

# Systems Implementation

## University Donations System

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### **Problem Description**

The Sunbelt University System is a large, state-supported educational institution with a reputation of providing top quality education and conducting research in a variety of disciplines. The system is divided into a main campus and three extension campuses: east, west, and north. The combined enrollment in the system exceeds 100,000 students, and the university has never really had a problem attracting students not only from within the state but also from other parts of the country. The main reason for the success and reputation of the university has been its ability to attract highly talented faculty who have been able to combine effective teaching with quality research.

About 3 years ago, the university was faced with a problem that is typical of most educational institutions in the country today. With shifts in policies at the national level, changing states of the economy, and significant changes in demographic patterns, it was deemed necessary on the part of the university to increase its efforts significantly in the area of private financial contributions. While the university had solicited private funds in the past, such funds have never been as critical to the university as they are now. The monies obtained from this effort have been (and will continue to be) used to foster superlative research and outstanding teaching by way of state-of-the-art facilities and an ability on the part of the university to attract and retain highly qualified faculty.

Given the heightened degree of importance attached to funds from private sources, the president of the university appointed Michael Green to organize and intensify the efforts of the university in its quest for such funds. Ad hoc group consisting of people with considerably less authority than Mr. Green had been involved in fund-raising efforts in the past; but it was Green's job to create a mechanism to achieve the president's objective. Green saw the task confronting him as being composed of two distinct parts.

1. Recruiting a group of people to assist in acquiring funds from major donors to the school and defining the function (and hence the activities) of each member of the group in a detailed fashion.
2. Using computerized support to (a) collect donation data and (b) process those data into periodic reports for use by a variety of interested parties in evaluating the committee's performance.

Mr. Green put together a committee of 16 people who were carefully chosen because of their experience in fund raising and their past affiliations with various university programs that needed funds. The first task that the group undertook was to divide itself into 4 sub-groups, one for each campus area:

Main Campus	Emily Thompson, Emma Donner, Terry Krozinski, Eric Summers
East Campus	George Thomas, Susan Kipfer, Tara Halloway, Karen Peters
West Campus	Michael Simpson, Terrance Ferriano, Tom Hank, Beverly Anderson
North Campus	Hillary George, Alex Bates, Jim Herschleb, Vicki Sontana

After extensive interviews with various relevant parties from each of the campuses, an estimate of the needs for each campus for the following year was made. These estimates became the quarterly goals for each committee as a whole.

<b>2010 Individual Campus Targets (in Thousands)</b>				
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Main Campus	400	400	500	600
East Campus	200	250	250	300
West Campus	75	100	125	150
North Campus	100	100	150	150

An additional outcome from the interviews discussed above was the identification of categories of programs that needed funds. The following categories were identified:

1. Basic Research Programs, Chaired by Donna Milton
2. Applied Research Programs, Chaired by Samuel Smith
3. Teaching Programs, Chaired by Anton Freeman
4. International Programs, Chaired by Nelson Simms

An examination of existing records identified a set of significant donors (expected annual contributions exceeding \$50,000). This was done for a number of reasons. First, explicitly identifying such donors would enable the committee members to pursue them specifically for contributions. Second, given these donors' last contributions and information from meeting with them, these donors were projected to meet or exceed prior levels of funds given to the university in the next year. Third, committee members could be more appropriately assigned to pursue specific significant donors. Contributions from less significant donors are gladly accepted, but it was decided that the committee members would not actively pursue them.

The donors were classified into three groups: individuals (I), private foundations (F) and corporate donors (C). Each committee member was then assigned to at least one donor with the objective of personally working with that donor to continue giving at the same pace or increasing it. When the donor gives a contribution, that committee member receives credit for having helped the university acquire the funds.

Donor Name	Donor Type	Projected Annual Donation (in thousands)	Committee Member
Crabtree	I	50	Thompson
Genetix	C	100	Krosinski
Marlo	I	55	Simpson
Mervic	F	60	Peters
Orange Computers	C	50	Thompson
Roper Foundation	F	70	Ferriano
Keltron, Inc.	C	85	Halloway
Johnson & Sons	C	90	Bates
Elbert	I	62	Kipfer
Mavis	I	73	George
Hammersmith	F	200	Donner
Elingsworth	F	135	Anderson
Hope Foundation	F	100	Hank
Schmeling	I	50	Kipfer
Rome Foundation	F	80	Herschleb
Siscilion	I	80	Summers
Barneveld, Inc.	C	65	Herschleb
Kopeci	I	175	Thomas
Jones & Sons	C	100	Sontana

Donors are allowed to choose the program that they wish to donate the funds to. They can also split an individual donation between different programs (such as \$25,000 to Basic Research, \$10,000 to Teaching). They can give multiple times throughout the year. The quarter, year, total amount and amount allocated per program should be well recorded.

Committee members are asked to periodically check with Mr. Green who prints out a report monthly showing how much each program has received thus far. The goal is to allocate the donations equally between programs. Committee members must study this monthly report to see which areas are most in need of funding so that they can personally persuade their assigned donor to donate to that program.

### **End User Requirements**

Mr. Green will be in charge of working with the system. He is not an Access expert and would like pre-defined data entry screens set up to make it easy to work with the system.

Mr. Green would like data entry screens for the following:

- 1) One individual donor information including all data about the donor (name, description of the type of donor (Individual, Foundation, Corporation), projected donation and assigned committee member). This screen should let him add new add/change/delete donor data.

- 2) One individual donor donation information including: the name of the donor, the type of the donor and the goal at the top and then the actual donation data (date, donations and programs). Mr. Green should be able to add/change/delete single donations from here.
- 3) A list of committee members including their name, their campus. Mr. Green should be able to add/change/delete committee members on this screen.
- 4) A place to enter in the committee/campus quarterly goals.

### **Reports Requested**

- 1) A report showing the quarterly goals by committee/campus.
- 2) A report showing the members of each committee (sorted by committee and then last name).
- 3) A report showing the committee members' names and the names of the donors that they are assigned to.
- 4) A report showing a list of all of the donors, what programs the funds were given to, how much to each program and total by donor of what they have given YTD.
- 5) A report that shows the total amount each program has received so far.
- 6) A report showing the total amount by quarter that each committee/campus has been able to secure from its assigned donors along with their projected quarterly goal for comparison.

### **Your Project Tasks**

1. Study the problem to be sure you understand it. Ask questions to clarify any areas of concern.
2. Based on the information you received, create an ERD\* and normalize\* the data into a working set of tables.
3. Create your data dictionary including a list of tables, what fields are in each table and the following for each field: field name, data type, size, domain (such as the fact that nobody can get less than 0% on an assignment, it is the key field, it is required, etc.)\*
4. Enter your plan into Access, making tables as you defined in your ERD, normalization and data dictionary.
5. Design and create your data entry forms.
6. Design and create the reports as requested.

Submit items 2 thru 6 for grading in your folder on the "I" drive.

# ***Project Suggested Steps***

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1. Complete the (ERD, or Normalization) and Event Analysis on the story problem in your packet. Check them against each other and make sure that they are the same. If they are not, make the necessary changes to fix the problem. The ERD must be drawn in Visio, type the Normalization and use the template with the Event Analysis. (25 points)
2. Complete the data dictionary in word processing or on a spreadsheet – whatever works for you. This step helps you to insure that you have thought through each field’s properties individually. (5 points)
3. Create the tables in design view using Access. Name the file University. Name your tables as exactly as planned on your ERD and Normalization. (10 points)
4. Create the relationships in Access. Be sure that you have the correct (1:M) relationships defined and that you are insuring referential integrity. (10 points)
5. Create the necessary data entry forms. (15 points)
6. Enter “fake”, but realistic data into your tables using your newly created forms. This allows you to test your forms for errors and to fix them as you go. (10 points)
7. Create the necessary queries and reports as requested by your user. Run your queries and your reports with your test data. Make sure that you are getting the correct results! (25 points)
8. Submit for grading: your ERD, Normalization and Event Analysis(typed/drawn with Visio or Word), your data dictionary (typed as requested in #2 above), copy of the database to your folder on the I drive.