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Subject - DBMS Assignment to Test-2

8. Explain design guidelines for relational schema in detail.

Guideline 1:
Each tuple in a relation should ~~be~~ represent one entity or relationship instance. This applies to individual ~~as~~ relations and their attributes.
Attributes of different entities should not be mixed in the same relation.
Only foreign keys should be used to refer other entities.
Entity and relationship attributes should be kept apart as much as possible.
The schema design should be such that it can be easily explained, relation by relation.

Eg.

Employee

Ename	SSn	Bdate	Dnumber

SSn: P.K. Dnumber: F.K

PROJECT

Pname	Pnumber	Plocation	Dnum

Pnumber: P.K Dnum: F.K

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Department

F.K

| Dname | Dnumber | Dmgr_SSn |

P.K

Dept_Location

F.K

| Dnumber | Dlocation |

P.K

works on

F.K F.K.

| SSn | Pnumber | Hours |

PK.

Guideline 2:

Design a schema that does not suffer from insertion, deletion and update anomaly.

If there ~~is~~ are any anomalies present, then note them so that applications can be made to take them in account.

In general, it is advisible to use anomaly free base relations and to specify views that include the joins for placing together the attributes frequently referenced in important queries.

Guideline 3:

Relations should be designed such that their tuples will have as few ~~as~~ Null values as possible.

Attributes that are Null ~~at~~ frequently should be placed in seperate relations with the primary key.

Example :-
If only 10% students own a ~~laptop~~ vehicle, ~~it is~~ then it is better not to include vehicle-number in Students relation.
Rather create a new relation ~~Student-vehicles~~ Student_vehicles (PID, vehicle_number).

Guideline 4 :-
Design of relation schemas should be such that they can be joined with equality on attributes that are either primary keys or foreign keys in a way that guarantees that no ~~fo~~ spurious tuples are generated. Avoid relations that contain matching attributes that are not (foreign key, ~~or~~ primary key) combinations because joining on such attributes may produce spurious tuples.