



**Figure 5-11**  
Users of Multiple Database Applications

Recall from Chapter 1 that one of the definitions of information is “data presented in a meaningful context.” The professor can create information from this report because it shows the student data in a context that will be meaningful to the professor. Some reports, like the one in Figure 5-12, also compute values as they present the data. An example is the computation of *Mid Term Total* in Figure 5-12.

DBMS programs provide comprehensive and robust features for querying database data. For example, suppose the professor who uses the Student database remembers that one of the students referred to the topic *barriers to entry* in an office visit, but cannot remember which student or when. If there are hundreds of students and visits recorded in the database, it will take some effort and time for the professor to search through all office visit records to find that event. The DBMS, however, can find any such record quickly. Figure 5-13 (a) (on the next page) shows a **query** form in which the professor types in the keyword for which she is looking. Figure 5-13 (b) shows the results of the query.

## Why Are Database Application Programs Needed?

Forms, reports, and queries work well for standard functions. However, most applications have unique requirements that a simple form, report, or query cannot meet. For example, in an order-entry application what should be done if only a portion of a customer’s request can be met? If someone wants 10 widgets and we only have 3 in stock, should a backorder for 7 more be generated automatically? Or, should some other action be taken?

Application programs process logic that is specific to a given business need. In the Student database, an example application is one that assigns grades at the end of the term. If the professor grades on a curve, the application reads the breakpoints for each grade from a form, and then processes each row in the *Student* table, allocating a grade based on the break points and the total number of points earned.

The screenshot shows a web browser window titled 'Student Report with Emails'. The page content includes a table with the following data:

Student Name	Student Number	9-101	9-102	Mid Term	Total Points	Final Grade	Last Message
BAKER, ANDREA	1825	88	100	79	265		2/11/2010 For homework 1 do you want us to provide notes on our references?
LAU, SWEE	1644	75	90	90	255		3/15/2010 My group consists of Swee Lau and Stuart Nelson.
							3/15/2010 Could you please assign me to a group?

At the bottom of the page, it says 'Friday, March 05, 2010' and 'Page 1 of 1'.

**Figure 5-12**  
Example of a Student Report