

Database Design and Implementation  
Chapter 1 Conceptual Exercises

Questions	Answers
1.1.a.	No, it would not make sense to use a commercial DBMS to manage these records as the number of records is not sufficient enough (100 or so is too little).
1.1.b.	Features such as high consistency, availability, persistence for distributed DBMS and complex query optimization would not be needed.
1.1.c.	Using spreadsheet is not reasonable as it does not offer ACID (Atomicity, Consistency, Isolation, Duration).
1.2.	When storing large amount of personal data in a database, features like special datatypes and graph data structure is not needed.
1.3.a.	The data needs to be large enough to employ complex queries to obtain data. In this case, a DBMS will be needed for storage.
1.3.b.	Changes such as the need for concurrent access will be needed to make it worthwhile to use a database system.
1.4.a.	Version control system does not have a concept of a record. It just has a file and commit.
1.4.b.	The check-in/check-out process for DBMS is more complex than VCS. For instance, in DBMS, locking and transaction isolation are needed.
1.4.c.	<p>In VCS, commands such as</p> <pre>git commit -m "enter message"</pre> <p>is used to perform a commit. To undo,</p> <pre>git reset</pre> <pre>git checkout</pre> <p>could be used.</p> <p>Committing in DBMS is more complex, and often involves many database transactions and can have implications on data integrity.</p>
1.4.d.	<p>Many version control systems save updates in difference files, which are small files that describe how to transform the previous version of the file into the new one. If a user needs to see the current version of the file, the system starts with the original file and applies all the difference files to it.</p> <p>This strategy does not align well with DBMS. DBMS generally require rapid access to the current data rather than the history.</p>