

1)

SQL provides large-object data types for character data(**clob**) and binary data(**blob**). The letters “lob” in these data types stand for “Large Object”. For example, we may declare attributes

*book review clob(10KB)*

*image blob(10MB)*

*movie blob(2GB)*

- **blob**: binary large object – object is a large collection of uninterpreted binary data (whose interpretation is left to an application outside of the database system)
- **clob**: character large object – object is a large collection of character data

2)

The SQL standard includes the privileges **select, insert, update, delete, references, alter index (or all)**.

**grant**<privilege list>

**on**<relation name or view name>

**to**<user/role list>;

The notion of roles captures this concept. A set of roles is created in the database. Authorizations can be granted to roles, in exactly the same fashion as they are granted to individual users.

**create role** *instructor*; (new role)

**grant select on** *takes*

**to** *instructor*; (role instructor can ins, upd, del and sel – takes table)

**create role** *dean*;

**grant** *instructor* **to** *dean*;

**grant** *dean* **to** *Satoshi*; (role dean have all the privil of instructor Satoshi user has the role of dean)

User is an individual who can be granted privileges and roles