

NORMALIZATION

Normalization is the process of splitting the bigger table into many small tables without changing its functionality.

It is generally carried out during the design phase of SDLC.

Advantages

- 1) it reduces the redundancy (unnecessary repeatation of data)
- 2) avoids problem due to delete anomaly (inconsistency)

Normalization is a step-by-step process and in each step, we have to perform some activities.

STEPS IN NORMALIZATION

- 1) 1NF – 1st Normal form
- 2) 2NF – 2nd Normal form
- 3) 3NF – 3rd Normal form

1NF

- We should collect all the required attributes into 1 or more bigger entities.
- We have to assume no 2 records are same (i.e, records should not be duplicated)
- Identify the probable primary key

At the end of 1NF, our data looks like this,

<u>COLLEGE</u>
RegNo - PK
Sname
Semester
DOB
MailID
Phone
BookNo - PK
Bname
Author
DOI
DOR
Fine

2NF

To perform 2NF,

- The tables have to be in 1NF
- Here, we identify all the complete dependencies and move them separately into different tables.

At the end of 2NF, our data looks like this,

STUDENTS	BOOKS
RegNo - PK	BookNo - PK
Sname	RegNo - FK
Semester	Bname
DOB	Author
MailID	DOI
Phone	DOR
	Fine

3NF

The table will have to be in 2NF

Here, we identify all the partial dependencies and move such columns to a separate table.

STUDENTS	BOOKS	LIBRARY
RegNo - PK	BookNo - PK	BookNo - FK
Sname	Bname	RegNo - FK
Semester	Author	DOI
DOB		DOR
MailID		Fine
Phone		

Disadvantage of Normalization

The only minor disadvantage is we may have to write complex queries as we have more number of tables to be accessed.

Denormalization is the process of combining more than 1 smaller table to form 1 bigger table is called as denormalization.

CODD rules (Differentiates between DBMS & RDBMS)

- 1) should support NULL values
- 2) should support creation of relationship between tables
- 3) should support DDL, DML, TCL
- 4) should support constraints like PK, Unique, CHK
- 5) should support query techniques like sub - queries, joins, grouping etc.

Oracle 9i Features (i means internet)

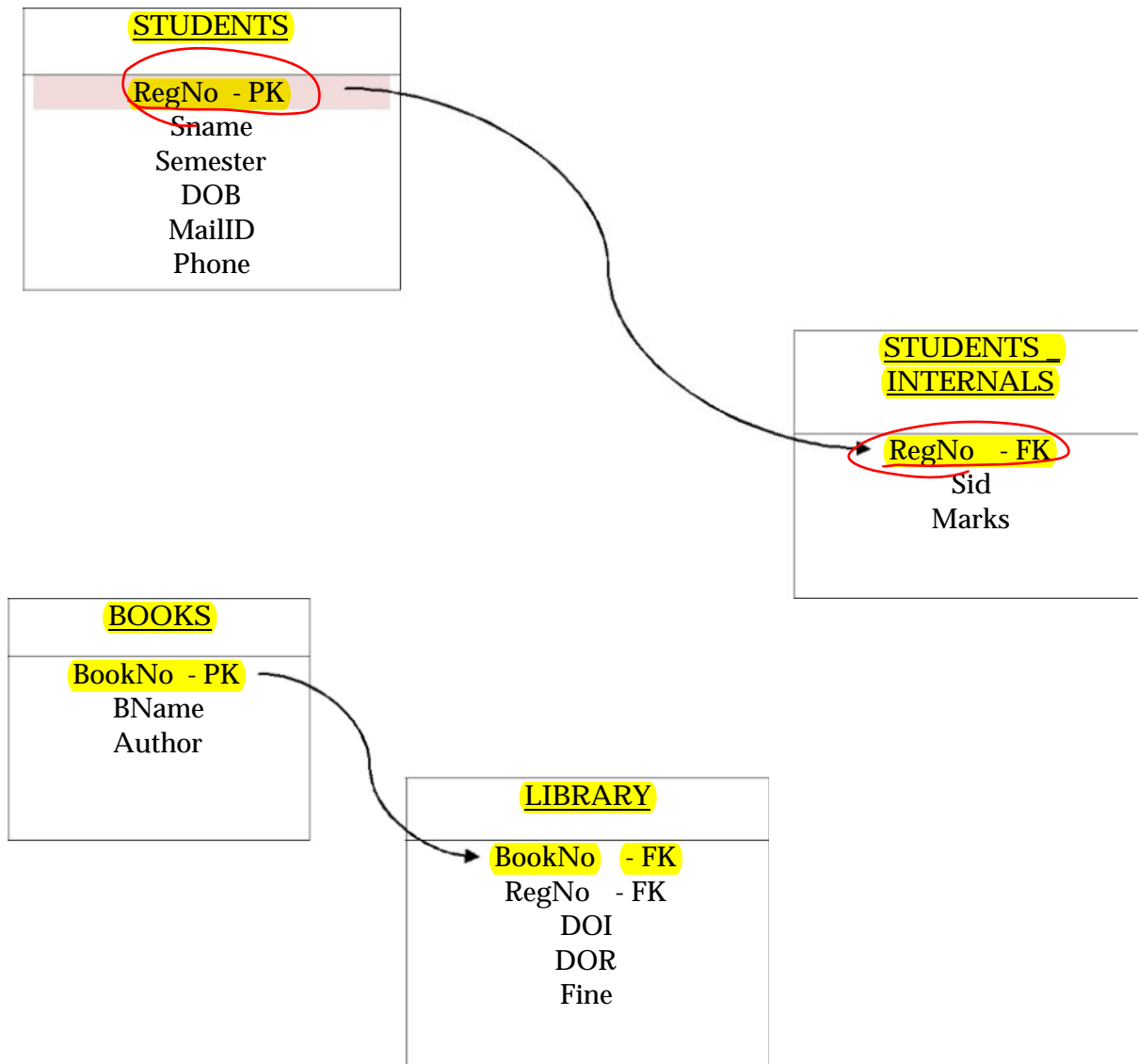
- TIMESTAMP datatype
- SYSTIMESTAMP function
- ANSI style joins
- Renaming a column

Oracle 10g features (g means grid)

- Recycle Bin

ERD - Entity Relationship Diagram

It is the pictorial representation of all the entities and their relationships (tables).



***** THE END *****

