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Database System for Alumni Tracking

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Abstract

In their discussion - Database System for Alumni Tracking - by Steven Moll, Associate Professor and William O'Brien, Assistant Professor, School of Hospitality Management at Florida International University, Professors Moll and O'Brien initially state: "The authors describe a unique database program which was created to solve problems associated with tracking hospitality majors subsequent to graduation."

"…and please, whatever you do, keep in touch with your school; join an alum' organization. It is a great way to engage the resources of your school to help further your career," says Professor Claudia Castillo in addressing a group of students attending her Life after College seminar on 9/18/2009.

This is a very good point and it is obviously germane to the article at hand.

"One of the greatest strengths of a hospitality management school, a strength that grows with each passing year, is its body of alumni," say the authors. "Whether in recruiting new students or placing graduates, whether in fund raising or finding scholarship recipients, whatever the task, the network of loyal alumni stands ready to help."

The caveat is the resources are only available if students and school, faculty and alumni can keep track of each other, say professors Moll and O'Brien.

The authors want you to know that the practice is now considered essential to success, especially in the hospitality industry whereby the fluid nature of the industry makes networking de rigueur to accomplishment.

"When the world was a smaller, slower place, it was fairly easy for graduates to keep track of each other; there weren't that many graduates and they didn't move that often," say the authors. "Now the hospitality graduate enters an international job market and may move five times in the first four years of employment," they expand that thought.

In the contemporary atmosphere linking human resources from institution to marketplace is relatively easy to do.

"How can an association keep track of its graduates? There are many techniques, but all of them depend upon adequate recordkeeping," Moll and O'Brien answer their own query. "A few years ago that would have meant a group of secretaries; today it means a database system," they say.

Moll and O'Brien discuss the essentials of compiling/programming such a comprehensive data base; the body of information to include, guidelines on the problems encountered, and how to avoid the pitfalls. They use the Florida International University, Hospitality database as a template for their example.

Database System for Alumni Tracking

by
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The authors describe a unique database program which was created to solve problems associated with tracking hospitality majors subsequent to graduation.

One of the greatest strengths of a hospitality management school, a strength that grows with each passing year, is its body of alumni. Whether in recruiting new students or placing graduates, whether in fund raising or finding scholarship recipients, whatever the task, the network of loyal alumni stands ready to help.

But this great strength is only a potential one unless the school can continually keep in contact with its graduates and, equally important, the graduates can keep in touch with each other. Of course there are always the loyalists who make a point of seeking out their old professors and forming local alumni chapters. But most graduates, busy with their careers and families, gradually lose contact. The old school spirit, so strong in undergraduate days, fades. The school's alumni association (or society) itself must hold onto that contact, keep that sense of belonging strong, and nourish the cohesive spirit that will turn its graduates into an effective force. It isn't easy.

At a minimum alumni should be getting timely newsletters, be invited to subscribe to the school hospitality publication, and have an up-to-date directory of fellow graduates. A frustrating but too common experience of many graduates is to discover an old classmate has been at a neighboring property for some length of time. But the association or society can do nothing unless it knows where graduates have gone. When the world was a smaller, slower place, it was fairly easy for graduates to keep track of each other; there weren't that many graduates and they didn't move that often. Now the hospitality graduate enters an international job market and may move five times in the first four years of employment.

How can an association keep track of its graduates? There are many techniques, but all of them depend upon adequate recordkeeping. A few years ago that would have meant a group of secretaries; today it means a database system.

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Florida International University Develops Database

By the middle of 1984 the job of keeping track of hospitality management alumni at Florida International University had become unmanageable. Secretaries were rebelling at conflicting address updates and at a job that could not be done right. It was a classic situation in office work and computer science; the complexity of the job was growing faster than the number of records. With over 3300 graduates moving at frequent intervals, the school was awash in duplicate addresses, conflicting information, and missing alumni. The choice was clear: Assign more manpower or look for a computer solution.

It was fairly easy to define what the main features of a system should be:

- Information about alumni had to be grouped so that duplicate or missing data was immediately apparent.

- Updating had to be easy, and require no training of personnel.

- Mailing labels and a directory of alumni would have to be available at any time.

- The database had to be secure from any possibility of loss or accidental erasure.

However, hospitality management graduates are particularly mobile. The average graduate will move several times in the first two years after graduation. Clearly the database system would require some special features to help maintain contact. Other objectives were to enhance circulation of the *FIU Hospitality Review*, assist with recruiting students, and foster local alumni chapters.

Incidental to all of these objectives was the need to save time and effort on the part of the association's staff.

Once the decision to automate had been made, the next question was whether to purchase an off-the-shelf system or to design a program uniquely suited to School of Hospitality Management requirements. The product would have to perform the tasks mentioned above and in addition be easy to use, polished, reliable, and robust.

Ease of use would be paramount in importance because untrained student help would be used for data entry. This requirement mitigated against most commercial programs available from vendors serving the hospitality industry. The current generation of products is either controlled by complex commands or attempts to perform too many functions. Either approach results in needless complexity.

A polished, commercial caliber program was considered necessary because it would become a marketing tool. Products of the program, whether mailing labels or directories, would have to be attractive. Users of the program, whether student or faculty, would have to have confidence in it. Like Caesar's wife it would need both virtue and the appearance of virtue.

Reliability would be of the utmost importance considering the monumental effort of entering data and obtaining correct information.

Poorly written programs have been known to erase or corrupt bodies of data. A file on paper, once it has been shuffled, can be straightened given a large floor space and an army of secretaries. But data inside a computer memory cannot be reordered. Once Mr. Jones' address has been moved to Miss Smith's record, the database is useless. Vendor disclaimers of liability for consequential damage would suggest that one's own programs would be more reliable.

Finally, laboratory experience with students working with programs available to the hospitality industry suggests that the robust program has yet to arrive. There is nothing to compare with a group of students to bring out the flaws in a program, to stress it beyond its limits.

It was therefore concluded that there would be no advantage to buying an off-the-shelf product and some reason to write a program in-house. The locally produced program would have the added virtues of embodying custom features and be adaptable to change and future expansion. By building the program locally, the association would be able to expand its level of expertise in the computer area.

A negative factor was the realization that it would require a commitment by several faculty members over a considerable period of time to accomplish this goal. Experience has shown that about 10 lines of finished, debugged code per programmer day can be expected. A preliminary design showed that about 500 lines of code, or roughly 50 programmer days, would be required to provide a working program. Furthermore, progress on the program would uncover oversights in the original design and necessitate rework.

One additional factor supported local design and coding. Vendors typically provide executable programs but do not release the source code. This means there would be no means of recompiling for a new computer when the inevitable switch to a new generation of computer equipment arrived.

Program Design Revolves Around Floppy Disks

Once there was an informed decision to proceed, the first consideration was that the new program be designed to run on existing IBM PC computers with floppy disks. There would be planning for revisions to upgrade to PC XT or AT models. Although it might seem to be a disadvantage to use relatively slow and small floppy diskette storage, this in fact proved to be an advantage. First of all, the speed of most operations would be limited by printer speed, as in the case of mailing labels and alumni directories, or by CPU speed, as in the case of index formulation. An advantage of the floppy disks would be the ease of making backup copies of the data. The only disadvantage, lack of storage space on a floppy disk, would be overcome by splitting the data into alphabetical groupings, thus allowing more than one person to work on different sections of the database at the same time.

One additional choice remained, that of the source language. Because the database was largely text, the choice was between COBOL and BASIC or dBASE III to compiled forms. Of these, only dBASE III would allow that data entry to proceed simultaneously with program

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construction. With the other two languages, the data entry team would have to stand idle until a working program had been built. Design could thus begin on two fronts at the same time.

Program Involved Modular Makeup

The design technique was a top-down, modular design. This meant that the program would be built in sections from the top down, with each section being independently tested, then used as it was finished. The first objective would be to achieve the ability to add records and print a directory. The latter was especially important because it would allow the data collection team to begin to impose order on the tangled skein of conflicting information that had been collected.

Next in priority was that of a data entry module. Initial entry would be effected using dBASE III in its direct mode. However, this mode does not prevent accidental destruction of the database. As the body of data grew, so did the pressure to switch to a program. This limited what could be done to actual data entry and did not allow deletion or modification of existing data.

Work then proceeded to mailing labels and to data deletion and modification, the latter of which became a necessity after the initial configuration because the original design did not include the student identification number (which is the same as the social security number), the common thread which enables research of vital historic data. Subsequently, it became an urgent design consideration to provide a system that would be forgiving of operator errors so that it could be used by an untrained person. As each module was finished, it was tried by uncoached students. If they would not understand the menu at a glance or if they had any questions, the program would be reworked. There would be no requirement for documentation or directions to accompany the program. Additionally, there would be password security on any feature that could result in the permanent loss of any significant amount of data.

Database Needs Must Be Analyzed Early

Simultaneously, it was necessary to design the data structure. One important feature was the necessity to have two addresses for each alumnus, both home and business. A further complication was that mail could be directed to all home addresses, all business address or to whichever was designated as the mailing address. This considerable degree of complexity was necessitated by marketing considerations and by a last minute decision to include present students as well as alumni.

Clearly, it is necessary to decide what the database must contain before the design of the program can proceed very far. Also, there must be consideration of ways of collecting sources of information and safeguarding the information.

A form asking for an address update on the recipient and on any other alumni he or she might know about was inserted into each mailing. Other lists were culled for additional information. As results came in, students were put to work entering data. To protect the growing body of information, a grandfather, father, and son arrangement was used. The disk upon which data was entered today would be copied tomorrow. The copy

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would be designated the son, while the original became the father. In this way, the most that could be lost was a single day's work. If, as is often the case in computer work, the recovery effort was botched, then the grandfather disk stood as further insurance. At present, the society at Florida International University has established a fourth generation back-up disk to further ensure the integrity of its data.

The massive job of entering more than 3,300 records was speeded up by splitting the data body into first two and eventually five segments: a-b, c-f, g-m, n-s, t-z. Each was on a separate disk, the cost of which is currently 33 cents in bulk. To prevent corruption of the database, the students assisting in the project were required to turn off the computer whenever switching from one data segment to another.

Organization is the key to success in any large programming project. Teamwork becomes possible when the task is broken into modules which can be assigned to different individuals. Because the program would be written by faculty whose time would be preempted by other functions for long periods, it was necessary that the project be structured so that it could be picked up easily. In addition, relatively unskilled student help would be utilized. Both of these factors required a high degree of modularity in the design. Especially in the case of students it is necessary that massive tasks be broken into easily understandable pieces.

Once design reached the bottom levels and task modules were assigned to individual programmers, construction proceeded from the bottom up. The process is described as build a little, test a lot. As each module was built, it was tested on live data. On several occasions this resulted in the loss or corruption of entire floppy disks. However, the thorough backup of data prevented any permanent loss.

The initial design objectives of the program have been fulfilled. The size of the database is increasing daily. This smooth growth has resulted in a gradual decrease in confusion and workload. Already, it can be seen that additions to the program will be useful. Among these are such features as multiple printing of a single label and adaptability to smaller databases maintained by individual faculty members.

Because the program was converted to a compiled form, it is extremely fast and efficient and only limited by printer speed as was predicted. The installation of a laser printer will remove this limitation. A program in active use will grow to meet the needs of the dynamic organization it serves, so it is expected that this beginning will evolve into new functions. However, capability to meet change has its price: Program maintenance will continue into the indefinite future. This is infinitely preferable to the situation that results from buying a program from a vendor who may choose to terminate program maintenance at any time.

At present, the work at Florida International University has resulted in compiling the names, addresses and other pertinent data for over 1,300 alumni, a 39 percent level. With further development, it is estimated this level will double within the next year.

The formula that ensures a successful school/alumni relationship is not the computer system. It is the faculty, the students, and the alumni who spell out success for the association or society. Students must desire

to be a part of their alma mater after graduation. Encouragement should start with an orientation about the school during the first week of matriculation.

The most important part of this desire must be the constant maintenance of current addresses, without which the most sophisticated computerized alumni database system would be useless. Because of the nature of high job turnover in the hospitality industry, record updating becomes even more critical for the association or society. It is the individual's privilege, duty, and right, therefore, to maintain contact with his or her school. As long as this contact is secured, an organized association can go about its business of disseminating information and strengthening alliances.