1.6

1. Enterprise Information: sales, accounting, human resources;
2. Manufacturing: management of production, inventory, orders, supply chain;
3. Banking and finance;
4. Universities: registration, grades.
5. A file system is a piece of software that controls and arranges the files on a computer's storage media. DBMS(Database Management System) is known as a program for managing databases.
6. File-processing systems don't offer data backup or recovery in the event of a loss. When compared to file systems, DBMS has greater security methods and offers backup and recovery of data even if it is lost.
7. When compared to DBMS, file-processing systems are less complex. Because of the normalization process, DBMS have higher levels of data consistency.
8. A DMBS is made to coordinate and enable simultaneous access to data by different users. The simultaneous access to data is substantially more limited in a file processing system.

1.8

Physical data independence helps you to separate conceptual levels from the internal/physical levels. It allow us to provide a logical description of the database without the need to specify physical structures. Physical data independence gives us the freedom to modify the - Storage device, File structure, etc. without changing the definition of conceptual or view level.

1.9

* 1. When defining a database, the data types, structures, and restrictions of the information to be stored inside must be specified. Because there won't be any pre-established rules, if a DBMS doesn't permit defining databases, users may inadvertently define nonsensical data.
  2. The process of building a database entails placing the data on a storage medium under the management of the DBMS. If the DBMS isn't in charge of building the database, there won't be any organization.
  3. Functions like querying a database to retrieve specific data and creating reports from the data are examples of database manipulation. If the database management system (DBMS) is not in charge of altering the database, issues may arise when users attempt to do so.
  4. Multiple people and programs can access the same database at once when it is shared. It will be challenging for users to control database sharing within users if the DBMS isn't in charge of doing so.
  5. Protection covers security protection against unauthorized access as well as system protection against hardware or software failure. The likelihood that the database may be exposed to numerous security threats increases if the DBMS is not in charge of protection.

1.11

Data that enters the database are expected to maintain accuracy and also be consistent with the database structure. The component of the **database**that prevents both students from getting the **last seat**is called **transaction isolation**

So, when both students request for the last seat, only one of the students can get the seat.

When one student registers for the last seat of the course, then the next student would not register for the same seat or any other seat, because registration for the last seat has already been completed. The database will be locked for the second student during the period of transaction of the first student.

1.15

* + 1. A users table with users that includes details about each user's profile, including account name, age and etc.
    2. A friends table listing all the users that are connected to each user. This table may additionally provide information about the connection's type.
    3. A table of permissions listing which categories of friends are permitted to read specific user-uploaded content. For instance, a user might choose to share some images with relatives and not all of their friends.