1.7 ① Difficulty in accessing data

file-processing system is designed to allow pre-determined access to data, while a DBSM is designed to allow flexible access to data.

② Data redundancy and inconsistency

file-processing system may cause to inconsistency of an object. And the same information may be duplicated in several place.

③ Data isolation

data is stored in different files and filed may be in different formats. It's difficult to retrieve appropriate data.

④ Atomicity problems

It's difficult for a conventional file-processing system to ensure atomicity.

1.8 physical data independece, although the implementation of the simple structures at the logical level may involve complex phsical-level structures, the user of the logical level does not need to be aware of that.

importance: many users are not computer trained, developer hide the complexity from users through several levels of data abstraction, to simplify users' interactions with the system.

1.9. responsibility. 1. interaction with the file manager
2. integrity enforcement
3. security enforcement
4. backup and recovery
5. concurrency control

problems. 1. data stored in files can not be retrieved.
2. cause violation, which means the value may exceed the domain of attributes
3. Unauthorized user may access the database.
4. data could be lost permanently.
5. Consistency constraints may be violated despite proper integrity enforcement in each transaction.

1.15. Users: id, phone-number, email-address, account, password
following: id, following_id
publish: id, publish_works