INFORMAL DESIGN GUIDELINES FOR RELATIONAL SCHEMA

1.Semantics of the Attributes

2.Reducing the Redundant Value in Tuples.

3.Reducing Null values in Tuples.

4.Dissallowing spurious Tuples.

1. Semantics of the Attributes

Whenever we are going to form relational schema there should be some meaning among the attributes.This meaning is called semantics.This semantics relates one attribute to another with some relation.

Eg:

USN No

	Student name	Sem

2. Reducing the Redundant Value in Tuples

Mixing attributes of multiple entities may cause problems

Information is stored redundantly wasting storage

Problems with update anomalies

     Insertion anomalies

     Deletion anomalies

     Modification anomalies

	Student name	Sem

Eg:

Dept No	Dept Name

If we integrate these two and is used as a single table i.e Student Table

USN No	Student name	Sem	Dept No	Dept Name

Here whenever if we insert the tuples there may be 'N' stunents in one department,so Dept No,Dept Name values are repeated 'N' times which leads to data redundancy.

Another problem is updata anamolies ie if we insert new dept that has no students.

If we delet the last student of a dept,then whole information about that department will be deleted

If we change the value of one of the attributes of aparticaular table the we must update the tuples of all the students belonging to thet depy else Database will become inconsistent.

Note: Design in such a way that no insertion ,deletion,modification anamolies will occur

3. Reducing Null values in Tuples.

Note: Relations should be designed such that their tuples will have as few NULL values as possible

 Attributes that are NULL frequently could be placed in separate relations (with the primary key)

 Reasons for nulls:

        attribute not applicable or invalid

        attribute value unknown (may exist)

value known to exist, but unavailable

4. Disallowing spurious Tuples

Bad designs for a relational database may result in erroneous results for certain JOIN operations

The "lossless join" property is used to guarantee meaningful results for join operations

Note: The relations should be designed to satisfy the lossless join condition. No spurious tuples should be generated by doing a natural-join of any relations.