

SQL ASSIGNMENT 1

NAME: Ananya Prasad

REGNO: 20BCE1093

Database - The database is a collection of inter-related data which is used to retrieve, insert and delete the data efficiently. It is also used to organize the data.

Database Management System - Database management system is a software which is used to manage the database. It provides an interface to perform various operations like database creation, storing data in it, updating data, creating a table in the database and a lot more.

Relational Database - It is a DBMS in which the database is organized and accessed according to the relationships between data items. In a relational database, relationships between data items are expressed by means of tables.

Schema - The overall design of a database is called schema. It is the skeleton structure of the database. It represents the logical view of the entire database.

View - This view represents the structure that the user must interface with in order to extract data from the database.

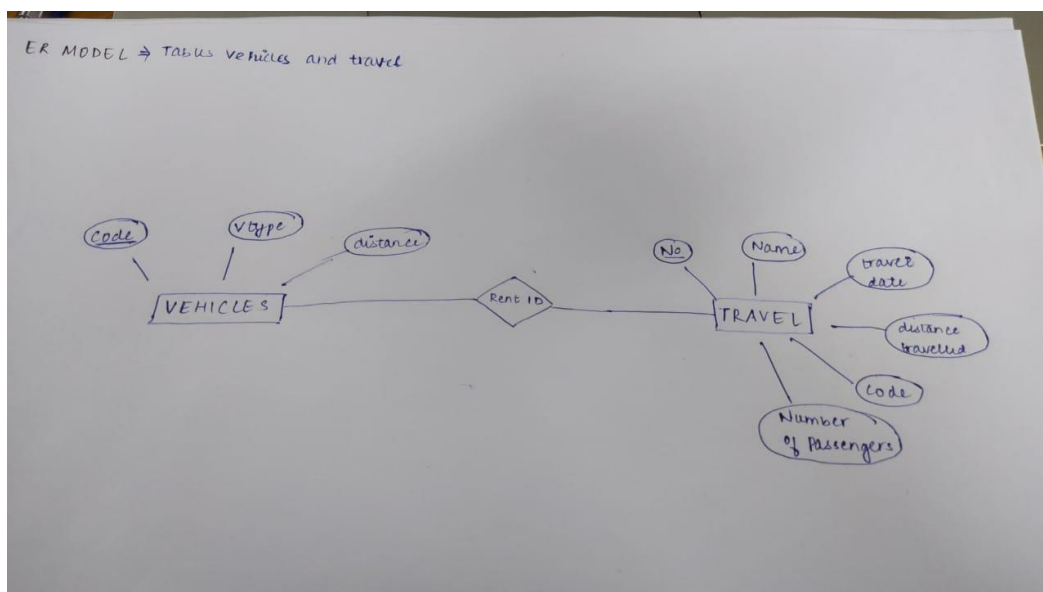
Logical view - How the data appear to the user to be stored.

Physical view - How the data are actually physically stored on the storage medium used in the database management system.

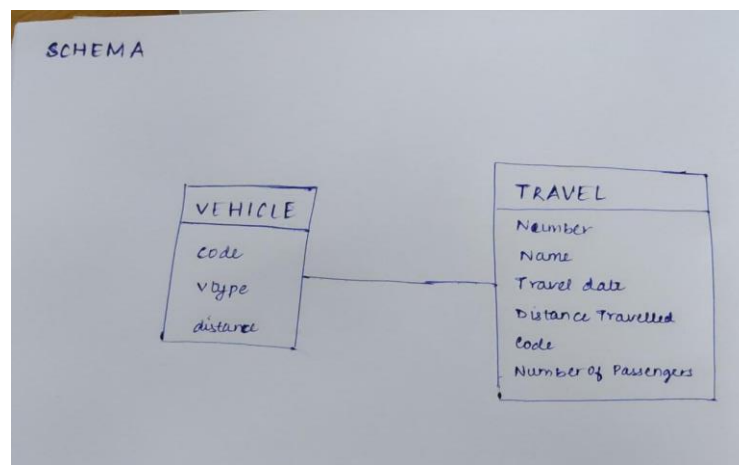
Instance – Current state of database i.e. records of fields at a particular time.

Attributes – Components or fields of a table.

ER MODEL



SCHEMA



SQL QUERIES

Create database and use it:

```
mysql> Create database MyFirstDatabase;
Query OK, 1 row affected (0.03 sec)

mysql> Use MyFirstDatabase
Database changed
```

Create the table and insert the values – use select * to display – alter table to add the column in the existing table.

```
ERROR 4028 (HY000): A table must have at least one visible column.
mysql> CREATE TABLE vehicle(code int(3) primary key, vtype char(20), perkm int(3));
Query OK, 0 rows affected, 2 warnings (0.09 sec)

mysql> insert into vehicle values(101, 'Volvo bus', 160);
Query OK, 1 row affected (0.02 sec)

mysql> insert into vehicle values(102, 'AC deluxe bus', 150);
Query OK, 1 row affected (0.01 sec)

mysql> insert into vehicle values(103, 'Ordinary bus', 90);
Query OK, 1 row affected (0.01 sec)

mysql> insert into vehicle values(104, 'Ordinary car', 20);
Query OK, 1 row affected (0.01 sec)

mysql> insert into vehicle values(105, 'SUV', 40);
Query OK, 1 row affected (0.01 sec)

mysql> select * from vehicle;
ERROR 1146 (42S02): Table 'myfirstdatabase.vehicle' doesn't exist
mysql> select * from vehicle;
```

```

+-----+-----+-----+
| code | vtype          | perkm |
+-----+-----+-----+
| 101 | Volvo bus      | 160   |
| 102 | AC deluxe bus  | 150   |
| 103 | Ordinary bus   | 90    |
| 104 | Ordinary car   | 20    |
| 105 | SUV            | 40    |
+-----+-----+-----+
5 rows in set (0.01 sec)

mysql> alter table vehicle
-> add comfort char(20);
Query OK, 0 rows affected (0.05 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> select * from vehicle;
+-----+-----+-----+-----+
| code | vtype          | perkm | comfort |
+-----+-----+-----+-----+
| 101 | Volvo bus      | 160   | NULL    |
| 102 | AC deluxe bus  | 150   | NULL    |
| 103 | Ordinary bus   | 90    | NULL    |
| 104 | Ordinary car   | 20    | NULL    |
| 105 | SUV            | 40    | NULL    |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)

```

Using update to add the values to the altered table:

```

ERROR 1136 (21S01): Column count doesn't match value count at row 1
mysql> update vehicle set comfort = 'Medium' where code=101;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update vehicle set comfort = 'High' where code=102;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update vehicle set comfort = 'Low' where code=103;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update vehicle set comfort = 'Medium' where code=104;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update vehicle set comfort = 'High' where code=105;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select * from vehicle
-> select * from vehicle;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL
server version for the right syntax to use near 'select * from vehicle' at line 2
mysql> select * from vehicle;
+-----+-----+-----+-----+
| code | vtype          | perkm | comfort |
+-----+-----+-----+-----+
| 101 | Volvo bus      | 160   | Medium  |
| 102 | AC deluxe bus  | 150   | High    |
| 103 | Ordinary bus   | 90    | Low     |
| 104 | Ordinary car   | 20    | Medium  |
| 105 | SUV            | 40    | High    |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)

```

Truncate and delete query:

```
mysql> delete from vehicle where code = 105;
Query OK, 1 row affected (0.01 sec)

mysql> truncate table vehicle;
Query OK, 0 rows affected (0.05 sec)

mysql> select * from vehicle;
Empty set (0.01 sec)

mysql> drop table vehicle;
Query OK, 0 rows affected (0.04 sec)

mysql> select * from vehicle;
ERROR 1146 (42S02): Table 'myfirstdatabase.vehicle' doesn't exist
mysql>
```

Creating another table travel:

```
mysql> create table travel(No int(3) primary key, name char(25), tdate date,KM int(3),code int(3), NOP int(3));
Query OK, 0 rows affected (0.11 sec)

mysql> insert into travel values(101,'Janish Kin','2015-11-13',200,101,32);
Query OK, 1 row affected (0.04 sec)

mysql> insert into travel values(102,'John Fen','2016-02-13',90,102,40);
Query OK, 1 row affected (0.04 sec)

mysql> insert into travel values(103,'Vedika Sahai','2016-04-21',100,103,45);
Query OK, 1 row affected (0.04 sec)

mysql> insert into travel values(104,'Raveena','2016-05-28',80,105,4);
Query OK, 1 row affected (0.03 sec)

mysql> insert into travel values(105,'Tarun Ram','2016-03-23',350,102,42);
Query OK, 1 row affected (0.04 sec)

mysql> insert into travel values(106,'Kripal Anya','2016-02-06',200,101,25);
Query OK, 1 row affected (0.04 sec)

mysql> insert into travel values(107,'Ahmed Khan','2015-01-10',75,104,2);
Query OK, 1 row affected (0.04 sec)

mysql> select *from travel;
```

No	name	tdate	KM	code	NOP
101	Janish Kin	2015-11-13	200	101	32
102	John Fen	2016-02-13	90	102	40
103	Vedika Sahai	2016-04-21	100	103	45
104	Raveena	2016-05-28	80	105	4
105	Tarun Ram	2016-03-23	350	102	42
106	Kripal Anya	2016-02-06	200	101	25
107	Ahmed Khan	2015-01-10	75	104	2

7 rows in set (0.00 sec)

Display names of those travellers whose travel date is after 20 April,2016.

```
mysql> select name from travel where tdate>'2016-04-20';
+-----+
| name |
+-----+
| Vedika Sahai |
| Raveena      |
+-----+
2 rows in set (0.01 sec)
```

Display details of travellers whose distance travelled is greater than 200 or number of passengers is less than 5.

```
mysql> select * from travel where km>200 or nop<5;
```

No	name	tdate	KM	code	NOP
104	Raveena	2016-05-28	80	105	4
105	Tarun Ram	2016-03-23	350	102	42
107	Ahmed Khan	2015-01-10	75	104	2

```
3 rows in set (0.01 sec)
```

Display name, travel date and number of passengers for those who are not travelling by vehicle code '102'.

```
mysql> select name, tdate, nop from travel where code!=102;
```

name	tdate	nop
Janish Kin	2015-11-13	32
Vedika Sahai	2016-04-21	45
Raveena	2016-05-28	4
Kripal Anya	2016-02-06	25
Ahmed Khan	2015-01-10	2

```
5 rows in set (0.00 sec)
```

Display number and name of travellers for vehicle code 103,104,105.

```
mysql> select no,name from travel where code IN(103,104,105);
```

no	name
103	Vedika Sahai
104	Raveena
107	Ahmed Khan

```
3 rows in set (0.01 sec)
```

Display name and kilometres travelled for travellers whose name ends with 'n'.

```
mysql> select name,km from travel where name like '%n';
```

name	km
Janish Kin	200
John Fen	90
Ahmed Khan	75

```
3 rows in set (0.00 sec)
```

Display the sum of number of passengers for vehicle code 102.

```
mysql> select sum(nop) from travel where code=102;
```

sum(nop)
82

```
1 row in set (0.00 sec)
```

Display how many travellers are having kilometres travelled greater than 100.

```
mysql> select count(*) from travel where km>100;
```

count(*)
3

```
1 row in set (0.02 sec)
```

Display maximum and minimum kilometres travelled by the travellers.

```
mysql> select min(km),max(km) from travel;
```

min(km)	max(km)
75	350

```
1 row in set (0.18 sec)
```

Display the details if the traveller who have travelled between 1 April, 2015 and 31 December, 2015.

```
mysql> select *from travel where tdate between '2015-04-1' and '2015-12-31';
```

No	name	tdate	KM	code	NOP
101	Janish Kin	2015-11-13	200	101	32

```
1 row in set (0.01 sec)
```

Display traveller name along with type of vehicle and per kilometre charges of all the travellers.

```
mysql> select name, vtype, km from vehicle, travel where vehicle.code=travel.code;
```

name	vtype	km
Janish Kin	Vovlo bus	200
Kripal Anya	Vovlo bus	200
John Fen	AC Deluxe Bus	90
Tarun Ram	AC Deluxe Bus	350
Vedika Sahai	Ordinary Bus	100
Ahmed Khan	Car	75
Raveena	SUV	80

```
7 rows in set (0.02 sec)
```

Display number, name, travel date for those travellers whose per kilometre charges are more than 50.

```
mysql> select no, name, tdate from travel, vehicle where vehicle.code=travel.code and perkm > 50;
```

no	name	tdate
101	Janish Kin	2015-11-13
106	Kripal Anya	2016-02-06
102	John Fen	2016-02-13
105	Tarun Ram	2016-03-23
103	Vedika Sahai	2016-04-21

```
5 rows in set (0.00 sec)
```

Display traveller name along with their total charges (km travelled*per km) in ascending order of name.

```
mysql> select name, km*perkm from vehicle, travel where vehicle.code=travel.code;
```

name	km*perkm
Janish Kin	32000
Kripal Anya	32000
John Fen	13500
Tarun Ram	52500
Vedika Sahai	9000
Ahmed Khan	1500
Raveena	3200

```
7 rows in set (0.01 sec)
```

Display the name and perkm charges for those travellers whose number is greater than 105.

```
mysql> select name, perkm from vehicle, travel where vehicle.code=travel.code and no>105;
```

name	perkm
Kripal Anya	160
Ahmed Khan	20

```
2 rows in set (0.02 sec)
```

Change the vehicle code of Ahmed khan to 103.

```
mysql> update travel set code=103 where name='ahmed khan';
Query OK, 1 row affected (0.08 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

Increase the number of passengers by 2, for travellers having vehicle code 103.

```
mysql> update travel set nop=2+nop where code=103;
Query OK, 2 rows affected (0.05 sec)
Rows matched: 2 Changed: 2 Warnings: 0
```