Name : Ruby.S

Batch : 2022 – 7607

Enrolment number : EBEON0722634378
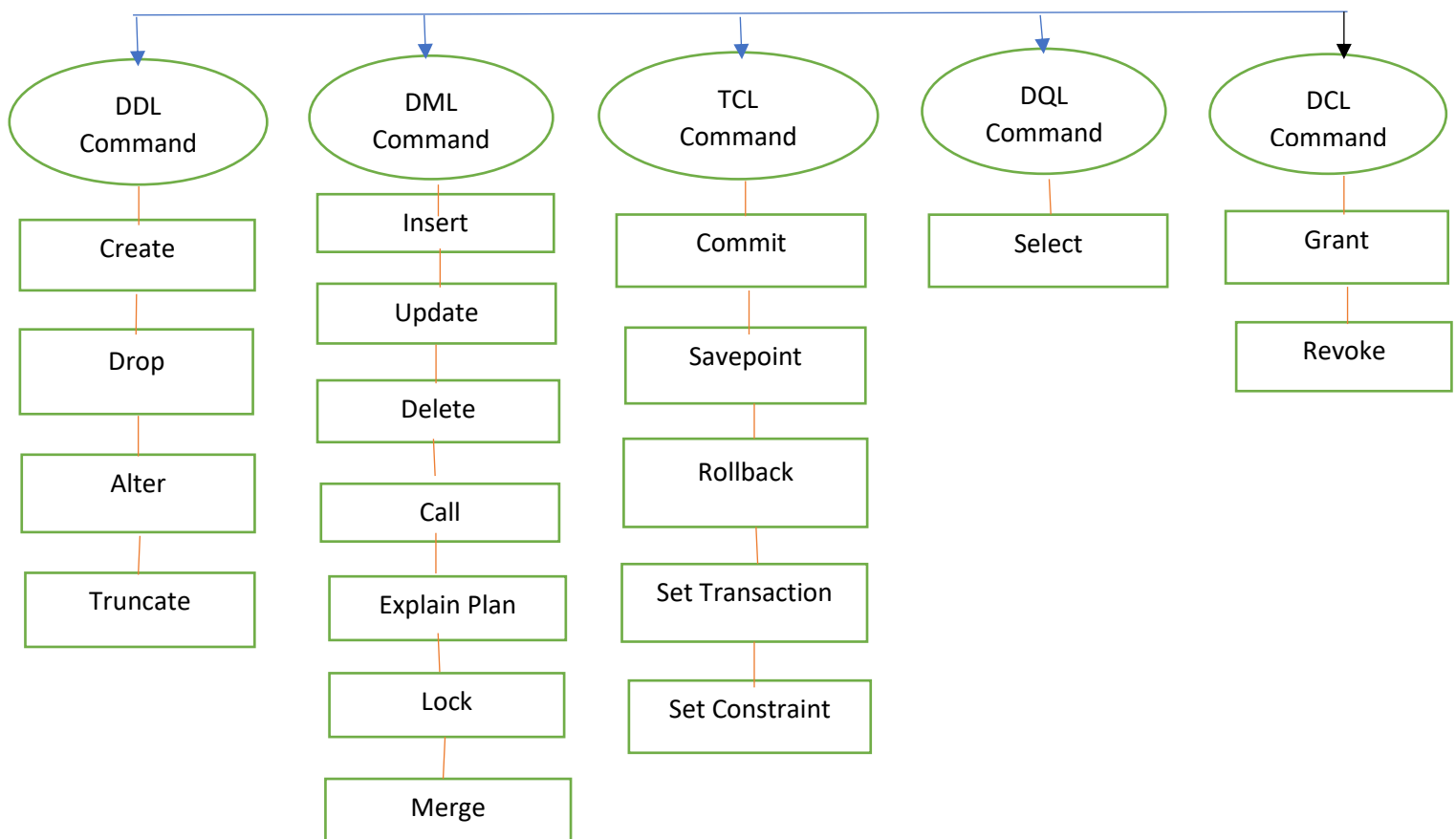
SQL Commands

SQL (Structured Query Language)

These SQL commands are mainly categorized into 5 :

1. DDL - Data Definition Language
2. DML – Data Manipulation Language
3. TCL – Transaction Control Language
4. DQL – Data Query Language
5. DCL - Data Control Language

SQL Command

DDL Command	DML Command	TCL Command	DQL Command	DCL Command
Create	Insert	Commit	Select	Grant
Drop	Update	Savepoint		Revoke
Alter	Delete	Rollback		
Truncate	Call	Set Transaction		
	Explain Plan	Set Constraint		
	Lock			
	Merge			

DDL (Data Definition Language)

DDL is actually consists of the SQL commands that can be used to define the database schema.

It simply deals with description of the database schema and it is used to create and modify the structure of database object.

DDL is set of SQL command used to create, modify and delete database structure but not data.

These command is normally used by a general user ,we should be accessing the database via an application.

DDL Commands:

      1.Create

      2.Drop

      3.Alter

      4.Truncate

      5.Comment

      6.Rename.

CREATE: This command is used to create the database or its objects like (table, index, function, views, store procedure and trigger)

Syntax

CREATE TABLE table_name(column_name1 datatype(size)

Eg:

create table stud(name,age,roll) values ('ruby',20,939);

DROP: This command is use to delete object from the database.

 DROP TABLE table_name

Eg:

Drop table stud;

ALTER: This is used to alter the structure of database.

To add a new column in table

ALTER TABLE table_name ADD (column_name..)

To modify existing column in table

ALTER TABLE table_name MODIFY (column_name..)

Eg:

Alter table stud add phone_number varchar(20);

TRUNCATE: This is used to remove all records from a table , including all space allocation for the records are removed.

TRUNCATE TABLE table_name;

Eg:

Truncate table stud;

RENAME: This is used to rename an object existing in the database.

Syntax

RENAME OLD_table_name TO new_table_name;

Eg:

Rename stud to student;

DML(Data Manipulation Language):

The SQL commands that deals with the manipulation of data present in the database belong to DML or Data Manipulation Language. And this include most of SQL statements.

 It is a component of the SQL statement that controls, access to data and to database.

Basically, DCL statement are grouped with DML statements.

DML Commands:

1. Insert
2. Update
3. Delete
4. Lock
5. Call
6. Explain Plan
7. Merge.

INSERT: It is used to insert data into a table.

Syntax

INSERT INTO table_name(column
_name1,column_name2,…column_namen;)
VALUE(value1,value2,…valuen);

Eg:

Insert into stud(name varchar(30),age,roll number) values ('payal',20,939);

UPDATE: It is used to update exsiting data within a table.

Syntax

UPDATE table_name
SET(column_name1=value1,column_name2=value2);

Eg:

Update stud set phone_number=6379563310 where name='ruby';

DELETE: It is used to delete records from a database table.

Syntax

DELETE FROM table_name;

DELETE FROM table_name WHERE column1=value;

Eg:

Delect from stud where name ='priyas';

TCL(Transaction Control Language);

TCL is a another category of SQL clauses, this TCL commands deals with the transaction within the database

TCL Commands:

1. Commit
2. Rollback
3. Savepoint
4. Set Transaction.

COMMIT: commit is a transaction,saving all transactions into database and end current transaction and make all changes permanently.

Syntax

COMMIT;

ROLLBACK: It rollbacks a transaction incase of any error occurs(undoing operation).

Syntax

ROLLBACK;

Eg:

SAVEPOINT: Set a savepoint within a transaction.

Syntax

SAVEPOINT savepoint_name;

DQL (Data Query Language):

DQL statements is used to perform the queries on data with schema object.

The purpose of DQL is to get some schema relation based on query passed to it.

We can define DQL component of SQL statement that allows data from database.

This command include SELECT statement it also allow data out of database to perform operation with it .

<u>DQL commands:</u>

1. Select.

SELECT: It is used to retrieve data from the database.

<u>Syntax</u>

SELECT*FROM

SELECT column1,column2,…column n;

FROM table_name;

DCL(Data Control Language):

DCL includes commands such as GRANT and REVOKE which mainly deals with the rights, permissions and other controls of the database system.

<u>DCL Command;</u>

1. Grant
2. Revoke

GRANT: This command gives user access privileges to the database.

<u>Syntax</u>

GRANT object_privileges ON table_name TO user_name1,user_name2,…user_name n;

REVOKE: This command withdraws the user's access privileges give by using the GRANT command.

<u>Syntax</u>

REVOKE object_privileges ON table_name FROM user1,user2,..

user n;

FULL SYNTAX:

In This Program I have Used….

(CREATE, INSERT, ALTER, UPDATE, DELETE, TRUNCATE, DROP)

create database stud;

use stud;

create table stud(name varchar(30),age int,roll int);

insert into stud (name,age,roll) values('ruby',20,939);

select * from stud;

Name	age	roll
ruby	20	939

Insert into stud values('aabu',23,940);

Insert into stud values('swathi',21,941);

Insert into stud values('priya',22,942);

Select * from stud;

name	age	roll
ruby	20	939
aabu	23	940
swathi	21	941
priya	22	942

Alter table stud add phone_number varchar(20);

Select * from stud;

name	age	roll	Phone_number
ruby	20	939	null
aabu	23	940	null
swathi	21	941	null
priya	22	942	null

Update stud set phone_number=6379563310 where name ='aabu';

Select * from stud;

name	age	roll	Phone_number
ruby	20	939	null
aabu	23	940	6379563310
swathi	21	941	null
priya	22	942	null

Delete from stud where name='priya';

Select * from stud;

name	age	roll	Phone_number
ruby	20	939	null
aabu	23	940	6379563310
swathi	21	941	null

Truncate table stud;

Select * from stud;

name	age	roll	Phone_number
ruby	20	939	null
aabu	23	940	6379563310
swathi	21	941	null

Desc stud;

field	type	null	key	default	extra
name	Varchar(30)	yes		null	
age	int	yes		null	
roll	int	yes		null	
Phone_number	Varchar(20)	yes		null	

Drop table stud;

In This Program I have Used….

(SELECT, DISTINCT, COUNT)

Create database edu;

Use edu;

create table edu(name varchar(30),age int,roll_number int);

insert into edu (name,age,roll) values('ruby',20,939);

Insert into edu values('aabu',23,940);

Insert into edu values('swathi',21,941);

Insert into edu values('priya',22,942);

Insert into edu values('lidi',25,943);

Insert into edu values('kiruba',27,944);

Insert into edu values('vino',22,945);

Select * from edu;

name	age	Roll_number
ruby	20	939
aabu	23	940
swathi	21	941
priya	21	942
lidi	24	943
kiruba	26	944
vino	22	945

Select distinct age from edu;

age
20
23
21
21
24
26
22

Select count(age) as countage from edu;

countage
7

Select count(distinct age) as countage from edu;

countage
6

Select count (*) from edu;

countage
7

Select count(age) as countage from edu where age=21;

countage
2

Select age from edu;

age
20
23
21
21
24
26
22

In This Program I have Used….

(JOINT, INNER JOINT, LEFT JOINT, RIGHT JOINT, LEFT OUTER JOINT)

Create database edu1;

Use edu1;

create table edu1(name varchar(30),age int,roll_number int,address varchar(20));

insert into edu1 (name,age,roll_number,address) values('ruby',939,20,ooty);

Insert into edu1 values('aabu',940,23,chennai);

Insert into edu1 values('swathi',941,21,bangalore);

Insert into edu1 values('priya',942,22,coimbatore);

Insert into edu1 values('lidi',943,25,bangalore);

Insert into edu1 values('kiruba',944,27,pondicherry);

Insert into edu1 values('vino',945,22,ooty);

Select * from edu1;

name	Roll_number	age	address
ruby	939	20	ooty
aabu	940	23	chennai
swathi	941	21	bangalore
priya	942	22	coimbatore
lidi	943	25	bangalore
kiruba	944	27	pondicherry
vino	945	21	ooty

Create database edu2;

Use edu2;

create table edu2(roll_number int,sub1 int,sub2 int);

insert into edu1 (roll_number,sun1,sub2) values(939,57,60);

Insert into edu1 values(940,80,93);

Insert into edu1 values(941,66,75);

Insert into edu1 values(942,79,49);

Insert into edu1 values(943,92,79);

Insert into edu1 values(944,85,81);

Insert into edu1 values(945,70,57);

Select * from edu2;

Roll_number	Sub1	Sub2
939	57	60
940	80	93
941	66	75
942	79	49
943	92	79
944	85	81
945	70	57

Select edu1.name,edu2.sub2 from edu1 inner joint edu2 on edu1.roll_number;

name	Sub2
ruby	60
aabu	93
priya	49
lidi	79
kiruba	81

Select edu1.name,edu2.sub2 from edu1 left join edu2 on edu1.roll_number=edu2.roll_number;

name	Sub2
ruby	60
aabu	93

swathi	NULL
priya	49
lidi	79
kiruba	81
vino	NULL

Select edu1.name,edu2.sub2,edu2.sub1 from edu1 right join edu2 on edu1.roll_number=edu2.roll_number;

name	Sub1	Sub2
ruby	57	60
aabu	80	93
NULL	66	75
priya	79	49
lidi	92	79
kiruba	85	81
NULL	70	57

Select edu1.name,edu1.age,edu2.sub2,edu2.sub1 from edu1 left outer Join edu2 on edu1.roll_number=edu2.roll_number;

name	age	Sub1	Sub2
ruby	20	57	60
aabu	23	80	93
swathi	21	NULL	NULL
priya	22	79	49
lidi	25	92	79
kiruba	27	85	81
vino	21	NULL	NULL

In This Program I have Used….

(COMMIT, SAVEPOINT, ROLLBACK)

Create database Student;

Use student;

create table edu(name varchar(30),roll_number int,email);

insert into edu (name,age,roll) values('ruby',939,ruby@gmail.com);

Insert into edu values('aabu',940,aabu@gmail.com);

Insert into edu values('swathi',941,swathi@gmail.com);

Insert into edu values('priya',942,priya@gmail.com);

Insert into edu values('lidi',943,lidi2gmail.com);

Insert into edu values('kiruba',944,kiruba@gmail.com);

Insert into edu values('vino',945,vino@gmail.com);

Select * from student;

name	Roll_number	mail
ruby	939	ruby@gmail.com
aabu	940	aabu@gmail.com
swathi	941	swathi@gmail.com
priya	942	priya@gmail.com
lidi	943	lidi2gmail.com
kiruba	944	kiruba@gmail.com
vino	945	vino@gmail.com

Delete from student;

Insert into student values('swathi',941, swathi@gmail.com);

Insert into student values('priya',942, priya@gmail.com);

Insert into student values('lidi',941, lidi@gmail.com);

Insert into student values('vino',941, vino@gmail.com);

Select * from student;

name	Roll_number	mail
swathi	941	swathi@gmail.com
priya	942	priya@gmail.com
lidi	943	lidi2gmail.com
vinothini	945	vino@gmail.com

Start transaction;

Commit;

Savepoint insertion;

Update student set name='vinothini' where roll_number=945;

Select * from student;

name	Roll_number	mail
swathi	941	swathi@gmail.com
priya	942	priya@gmail.com
lidi	943	lidi2gmail.com
vinothini	945	vino@gmail.com

Save updation;

Rollback to insertion;

name	Roll_number	mail
swathi	941	swathi@gmail.com
priya	942	priya@gmail.com
lidi	943	lidi2gmail.com
vino	945	vino@gmail.com

Update student set name='kaviya' where roll_number=942;

name	Roll_number	mail
swathi	941	swathi@gmail.com

kaviya	942	priya@gmail.com
lidi	943	lidi2gmail.com
vino	945	vino@gmail.com

Savepoint updation;

Rollback updation;

Select * from student;

name	Roll_number	mail
swathi	941	swathi@gmail.com
kaviya	942	priya@gmail.com
lidi	943	lidi2gmail.com
vino	945	vino@gmail.com

In This Program I have Used

(UNION, COUNT, GROUP BY, ORDER BY, CONCAT)

create database unions;

use unions;

create table stud_details(id int,student_id int,street_address_1 varchar(30),street_address_2 varchar(30),city varchar(60),state varchar(60),phone_number varchar(15),email varchar(64),joined_date int);

insert into stud_details values(1,111,'ambethkar nager','darlington bridge','ooty','tamil nadu',6379563310,'ruby@gmail.com',01-10-2022);

insert into stud_details values(2,222,'ambethkar nager','darlington bridge','coonoor','tamil nadu',6334563310,'aabu@gmail.com',01-10-2022);

insert into stud_details values(3,333,'ambethkar nager','darlington bridge','bedford','tamil nadu',6334567654,'lidi@gmail.com',02-10-2022);

insert into stud_details values(4,444,'ambethkar nager','darlington bridge','simspark','tamil nadu',9454567654,'kiru@gmail.com',04-10-2022);

insert into stud_details values(5,555,'ambethkar nager','darlington bridge','bedford','tamil nadu',9454567689,'bueal@gmail.com',02-10-2022);

insert into stud_details values(6,666,'ambethkar nager','neru nager','coonoor','tamil nadu',9454582689,'blue@gmail.com',03-10-2022);

select * from stud_details;

id	Student_id	Student_address_1	Student_address_2	city
1	111	Ambethkar nager	Darlington bridge	Ooty
2	222	Ambethkar nager	Darlington bridge	Coonoor
3	333	Ambethkar nager	Darlington bridge	Bedford
4	444	Ambethkar nager	Darlington bridge	Simspark
5	555	Ambethkar nager	Darlington bridge	Bedford
6	666	Ambethkar nager	Neru nager	coonoor

state	Phone_number	email	Joined_date
Tamil nadu	6379563310	ruby@gmail.com	2031
Tamil nadu	6334563310	aabu@gmail.com	2031
Tamil nadu	6334567654	lidi@gmail.com	2030
Tamil nadu	9454567654	kiru@gmail.com	2028
Tamil nadu	9454567689	bueal@gmail.com	2030
Tamil nadu	9454582689	blue@gmail.com	2029

create table stud_mark(id int,student_id int,semester varchar(20),sub_1 int,sub_2 int,sub_3 int,sub_4 int,sub_5 int);

insert into stud_mark values(1,111,'sem I',56,67,78,90,50);

insert into stud_mark values(2,222,'sem I',56,50,67,34,78);

insert into stud_mark values(3,333,'sem I',34,78,63,84,96);

insert into stud_mark values(4,444,'sem I',34,56,90,84,96);

insert into stud_mark values(5,555,'sem I',34,56,90,0,96);

insert into stud_mark values(6,666,'sem I',34,56,90,60,96);

insert into stud_mark values(7,777,'sem I',34,56,90,63,96);

insert into stud_mark values(8,888,'sem I',64,93,71,63,96);

insert into stud_mark values(9,999,'sem I',64,79,43,72,96);

select * from stud_mark;

Id	Student_id	semester	Sub_1	Sub_2	Sub_3	Sub_4	Sub_5

1	111	Sem I	56	67	78	90	50
2	222	Sem I	56	50	67	34	78
3	333	Sem I	34	78	63	84	96
4	444	Sem I	34	56	90	84	96
5	555	Sem I	34	56	90	0	96
6	666	Sem I	34	56	90	60	96
7	777	Sem I	34	56	90	63	96
8	888	Sem I	64	93	71	63	96
9	999	Sem I	64	79	43	72	96

select id,student_id from stud_details union select id,student_id from stud_mark;

id	Student_id
1	111
2	222
3	333
4	444
5	555
6	666
7	777
8	888
9	999

select count(*) from stud_mark;

count(*)
9

select count(*) from stud_details;

count(*)
6

select group_concat(id) from stud_details;

Group concat(id)
1,2,3,4,5,6

select group_concat(id) from stud_mark;

Group concat(id)
1,2,3,4,5,6,7,8,9

select id,student_id from stud_details union select id,student_id from stud_mark group by student_id;

id	Student_id
1	111
2	222
3	333
4	444
5	555
6	666
7	777
8	888
9	999

Select id,student_id,street_address_1,street_address_2,city,state, phone_number,email from stud_details union select id,student_id,semester,sub_1,sub_2,sub_3,sub_4,sub_5 from stud_mark group by student_id;

id	Student_id	Student_address_1	Student_address_2
1	111	Ambethkar nager	Darlington bridge
2	222	Ambethkar nager	Darlington bridge
3	333	Ambethkar nager	Darlington bridge
4	444	Ambethkar nager	Darlington bridge
5	555	Ambethkar nager	Darlington bridge
6	666	Ambethkar nager	Neru nager
1	111	Sem I	56

2	222	Sem I	56	
3	333	Sem I	34	
4	444	Sem I	34	
5	555	Sem I	34	
6	666	Sem I	34	
7	777	Sem I	34	
8	888	Sem I	64	
9	999	Sem I	64	

city	state	Phone_number	email
ooty	Tamil nadu	6379563310	ruby@gmail.com
coonoor	Tamil nadu	6334563310	aabu@gmail.com
bedford	Tamil nadu	6334567654	lidi@gmail.com
simspark	Tamil nadu	9454567654	kiru@gmail.com
bedford	Tamil nadu	9454567689	bueal@gmail.com
coonoor	Tamil nadu	9454582689	blue@gmail.com
67	78	90	50
50	67	34	78
78	63	84	96
56	90	84	96
56	90	0	96
56	90	60	96
56	90	63	96
93	71	63	96
79	43	72	96

select id,student_id,street_address_1,street_address_2,city,state,
phone_number,email from stud_details union select

id,student_id,semester,sub_1,sub_2,sub_3,sub_4,sub_5 from
stud_mark group by student_id order by student_id;

id	Student_id	Street_address_1	Street_address_2	city
1	111	Ambethkar nager	Darlington bridge	Ooty
1	111	Sem I	56	67
2	222	Ambethkar nager	Darlington bridge	Coonoor
2	222	Sem I	56	50
3	333	Ambethkar nager	Darlington bridge	Bedford
3	333	Sem I	34	78
4	444	Ambethkar nager	Darlington bridge	Simpark
4	444	Sem I	34	56
5	555	Ambethkar nager	Darlington bridge	Bedford
5	555	Sem I	34	56
6	666	Ambethkar nager	Darlington bridge	Coonoor
6	666	Sem I	34	56
7	777	Sem I	34	56
8	888	Sem I	64	93
9	999	Sem I	64	79

state	Phone_number	email
Tamil nadu	6379563310	ruby@gmail.com
78	90	50
Tamil nadu	6334563310	aabu@gmail.com
67	34	78
Tamil nadu	6334567654	lidi@gmail.com
63	84	96
Tamil nadu	9454567654	kiru@gmail.com
90	84	96
Tamil nadu	9454567689	bueal@gmail.com
90	0	96
Tamil nadu	9454582689	blue@gmail.com
90	60	96
90	63	96
71	63	96
43	72	96