

Incorporating A Database Management Project In An AIS Course Using Access 2000

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Abstract

The purpose of this paper is to describe and distribute a database management project that has been used in the classroom with numerous revisions and changes. Access 2000¹ will be used to demonstrate the material and solutions will be distributed on disk using this format.

The use of off-the-shelf application software to process AIS data can help achieve some of the previously mentioned professional and educational goals. Application software refers to programs designed to help the user perform tasks specifically relating to their work. Word processing, electronic spreadsheet, database management, flowcharting, and transaction processing software are examples.

Introduction

The following Vision Statement for the Accounting Profession is being widely disseminated:

CPAs are the trusted professionals who enable people and organizations to shape their future. Combining insight with integrity, CPAs deliver value by:

- *Communicating the total picture with clarity and objectivity,*
- *Translating complex information into critical knowledge,*
- *Anticipating and creating opportunities, and,*
- *Designing pathways that transform vision into reality.*

Readers with comments or questions are encouraged to contact the author via email. Further data information is available from the author.

The Vision Statement resulted from input from CPAs in all areas of the profession to create a unified, comprehensive vision of the profession's future. It was initiated to help the profession keep up with the marketplace's changing demands, identify and prepare for future opportunities and challenges, redefine and leverage its core competencies and values, and draw together to create a vibrant, viable future. Carlozzi² describes the development process in a *Journal of Accountancy* article.

The AICPA Board initiated the development of an online educational resource called the *AICPA Core Competency Framework For Entry Into The Accounting Profession*³. It provides a foundation for curriculum reform and provides resources for educators to implement the Vision. The Framework focuses on a skills-based curriculum versus a knowledge-based curriculum. It also identifies Functional, Personal, and Broad

Business Perspective competencies that are required for accounting professionals today. One of the results is a list of five Core Competencies for the Profession.⁴ They are:

- Communications and Leadership Skills
- Strategic and Critical Thinking Skills
- Focus on the Customer, Client and Market
- Interpretation of Converging Information
- Technologically Adept

Regardless of how the AIS course is taught or where it fits in the accounting curriculum it should address the Vision Statement and the Core Competencies for the Profession. AIS courses serve multiple purposes and prepare students to face new challenges in a rapidly changing business environment. They must incorporate other courses in the business curriculum. They must not only help students acquire necessary technical skills, but also help them learn to think critically, develop strong ethical values and enhance their computer proficiency. In addition, the instructional methods must keep the students interested and enthusiastic about joining the accounting profession..

As these courses have evolved in response to the ever-changing business environment and curriculum needs, instructors have felt pressure to integrate computers into the classroom. This is often difficult to do in an interesting way. It is easy for students to become discouraged by

complicated and confusing software and instruction that concentrates on mechanical processes. To overcome this problem accounting faculty may feel inclined to develop their own material but are reluctant to invest the necessary time and effort.

Purpose

The purpose of this paper is to describe and distribute a database management project that has been used in the classroom with numerous revisions and changes. Access 2000⁵ will be used to demonstrate the material and solutions will be distributed on disk using this format.

The use of off-the-shelf application software to process AIS data can help achieve some of the previously mentioned professional and educational goals. Application software refers to programs designed to help the user perform tasks specifically relating to their work. Word processing, electronic spreadsheet, database management, flowcharting, and transaction processing software are examples.

Problem Case

Student instructions and setup material for the problem case will be distributed on disk at the conference presentation of this paper. Conference attendees are encouraged to copy and use the material as long as the author is referenced. Other instructors can obtain this information by contacting the author.

Information And Group Work For The Unc Club Database Project, Part I **Spring 2000**

You must work with two other people in a group to complete this project. You can assume that I am the owner/manager of The UNC Club and that I have requested your group to establish this system. Your group should ask me as the owner/manager any questions necessary about the operations of the UNC Club to establish the

AIS elements. The system will include the following elements:

- Documentation using RFFlow and other documentation tools
- Transaction processing system using Simply Accounting

- Receivable system using Access and Simply Accounting
- Budgeting system using Excel and Simply Accounting
- Web page developed using Word 2000, or FrontPage

The manager cannot answer questions about how to set up your suggested system or questions about the software. These questions should be asked of me as your instructor. All questions directed to the manager should be asked either in class so everyone will hear the answers or emailed to me and I will respond to everyone. **IF YOU DO NOT ASK QUESTIONS YOU WILL NOT NECESSARILY GET ALL THE INFORMATION YOU NEED TO COMPLETE THE PROJECTS.**

The UNC Club is an organization at UNC that provides food services to certain members of the university community. The membership potential includes all current faculty, retired faculty, Board of Trustee members, major contributors, certain dignitaries, staff, and students who are employees of the university. Notice that the University does not employ some of these members. If a member is an employee they are required to be on payroll deduction for the payment of the minimum monthly charges of \$15.00.

The club rules state that all members except retired faculty, Board of Trustee members, major contributors, and certain dignitaries must charge a minimum of \$15.00 each month. If these members do not charge \$15.00 worth of food and beverages the difference is forfeited and they are billed for the minimum or, if they are employees, an automatic deduction is made from their check for the minimum charge. If they charge more than \$15.00 worth of food and beverages, they are billed for the difference if they are on payroll deduction or for the entire amount if they are not employees. The bill is prepared using the balance forward format listing the balance carried over from the previous

month along with the detailed transactions for the current month and the ending balance.

Due to the minimum charge the UNC Club's accounts receivable is not like a normal accounts receivable system. The calculations required for the minimum charge and the forfeits cause problems when using an off-the-shelf transaction processing package. Since this application is different from a regular accounts receivable system the decision was made to use a computerized data base management system to keep the information. The UNC Club board wants the flexibility to be able to use the information in this database to prepare mailing labels, memos, and letters to the members and also to put messages on the members statements. The UNC Club does not have a lot of money and therefore does not purchase special forms for the statements. They use the campus mail whenever possible to reach their membership and save on postage. The first line of addresses on campus should be the persons name, the second "CAMPUS MAIL", and the third is the members department. Off campus addresses will include the name, street address, city, state, and zip code.

A summary of the accounts receivable information needs to be entered into the transaction processing system each month and this system will be used to prepare the financial statements. The revenues are broken down into Food Revenue, Beverage Revenue, and Forfeits. The UNC Club must pay sales tax on all food and beverage sales but not on forfeits. The tax rate is 4% for the state and 2% for the city of Greeley.

The UNC Club handles no cash. All cash receipts and disbursements are through the UNC Accounting Office. This office sends a report each month to the club manager summarizing cash transactions. Food is purchased from the University Food Service, prepared at the UNC Club by a cook and served by waiters and waitresses.

When a club member enters the club they are seated by a waiter/waitress. When the order is taken the waiter/waitress writes the members name and ID number on a charge ticket and writes down the order. The ticket is given to the cook and used to prepare the order. While the member finishes their meal the waiter/waitress calculates the ticket total and gives it to the customer for signature. The tickets are then collected and given to the manager. Currently the manager takes all the tickets for the month, sorts them by member, and manually prepares a statement for each member.

The cook, waiters/waitresses, and club manager's salaries and wages are paid by the University and a report is sent from the UNC Ac-

counting Office each month.

All office and restaurant supplies, are purchased from the University Warehouse and postage on member statements sent in the regular mail is purchased from the University Post Office.

Monthly financial statements on the accrual basis are required for reporting to the UNC Club Board of Directors. In the future the club board wants a cash budget that discloses the budget amounts compared to actual amounts.

The following statements are available for November and December 1999.

UNC Club Schedule of Net Assets	30-Nov 1999	31-Dec 1999
<u>Assets</u>		
Cash	387	300
Accounts Receivable	2000	2300
Food Inventory	95	100
Beverage Inventory	515	500
Restaurant Supplies	300	325
Office Supplies	175	150
Total Assets	3472	3675
<u>Liabilities</u>		
Food Service Payable	1500	1625
Warehouse Payable	300	315
UNC Post Office Payable	10	18
Salaries Payable	1000	800
Sales Tax Payable	240	270
Total Liabilities	3050	3028
<u>Net Assets</u>		
Unrestricted Net Assets	422	647
Restricted Net Assets	0	0
Total Net Assets	422	647
Total Liab and Net Assets	3472	3675

UNC Club Statement of Activities	Mo. End Dec-99	YTD Dec-99
Revenues		
Food Revenue	2900	10025
Beverage Revenue	1401	4116
Forfeits Revenue	199	659
Special Events Revenue	300	500
Miscellaneous Revenue	0	15
Total Revenue	4800	15315
Expenses		
Salary Expense	2500	8750
Food Expense	1100	3600
Beverage Expense	500	860
Restaurant Supplies Expense	225	788
Office Supplies Expense	45	158
Postage Expense	18	60
Special Event Expense	182	290
Miscellaneous Expense	5	18
Total Expense	4575	14524
Increase in Net Assets	225	791

UNC Club
Statement of Cash Flow
For the month of December 1999

Cash flow from operating activities	
Receipts from members	4770
Paid salaries	2700
Paid for food & beverage	1465
Paid for sales taxes	240
Paid for restaurant & office supplies	255
Paid for postage	10
Paid for special events	182
Paid for miscellaneous items	5
Total cash flow from operating activities	-87
Cash flow from investing activities	
No investing activities	0
Total cash flow from investing activities	0
Cash flow from financing activities	
No financing activities	0
Total cash flow from financing activities	0
Net Inc <Dec> in cash	-87
Cash beginning balance	387
Cash ending balance	300

The database must consist of related database tables. Basic information about the fields you must use are listed below. Other fields can be used but your tables must include these.

After analyzing the material you will use RFFlow and/or any other software you want to plan on paper the document flows, database fields and tables. This must be printed and not hand written. An example as a method to document the database fields and tables is given after this paragraph. Show your instructor the documentation and AFTER instructor approval establish the database and required tables in Access, record information in the tables, and use the database to prepare various reports. This project is in three parts. As soon as Part I is completed it should be handed in and you will then pick up Part II. When Part II is completed you will pick up Part III.

Since the information in Part II provides the solution to Part I (and Part III provides a solution for Part II) each part will be handed out when the previous part is complete and no assignments will be accepted late.

Name the database you create "UNCClub" with no spaces. The fields given above are required to be used in the database tables. You may add additional fields if you feel they are necessary. You need to determine the related tables that should be developed to make it easy and efficient to use the database.

The codes in the CD field are A=Active, T=Trustee, R=Retired, C=Contributor, and X=Ex-Member. The TCD and TRDESC fields are as follows: 1=Balance Forward, 2=Food Charge, 3=Beverage Charge, 4=Forfeit, 5=Payment, and 6=Error Correction. The

Basic information about the fields you must use are listed below.

Name	Type of Information	Description
NUM	Numeric 3 characters	ID Number
NAME	Alphabetic 25 characters	Member Name
ADD1	Alphabetic 25 characters	CAMPUS ADDRESS or Street Address
ADD2	Alphabetic 25 characters	Department or City, ST, Zip
CD	Alphabetic 2 characters	Type of Membership Code
PR	Yes/No response	Payroll Deduction Code
TCD	Numeric 3 characters	Transaction Type Code
TRDESC	Alphabetic 15 characters	Transaction Description
DATE	Date format 09/05/95	Transaction Date
TRAMT	Numeric 9 with 2 decimals	Transaction Amount
TXC	Numeric 9 with 2 decimals	Code For Tax
TXR	Numeric 9 with 2 decimals	Tax Rates Per Code

Example Of Database Documentation

Table Name	Inventory Items	
Primary Key	ITEM.ID	Text 10 Characters
Other Fields	DESCRIPTION	Text 50 Characters
	COST	Number 15 Digits Currency Format
	LOCATION	Text 25 Characters
	VENDOR.ID	Text 10 Characters
	VENDOR	Text 50 Characters
Linked Tables	Purchases, Sales, Vendor Information	

TXC and TXR fields are as follows: 0=0.0%, 1=4.5%, 2=5.0%, 3=5.5%, 4=6.0%.

Customized input forms are required for all tables that will help you control the input process and allow the operator to verify the information. For example, when a member number, NUM, is entered the members name should be displayed automatically for the operator to verify that the correct number has been entered. Another example would be to provide operator directions on screen to help them understand what information is required in each data field. Use the AIS text from previous courses as a reference. You can also search the help screens in Access for assistance. Ask your instructor for assistance when

needed. Any individual group member can get assistance for the group.

You are required to enter at least three members information and at least four transactions for each member into the database system before handing in the disk to be graded. Your group will need to make a 30-minute appointment with your instructor to have this material graded and all members of the group must attend. This part is worth 50 of the 150 points available for the database project. Hand in one disk for your group with the group work on it.

The due date for this part will be set by your instructor.

Information And Group Work For The Unc Club Database Project, Part II
Spring 2000

You will be given the database files on disk to complete this part of the project. Split up the data entry for this material but be sure each group member knows how to complete each part. The information you will be given on disk includes the UNC Club members and balances forward.

Record the following charges in the UNC Club database. As you are recording the charges try to determine features you would change to improve the design of the input forms or database configuration. Try to put yourself in the place of the data entry operator. As a group, write a memo that explains the changes you suggest. Only beverage and food charges are subject to sales tax at 6%.

Transaction Listing For October 2000

NUM	NAME	DATE	TCD	TRDESC	TRAMT
25	Iks, A. Robe	10/02/00	3	Beverage Charge	5.00
9	Delay, Major		2	Food Charge	9.05
25	Iks, A. Robe		2	Food Charge	2.00
8	Lettuce, Hedda		2	Food Charge	2.50
1	Boring, General Lee		2	Food Charge	9.95
3	Cake, Patty		2	Food Charge	3.95
3	Cake, Patty		3	Beverage Charge	1.00
6	Shun, E. Qua		2	Food Charge	4.45
17	Angel, Gardian	10/03/00	2	Food Charge	4.45
1	Boring, General Lee		2	Food Charge	1.00
28	Noun, Proper		2	Food Charge	8.40
28	Noun, Proper		3	Beverage Charge	1.00
4	Nut, Wall		2	Food Charge	8.95
12	Omerter, Therm		3	Beverage Charge	3.00
22	Sike, Ed		3	Beverage Charge	1.50
1	Boring, General Lee	10/08/00	2	Food Charge	10.40
3	Cake, Patty		2	Food Charge	9.45

18	Day, May		2	Food Charge	3.50
7	Tation, Dis R.		2	Food Charge	3.75
15	Beach, Sandy	10/10/00	2	Food Charge	5.00
19	Duck, Fun E.		2	Food Charge	3.95
19	Duck, Fun E.		3	Beverage Charge	1.00
15	Beach, Sandy	10/11/00	2	Food Charge	10.00
19	Duck, Fun E.		2	Food Charge	5.00
24	Accountant, Doubtful	10/13/00	2	Food Charge	8.75
24	Accountant, Doubtful		3	Beverage Charge	2.00
19	Duck, Fun E.		2	Food Charge	6.00
19	Duck, Fun E.		3	Beverage Charge	2.00
27	Time, Justin		2	Food Charge	2.75
25	Iks, A. Robe	10/25/00	2	Food Charge	3.56
30	Dendron, Rhoda	10/30/00	2	Food Charge	7.90
30	Dendron, Rhoda		3	Beverage Charge	2.00
12	Omerter, Therm		2	Food Charge	3.95
27	Time, Justin		2	Food Charge	2.75

In addition to the transactions on the previous page, add each of your group members as a club member. You can assign any group member name to any of the following numbers.

Member 34 is a regular active member who is on payroll deduction and is in the Management Department.

Member 35 is a regular active member who is not on payroll deduction and is in the Accounting Department.

Member 36 is a retired member. (Retired members are not on payroll deduction.) Make up an address off campus.

Add the following records to the database for members 34-36.

NUM	DATE	TCD	TRDESC	TRAMT
34	10/01/00	1	Balance Forward	35.00
35		1	Balance Forward	5.00
36		1	Balance Forward	15.00
34	10/03/00	2	Food Charge	15.00
35		2	Food Charge	5.00
36	10/05/00	3	Beverage Charge	2.00
34	10/08/00	2	Food Charge	13.00
34		3	Beverage Charge	14.00
35	10/12/00	3	Beverage Charge	3.00
36		2	Food Charge	2.50
36		2	Food Charge	14.00

Prepare queries called "Forfeits 1", "Forfeits 2", Etc. as needed to determine the forfeits. The active members are the only ones who are subject to the \$15.00 minimum charge each month. Sales tax is NOT considered in the minimum charge. If a member does not have any charges they forfeit the full \$15.00. Print a hard copy of the queries and record the forfeits.

Record the following payments received from members during the month.

NUM	NAME	CD	PR	DATE	TCD	TRDESC	TRAMT
18	Day, May	A	Yes	10/5/00	5	Payment	(\$5.00)
2	Makit, Willy	A	Yes		5	Payment	(\$10.55)
13	O'Teen, Nick	A	Yes		5	Payment	(\$25.00)
7	Tation, Dis R.	A	Yes		5	Payment	(\$15.00)
34	Student Thirty Four	A	Yes		5	Payment	(\$35.00)
5	Trouble, Double	A	Yes		5	Payment	(\$10.00)
24	Accountant, Doubtful	A	Yes	10/12/00	5	Payment	(\$5.30)
11	Mas, Chris	A	Yes		5	Payment	(\$9.10)
28	Noun, Proper	A	Yes		5	Payment	(\$12.65)
36	Student Thirty Six	R	No		5	Payment	(\$15.00)
30	Dendron, Rhoda	A	Yes	10/19/00	5	Payment	(\$25.00)
4	Nut, Wall	R	No		5	Payment	(\$19.20)
26	Stein, Frank N.	A	Yes		5	Payment	(\$15.00)
25	Iks, A. Robe	A	Yes		5	Payment	(\$7.58)
14	Zemost, I. M.	A	Yes		5	Payment	(\$35.00)

This information should be handed in on disk (one disk for each group) on the assigned due date. You will need to make an appointment for 30 minutes with me as a group for grading the material. This will count as 50 points out of the 150 points for the database project.

Information And Group Work For The Unc Club Database Project, Part III
Spring 2000

You will be given database files on disk to complete this part of the project. The files have everything in them that you should have already prepared in the two previous parts.

For control purposes prepare a query to verify the forfeits that have been recorded. Call this query "Proof of Forfeits". You should be able to run this at anytime after forfeits have been recorded regardless of what other transactions have been recorded for the month. It should list the Food Charges, Beverage Charges, and the Forfeits for each Active member. Disregarding taxes, if a member has a forfeit the total should be \$15.00. If the member does not have a forfeit the total should still be at least \$15.00.

Create a query to determine the payments from payroll deductions and either print the member numbers or write them on a sheet of paper. Record the payroll deductions.

At this point you have received and/or recorded all the entries that would normally be re-

corded during the month. These include balances forward, normal charges during the month, payments during the month, forfeits at the end of the month, and payments from payroll deductions.

Prepare an Accounts Receivable Subsidiary Ledger report including the member number, member name, date, transaction description, transaction amount, tax, and the total amount for each transaction. Group on the name or member number, sort by date and within date on the transaction description. This report should not be over 10 pages long. Print this report to the printer and hand it in.

Prepare a query that would be used to determine the required entry to summarize the information into a transaction processing software package. Print the query to the printer. (It should be less than one page long. If it is longer don't print it.) On the printout prepare a hand written general journal entry that you will later


enter into the transaction processing system you establish using Simply Accounting.

Prepare a query that provides only a total by member number/name that is the balance of each members account. Print this query to the printer. (It should not be more than one page long. If it is don't print it.) This could be used to record the Balances Forward dated 11/1/2000. You should NOT record these for this project.

Prepare a report that would serve as the member's statement to be sent at the end of the month. Each statement should be on a separate page. It should use the "balance forward" format listing a balance forward, the individual charges, taxes, totals, payments, and the ending balance. This report should not be printed, as it will be about 33 pages long.

Prepare an additional report that you and the club manager feel would provide important in

formation to manage the club. Use your creativity and discuss it with the club manager.

This part is worth 50 points out of the 150 total points for the database project. The due date will be announced in class. You will need to make a 30 minute appointment with me as a group to grade the material. 

Endnotes:

1. Carlozzi, C.L. (1998). Mapping the Road Ahead. *Journal of Accountancy*. September.
2. AICPA Core Competency Framework For Entry Into The Accounting Profession. (1999) <http://www.aicpa.org/edu/core-comp.htm>
3. AICPA Website (2000). http://www.cpa-vision.org/final_report/page08.htm
4. Access 2000 is a copyrighted program of Microsoft Corporation, One Microsoft Way, Redmond, Washington 98052-6399 U.S.A.

Notes