have been reserved. List the attraction name, city, and entry fee.

12. **Membership Expiration:** Calculate the expiration date of memberships.

13. **Total Reservation Cost:** Calculate the total cost of entry to the attraction reserved. Display member name, attraction name, date, number of visitors, city, and entry fee. Sort by date.

Intermediate Queries

14. **February Activities and Sights:** Show all activities available in February. Display attraction name. Sort in ascending order (Hint: use Month function).

15. **September Reservations:** Show all reservations in the month of September. Display the date of reservation, attraction, reservation ID, reservation name, number of visitors, member first name and member last name.

16. **June Payments:** Show all membership payments for the month of June.

17. **December Expirations:** Show all members expiring before December 2016. Display member ID, member name, payment date, and expiration date. Sort by member ID.

6. REPORT REQUIREMENTS

Carol requires a number of reports both for her employees and her members. Below are the required reports. Label all sub-totals and grand totals appropriately with user-friendly descriptions to the left of the totals. Finally, to provide a more detailed and accurate appearance, all sub-totals should have a line above and the grand total should have a double line above the total.

1. **Things To Do Report:** Categories and activities within each category. List in ascending by category.

2. **Number of Visitors per Sight:** Visited sights and their member counts. List in ascending by sight.

3. **Total entry fees for complete itinerary**: Calculate the total amount due for the itinerary for all sights a member is visiting. Make sure to include the itinerary id, reservation id, start date, end date, number of visitors and entry fee. [Hint: this may be done best with creating a query first]

4. **Premium Members Report:** Premium membership. List all premium members, order by last name.

5. **Member Receipt:** Premium membership payment receipt. This is an opportunity to see each member and their payment information (payment date, payment amount, and payment type)

6. **Monthly Reservations Report:** Current Reservations by 'month'. Grouped by month and day, we are able to see each member, their attraction and city, and the employee who handled the reservation.

7. **Completed Payments Report:** Total payments for 'month'. This report includes member information and payment information grouped date.

7. CONCLUSIONS

Once you have completed all the functional requirements, Carol's Travel Club is now prepared to manage reservations and itineraries for their paid members and general travel information for all members.

Appendices

MemberID	Member Name	Address	Phone	MbrEmail	Preferred Vacation Location	Are you a Premiere Member?
1	Mary Hart	255 Amherst Lane Amherst, MA 01003 USA	413-897-6543	mhart@amherstlane.com	London	Yes
2	Charles Montgomery	10 Charlotte Road Austin, TX 78610 USA	521-555-6666	gotexas@test.com	Dublin	No
3	Jorge Calhoun	5068 Orlando Court Orlando, FL 32801 USA	786-321-8912	jcalhoun@monstermail.com	Milan	Yes
4	Emily Sharp	424 Stanbeck Place Bradenton, FL 34204 USA	941-234-0152	sharpland@csharp.com	Dublin	No
5	Thomas Smith	21 Thompson Lane Cleveland, OH 44107 USA	424-852-9525	tsmitty@smithfamilyrocks.com	Fort Lauderdale	No
6	Mark Lewis	2502 Seaworthy Drive Atlanta, GA 30345 USA	770-982-1314	marlew@lakta.net	London	No
7	Julie Jacobs	425 Madison Park Drive Nashville, TN 37218 USA	615-952-2532	queenj@soundstuff.com	Dublin	No
8	Terry Stewart	5226 University Drive Plano, TX 75023 USA	252-232-1157	stewbaby@planethane.net	Paris	No
9	Donald Parker	6811 Calista Road Carlsbad, CA 92008 USA	442-957-5322	parkhere@cccaltat.com	Cincinnati	No
10	Samuel Dear	6262 Lakeland Drive Techny, IL 60082 USA	606-522-6690	sdear@aolmailx.com	Berlin	No
11	Alise Jankovic	375 10th St NE Washington, DC 20004 USA	202-851-2522	alisej@uwad.edu	Milan	No
12	Sebastien Toms	2525 North Main Street San Jose, CA 95115 USA	902-559-9115	sebtom@sebserver.com	Berlin	No

Figure 1. Member Table Data

EmployeeID	Employee Name	EmpEmail	EmpPhone	EmpCity	EmpState	EmpCountry
1	David Convoy	dconvoy@carolstravel.com	888-543-8932	Miami	FL	USA
2	John Davidson	jdavidson@carolstravel.com	888-702-5912	Miami	Fl	USA
3	Emily Sharp	esharp@carolstravel.com	020775095022	London		England
4	Jerry Hallowell	jhallowell@carolstravel.com	888-702-5912	Miami	FL	USA
5	Teresa Wright-Maven	twright@caroltravel.com	888-702-5912	Miami	FL	USA
6	Edward Hirsch	ehirsch@carolstravel.com	020782321540	London		England

Figure 2. Employee Table Data

Attraction	Address	Phone	Type	Website	Cost
Louvre Museum	4 Place du Louvre, Paris 75001	+33 1 40 20 50 50	Art	http://www.louvre.fr/en	16.71
Eiffel Tower	5 Avenue Anatole France, Paris 75007	+33 892 70 12 39	Monument	http://www.toureiffel.paris/	17.00
Arc De Triomphe	Place Charles de Gaulle, Paris 75008		Monument		0.00
Musee d'Orsay	1 Rue de la Legion d'Honneur, Paris 75007	33140494814	Art		0.00
Jules Verne Restaurant	5 Avenue Anatole France, Paris 75007	+33 892 70 12 39	Food		0.00
Eiffel Tower	5 Avenue Anatole France, Paris 75007	33892701239	Monument	http://www.toureiffel.paris/	26.00
Seine River Cruise	Seine River, Paris 75007	33180421	Entertainment	http://viator.com	36.00
Tour de France	Around France, Paris 75007		Sporting Event	http://en.parisinfo.com	0.00
Le Marais	Aristocratic District, Paris 75001		Fashion	http://www.aparisguide.com	0.00
London Eye	South Bank of the River Thames, London SE1 7PB		Monument	http://www.visitlondon.com/	29.99
British Museum	Great Russell St, London WC1B 3DG		Museum		0.00
National Gallery	Trafalgar Square, London WC2N 5DN		Art		0.00
Tower of London	Tower Hill, London EC3N 4AB		Monument	http://www.hrp.org.uk/tower-of-london/	30.55
Statue of Liberty	Liberty Island, New York 10004	(212) 363-3200	Monument	http://www.nsp.gov	26.00
The Metropolitan Art Museum	1000 5th Ave, New York 10028	(212) 5357710	Art	http://www.metmuseum.org	12.00
Yankee Stadium	1 E 161st St., New York 10451	(718) 293-4300	Sporting Event	http://www.yankees.com	0.00
Best Clubs in New York	245 8th Ave #192, New York 10011	(917) 300-8187	Entertainment	http://www.bestclubsinnewyork.net	25.00
Keens Steakhouse	72 W 36th St., New York 10018	(212) 347-3636	Food	http://www.keens.com	0.00

Figure 3. Attractions Sample Data