DB - HW1

1.7

List four significant differecnces between a file-processing system and a DBMS.

Answer：

1. A file-processing system can only coordinate physical access of data, while a DBMS can coordinate both phisical and logical access.
2. A file-processing system only allow accessing data through the way determined in advance, while a DBMS allow doing this flexibly.
3. A file-processing system allows *multiple programs* access *diffrent data* at the same time, or 2 programs access *the same file* at the same time if they *both have read-only access* to it.

   On the contrary, a DBMS allows *multiple users* accessing *the same* data at the same time.
4. In a file-processing system, a file written by one program may be unreadable for another program.

   But in a DBMS, data duplications are reduced by make the data physically available to all the programs possessing access to it.

1.8

Explain the concept of phisical data independence and its importance in database system.

Answer：

Physical data independence means data stored in the database and application programs are mutually independent.

It is important for enabling us to modify the physical schema without changing the ogical schema, or, rewriting application programs. Thus, we can separate conceptual levels from internal or physical levels.

1.15

Describe at least three tables that might be used to store information in a social networking system such as Facebook.

Answer：

1. The *users* table
   ID, telephone, e-mail, password, username, birthday, self-introduction, ...
2. The *posts* table
   ID, text, video, image, time
3. The *friends* table

   ID, n_friend, friendID_1, firiendID_2, ...
4. The *Groups* table

   GroupID, GroupName, n_member, memberID_1, ...