Q1:

```
create table countries(c_id int primary key,
                       c_name text,
                       region_id text);

insert into countries values(1,'india','IN');
insert into countries values(2,'ireland','IE');
insert into countries values(3,'lsrael','IL');
insert into countries values(4,'andorra','AD');
insert into countries values(5,'austria','AT');
insert into countries values(6,'bhutan','BT');
insert into countries values(7,'brazil','BR');
insert into countries values(8,'canada','CA');
insert into countries values(9,'congo','CD');
insert into countries values(10,'sudan','SD');


create table locations(loc_id int primary key,street_address text,
postal_code int,state_province text,c_id int references countries(c_id));

insert into locations values(1,'sitaram',395010,'GJ','IN');
insert into locations values(2,'muktidham',395310,'GJ','IE');
insert into locations values(3,'viveka',395090,'GJ','IL');
insert into locations values(4,'sarda',395080,'GJ','AD');
insert into locations values(5,'abhay',395070,'GJ','AT');
insert into locations values(6,'renuka',395060,'GJ','BT');
insert into locations values(7,'ramdev',395050,'GJ','BR');
insert into locations values(8,'krishna',395040,'GJ','CA');
insert into locations values(9,'ranuja',395030,'GJ','CD');
insert into locations values(10,'vkram',395020,'GJ','SD');


create table departments(d_id int primary key,d_name text,m_id int,loc_id
int references
locations(loc_id));

insert into departments values(101,'emp',004791,1);
insert into departments values(102,'ceo',004792,2);
insert into departments values(103,'emp',004793,3);
insert into departments values(104,'acountent',004794,4);
insert into departments values(105,'emp',004795,5);
insert into departments values(106,'emp',004796,6);
insert into departments values(107,'ceo',004797,7);
insert into departments values(108,'acountent',004798,8);
insert into departments values(109,'emp',004799,9);
insert into departments values(110,'emp',004800,10);


create table employee(e_id int primary key,f_name text,l_name text,age
```

```
int,email text,phone_number int,hire date date,job_id int,salary
int,commission_pct int,m_id int,d_id int references iocations(d_id));

insert into employee
values(1,'parmar','ronak',19,'ronakparmar1010@gmail.com',9045562097,'2
6-12-2009',2034,200000,2000,004791,101);

insert into employee
values(2,'makvana','bhargav',20,'bhargavmakvana333@gmail.com',92515110
00,'10-12-2008',2035,180000,1000,004792,102);

insert into employee
values(3,'gohil','hardik',23,'gohilhardik123@gmail.com',9054398765,'10
-1-2004',2036,120000,2500,004793,103);

insert into employee
values(4,'vala','jaydip',30,'valajay123@gmail.com',7405283215,'10-12-2
004',2037,150000,3000,004793,104);


insert into employee
values(5,'jadav','jaydip',35,'jada65443@gmail.com',7553634256,'7-6-200
00',2038,160000,2500,004794,105);

insert into employee
values(6,'parmar','vaibhav',28,'vaibhav123@gmail.com',9054432145,'1-8-
2011',2039,60000,0,004795,106);


insert into employee
values(7,'kabriya','karan',36,'karan986@gmail.com',8632534326,'1-6-200
4',2040,120000,300,004796,107);

insert into employee
values(8,'katriya','yes',30,'yes8765@gmail.com',9876543219,'1-4-2017',
2041,60000,0,004797,108);

insert into employee
values(9,'sisara','kinjal',28,'kinjal3536@gmail.com',9054463098,'1-3-2
0018',2042,100000,1000,004798,109);

insert into employee
values(10,'baldaniya,'kaushik',34,'kaushik876@gmail.com',9873456721,'1
-7-20009',2043,130000,2000,004799,110);
```

```
C:\Users\ASUS>sqlite3 prectical.db
SQLite version 3.38.5 2022-05-06 15:25:27
Enter ".help" for usage hints.
sqlite> .table
countries    departments  employee     locations
sqlite> .header on
sqlite> .mode box
sqlite> select * from countries;
```

c_id	c_name	region_id
1	india	IN
2	ireland	IE
3	lsrael	IL
4	andorra	AD
5	austria	AT
6	bhutan	BT
7	brazil	BR
8	canada	CA
9	congo	CD
10	sudan	SD

```
sqlite> select * from departments;
```

d_id	d_name	m_id	loc_id
101	emp	4791	11
102	ceo	4792	12
103	emp	4793	13
104	acountent	4794	14
105	emp	4795	15
106	emp	4796	16
107	ceo	4797	17
108	acountent	4798	18
109	emp	4799	19
110	emp	4800	20

```
sqlite> select * from locations;
```

loc_id	street_address	postal_code	state_province	c_id
11	sitaram	395010	GJ	1
12	muktidham	395310	GJ	2
13	viveka	395090	GJ	3
14	sarda	395080	GJ	4
15	abhay	395070	GJ	5
16	renuka	395060	GJ	6
17	ramdev	395050	GJ	7
18	krishna	395040	GJ	8
19	ranuja	395030	GJ	9
20	vkram	395020	GJ	10

```
sqlite> select * from employee;
```

e_id	f_name	l_name	age	email	phone_number	hire	job_id	salary	commission
1	parmar	ronak	19	ronakparmar1010@gmail.com	9045562097	26-12-2009	2034	200000	2000
2	makvana	bhargav	20	bhargavmakvana333@gmail.com	9251511000	10-12-2008	2035	180000	1000
3	gohil	hardik	23	gohilhardik123@gmail.com	9054398765	10-1-2004	2036	120000	2500
4	vala	jaydip	30	valajay123@gmail.com	7405283215	10-12-2004	2037	150000	3000

A> select f_name"first_name",l_name"last_name" from employee;

```
sqlite> select f_name"first_name",l_name"last_name" from employee;
```

first_name	last_name
parmar	ronak
makvana	bhargav
gohil	hardik
vala	jaydip
jadav	jaydip
parmar	vaibhav
kabriya	karan
katriya	yes
sisara	kinjal

B> select * from (select * from employee ORDER BY SALARY ASC LIMIT 10)tbl ORDER BY e_id;

```
sqlite> select  * from (select * from employee ORDER BY SALARY ASC LIMIT 10)tbl ORDER BY e_id;
```

e_id	f_name	l_name	age	email	phone_number	hire	job_id	salary	commiss
1	parmar	ronak	19	ronakparmar1010@gmail.com	9045562097	26-12-2009	2034	200000	2000
2	makvana	bhargav	20	bhargavmakvana333@gmail.com	9251511000	10-12-2008	2035	180000	1000
3	gohil	hardik	23	gohilhardik123@gmail.com	9054398765	10-1-2004	2036	120000	2500
4	vala	jaydip	30	valajay123@gmail.com	7405283215	10-12-2004	2037	150000	3000
5	jadav	jaydip	17	jada65443@gmail.com	7553634256	7-6-20000	2038	160000	2500
6	parmar	vaibhav	28	vaibhav123@gmail.com	9054432145	1-8-2011	2039	60000	0
7	kabriya	karan	36	karan986@gmail.com	8632534326	1-6-2004	2040	120000	300

C> select l_name from employee where l_name like'_____';

```
sqlite>  select l_name from employee where l_name like'_____';
```

l_name
hardik
jaydip
jaydip
kinjal

D> select d_id , sum(salary) salary from employee;

```
sqlite> select d_id , sum(salary) salary from employee;
```

d_id	salary
101	1150000

E>

F>

G> select e_id,l_name"name",m_id,l_name"manager_name" from employee;

```
sqlite> select e_id,l_name"name",m_id,l_name"manager_name" from employee;
```

e_id	name	m_id	manager_name
1	ronak	4791	ronak
2	bhargav	4792	bhargav
3	hardik	4793	hardik
4	jaydip	4793	jaydip
5	jaydip	4794	jaydip
6	vaibhav	4795	vaibhav
7	karan	4796	karan
8	yes	4797	yes
9	kinjal	4798	kinjal

H> sqlite3>select job_id, AVG(salary)
from employee
NATURAL JOIN employee
GROUP BY job_id;

```
sqlite> select job_id, AVG(salary)
   ...> from employee
   ...> NATURAL JOIN employee
   ...> GROUP BY job_id;
```

job_id	AVG(salary)
2034	200000.0
2035	180000.0
2036	120000.0
2037	150000.0
2038	160000.0
2039	60000.0
2040	120000.0
2041	60000.0
2042	100000.0

I> select c_name,d_name from countries join locations using (c_id) join departments using (loc_id);

```
sqlite> select c_name,d_name from countries join locations using (c_id) join departments using (loc_id);
```

c_name	d_name
india	emp
ireland	ceo
lsrael	emp
andorra	acountent
austria	emp
bhutan	emp
brazil	ceo
canada	acountent
congo	emp
sudan	emp

Q2:

```
sqlite> .output C:/sqlite3/dump202232067.sql
sqlite> .dump
```

```
PRAGMA foreign_keys=OFF;
BEGIN TRANSACTION;

CREATE TABLE countries(c_id int primary key,
                       c_name text,
                       region_id text);

INSERT INTO countries VALUES(1,'india','IN');
INSERT INTO countries VALUES(2,'ireland','IE');
INSERT INTO countries VALUES(3,'lsrael','IL');
INSERT INTO countries VALUES(4,'andorra','AD');
INSERT INTO countries VALUES(5,'austria','AT');
INSERT INTO countries VALUES(6,'bhutan','BT');
INSERT INTO countries VALUES(7,'brazil','BR');
INSERT INTO countries VALUES(8,'canada','CA');
INSERT INTO countries VALUES(9,'congo','CD');
INSERT INTO countries VALUES(10,'sudan','SD');

CREATE TABLE locations(loc_id int primary key,street_address text,
                       postal_code int,state_province text,c_id int references
countries(c_id));

INSERT INTO locations VALUES(11,'sitaram',395010,'GJ',1);
INSERT INTO locations VALUES(12,'muktidham',395310,'GJ',2);
INSERT INTO locations VALUES(13,'viveka',395090,'GJ',3);
INSERT INTO locations VALUES(14,'sarda',395080,'GJ',4);
INSERT INTO locations VALUES(15,'abhay',395070,'GJ',5);
INSERT INTO locations VALUES(16,'renuka',395060,'GJ',6);
INSERT INTO locations VALUES(17,'ramdev',395050,'GJ',7);
INSERT INTO locations VALUES(18,'krishna',395040,'GJ',8);
INSERT INTO locations VALUES(19,'ranuja',395030,'GJ',9);
INSERT INTO locations VALUES(20,'vkram',395020,'GJ',10);
```

```
CREATE TABLE departments(d_id int primary key,d_name text,m_id int,loc_id int
references
locations(loc_id));

INSERT INTO departments VALUES(101,'emp',4791,11);
INSERT INTO departments VALUES(102,'ceo',4792,12);
INSERT INTO departments VALUES(103,'emp',4793,13);
INSERT INTO departments VALUES(104,'acountent',4794,14);
INSERT INTO departments VALUES(105,'emp',4795,15);
INSERT INTO departments VALUES(106,'emp',4796,16);
INSERT INTO departments VALUES(107,'ceo',4797,17);
INSERT INTO departments VALUES(108,'acountent',4798,18);
INSERT INTO departments VALUES(109,'emp',4799,19);
INSERT INTO departments VALUES(110,'emp',4800,20);
COMMIT;
```

```
CREATE TABLE employee(e_id int primary key,f_name text,l_name text,age int,email
text,phone_number int,hire date date,job_id int,salary int,commission_pct int,m_id
int,d_id int references iocations(d_id));

INSERT INTO employee VALUES(1,'parmar','ronak',19,'ronakparmar1010
@gmail.com',9045562097,'26-12-2009',2034,200000,2000,4791,101);
INSERT INTO employee VALUES(2,'makvana','bhargav',20,'bhargavmakvana333
@gmail.com',9251511000,'10-12-2008',2035,180000,1000,4792,102);
INSERT INTO employee VALUES(3,'gohil','hardik',23,'gohilhardik123
@gmail.com',9054398765,'10-1-2004',2036,120000,2500,4793,103);
INSERT INTO employee VALUES(4,'vala','jaydip',30,'valajay123
@gmail.com',7405283215,'10-12-2004',2037,150000,3000,4793,104);
INSERT INTO employee VALUES(5,'jadav','jaydip',35,'jada65443
@gmail.com',7553634256,'7-6-20000',2038,160000,2500,4794,105);
INSERT INTO employee VALUES(6,'parmar','vaibhav',28,'vaibhav123
@gmail.com',9054432145,'1-8-2011',2039,60000,0,4795,106);
INSERT INTO employee VALUES(7,'kabriya','karan',36,'karan986
@gmail.com',8632534326,'1-6-2004',2040,120000,300,4796,107);
INSERT INTO employee VALUES(8,'katriya','yes',30,'yes8765
@gmail.com',9876543219,'1-4-2017',2041,60000,0,4797,108);
INSERT INTO employee VALUES(9,'sisara','kinjal',28,'kinjal3536
@gmail.com',9054463098,'1-3-20018',2042,100000,1000,4798,109);
```

```
sqlite> .outputC:/sqlite3/structure202232067.sql
sqlite> .schema
```

```
CREATE TABLE countries(c_id int primary key,
                       c_name text,
                       region_id text);

CREATE TABLE employee(e_id int primary key,f_name text,l_name text,age int,email text,phone_number int,hire
date date,job_id int,salary int,commission_pct int,m_id int,d_id int references iocations(d_id));

CREATE TABLE locations(loc_id int primary key,street_address text,
                       postal_code int,state_province text,c_id int references countries(c_id));

CREATE TABLE departments(d_id int primary key,d_name text,m_id int,loc_id int references
locations(loc_id));
```

Q3:

trigger less then 18.

```
ter ".help" for usage hints.
lite> .table
untries    departments  employee     locations
lite> CREATE TRIGGER AGECHECK BEFORE INSERT ON employee
  ...> FOR EACH ROW
  ...> BEGIN
  ...> SELECT
  ...> CASE
  ...> WHEN NEW.AGE<18 THEN
  ...> RAISE(ABORT,'INVAILD AGE')
  ...> END;
  ...> END;
```

Q4:

fide mean,median,mode set of numbers in list

In [7]:
```
# 1 python program to print mean of elements.

n_num = [1,2,3,4,5]
n = len(n_num)

get_sum = sum(n_num)
mean = get_sum

print("mean average is: " + str(mean))
print("rollno=202232067")
```

```
mean average is: 15
rollno=202232067
```

In [8]:
```
#  2  python program to print median element.

n_num = [1,2,3,4,5]
n = len(n_num)
n_num.sort()

if n % 2 == 0:
     median1 = n_num[n//2]
     median2 = n_num[n//2 - 1]
     median = (median1 + median2)/2
else:
    median = n_num[n//2]

print("medin is: "+ str(median))
print("rollno=202232067")
```

```
medin is: 3
rollno=202232067
```

In [9]:
```python
#  3  python program to print mode of elements.

import collections
num_list = [21, 13, 19, 13,19,13]

print(num_list)

data = collections.Counter(num_list)
data_list = dict(data)

print(data_list)

max_value = max(list(data.values()))
mode_val = [num for num, freq in data_list.items() if freq == max_value]
if len(mode_val) == len(num_list):
   print("No mode in the list")
else:
   print("The Mode of the list is : " + ', '.join(map(str, mode_val)))
print("rollno=202232067")
```

```
[21, 13, 19, 13, 19, 13]
{21: 1, 13: 3, 19: 2}
The Mode of the list is : 13
rollno=202232067
```

Q5:

employee table whith python

In [17]:
```python
import sqlite3
import pandas as pd

conn = sqlite3.connect('example.db')
cursor = conn.cursor()
cursor.execute("drop table if exists employee")
sql = '''create table employee(first_name char(20) not null,last_name char(20),age int,sex char(1),income float)'''
cursor.execute(sql)
print("table is created....")

cursor.execute('''insert into employee(first_name,last_name,age,sex,income)values('ronak','parmar',19,'m',90000)''')
cursor.execute('''insert into employee(first_name,last_name,age,sex,income)values('jaydip','vala',20,'m',60000)''')
cursor.execute('''insert into employee(first_name,last_name,age,sex,income)values('bhargav','makvana',29,'m',50000)''')
cursor.execute('''insert into employee(first_name,last_name,age,sex,income)values('milan','chotaliya',27,'m',40000)''')
cursor.execute('''insert into employee(first_name,last_name,age,sex,income)values('vivek','choteliya',19,'m',30000)''')
print("records inserd....")

cursor.execute('''select * from employee''')
result = cursor.fetchall();

df = pd.DataFrame (result,columns=["first_name","last_name","age","sex","income"])
print(df)
conn.commit()
conn.close
```

```
table is created....
records inserd....
  first_name  last_name  age sex   income
0      ronak     parmar   19   m  90000.0
1     jaydip       vala   20   m  60000.0
2    bhargav    makvana   29   m  50000.0
3      milan  chotaliya   27   m  40000.0
4      vivek  choteliya   19   m  30000.0
```

Q6:

Q7:

Q8:

write a program to implement DML opretions using sqlte3.

ans > DML opretions is 4.

```
sqlite> .header on
sqlite> .mode box
sqlite> select * from student;
```

stud_id	stud_name	address
1	ronak	somnath
2	bhargav	amreli
3	milan	bhavnagar

```
sqlite> insert into student values (4,'jaydip','rajkot');
sqlite> select * from student;
```

stud_id	stud_name	address
1	ronak	somnath
2	bhargav	amreli
3	milan	bhavnagar
4	jaydip	rajkot

```
sqlite> update student set address='surat' where stud_id=4;
sqlite> select * from student;
```

stud_id	stud_name	address
1	ronak	somnath
2	bhargav	amreli
3	milan	bhavnagar
4	jaydip	surat

```
sqlite> select * from student;
```

stud_id	stud_name	address
1	ronak	somnath
2	bhargav	amreli
3	milan	bhavnagar

Q9:

Q10: