**Explain the four informal guidelines discussed in Section 14.1.**

* Making sure the semantics of the attributes are clear in the schema is important, because the semantics of a relation (i.e. what a relation means and what it stands for) helps to drastically improve the design of the relation schema. Reducing redundant information in tuples helps to minimize the storage space needed for a database. We must also ensure that no anomalies occur in the database, as this prevents the loss of integrity for the relations. NULL values in tuples must also be limited, because this wastes a lot of space, and also convolutes the meaning of these tuples. Spurious tuples are also unwanted, as they contain information that is invalid and can cause a lot of relationships to be damaged or made unclear.

**Explain the terms functional dependency and multi-valued dependency.**

* Functional dependency is a relationship where one attribute is responsible for uniquely determining another attribute. A multi-valued dependency occurs when

**Review the formal definitions of these terms: superkey; key (see Section 14.3.3).**

* Superkey – a combination of attributes that can be used to uniquely identify a database record
* Key – a superkey with the added characteristic that removal of any attribute from that key causes the key to no longer be a superkey

**Explain BCNF (for Monday, see Section 14.5) and 4NF (for Wednesday, see Section 14.6) by giving an example relation and proving whether its schema conforms (or fails to conform) to the definitions of each normal form**.

* BNCF is an extension of 3NF that states that all data in a table must depend only on that table’s primary key, and not on any other field in the table. BNCF cannot have any overlapping candidate keys.