SQL 1

Q) Create table student with fields roll_no, name, gender and mark with the roll_no as primary key and assign suitable constraints (like check and not null) for each attributes.

```
create table student(roll_no int primary key,name char(20) not null,gender char(10) not null,mark int check(mark<=100));
```

a) Insert 5 records.

```
insert into student values(101,'Safwan','male',95);
INSERT 0 1
insert into student values(102,'Faris','male',98);
INSERT 0 1
insert into student values(103,'Aysha','female',90);
INSERT 0 1
insert into student values(104,'Nandana','female',65);
INSERT 0 1
insert into student values(105,'Nashir','male',80);
INSERT 0 1
select * from student;
roll_no | name | gender | mark
---------+---------+--------+------
101 | Safwan | male | 95
102 | Faris | male | 98
103 | Aysha | female | 90
104 | Nandana | female | 65
105 | Nashir | male | 80
```

b) Display all boy students with their name.

```
select name from student where gender='male';
name
--------
Faris
Safwan
Nashir
```

c) Find the average mark.

```
select avg(mark) from student;
avg
--------------------
85.6000000000000000
```

d) Display the roll no., name and mark of student who got highest mark.

```
select roll_no,name,mark from student where mark=(select max(mark) from student);
roll_no | name | mark
---------+-------+------
102 | Faris | 98
```

e) Alter the table by adding one more field place.

```
alter table student add place char(20);
```

ALTER TABLE
select * from student;
roll_no | name | gender | mark | place
---------+---------+--------+------+-------
101 | Safwan | male | 95 |
102 | Faris | male | 98 |
103 | Aysha | female | 90 |
104 | Nandana | female | 65 |
105 | Nashir | male | 80 |
f) Update the field place.
update student set place='taliparamba' where roll_no=101;
UPDATE 1
update student set place='kannur' where roll_no=102;
UPDATE 1
update student set place='kasargod' where roll_no=103;
UPDATE 1
update student set place='kozhikode' where roll_no=104;
UPDATE 1
update student set place='wayanad' where roll_no=105;
UPDATE 1

select * from student ;
roll_no | name | gender | mark | place
---------+---------+--------+------+----------------------
101 | Safwan | male | 95 | taliparamba
102 | Faris | male | 98 | kannur
103 | Aysha | female | 90 | kasargod
104 | Nandana | female | 65 | kozhikode
105 | Nashir | male | 80 | wayanad

g) Display the name and place of all girl students who have marks greater than 35 and less than 70.
select name,place from student where gender='female' and mark between 80 and 89 ;
name | place
---------+----------------------
Nandana | kozhikode

SQL 2

Q) Create table department with fields dpt_id as primary key and d_name as not null. Create another table employee with fields emp_id, e_name, salary, dpt_id and dob. Assign constraints for emp_id as primary key, dpt_id as foreign key, e_name, salary and dob as not null.
create table department(dept_id int primary key, dept_name char(20) not null);
create table employee(empid int primary key,e_name char(20) not null,salary int not null, dept_id int,dob date not null,foreign key (dept_id) references department(dept_id));

a) Insert 5 records into both tables.
insert into department values(101,'administration');
insert into department values(102,'marketing');
insert into department values(103,'purchasing');

```
insert into department values(104,'it');
insert into department values(105,'sales');
select * from department;
dept_id | dept_name
---------+----------------------
101 | administration
102 | marketing
103 | purchasing
104 | it
105 | sale
(5 rows)

insert into employee values(1,'shahid ',100000,103,'2000-02-04');
insert into employee values(2,'sinan',80000,102,'1998-07-07');
insert into employee values(3,'shinadh',70000,101,'1999-06-11');
insert into employee values(4,'fathima',60000,104,'1997-12-23');
insert into employee values(5,'Salman',50000,105,'1997-12-21');
select * from employee;
empid | e_name | salary | dept_id | dob
-------+----------------------+--------+---------+------------
1 | shahid | 100000 | 103 | 2000-02-04
2 | sinan | 80000 | 102 | 1998-07-07
3 | shinadh | 70000 | 101 | 1999-06-11
4 | fathima | 60000 | 104 | 1997-12-23
5 | salman | 50000 | 105 | 1997-12-21
(5 rows)
```


b) Display the employees who got salary more than 60000 and less than 1 lakh.

```
select * from employee where salary between 60000 and 100000;
empid | e_name | salary | dept_id | dob
-------+----------------------+--------+---------+------------
1 | shahid | 100000 | 103 | 2000-02-04
2 | sinan | 80000 | 102 | 1998-07-07
3 | shinadh | 70000 | 101 | 1999-06-11
4 | fathima | 60000 | 104 | 1997-12-23
(2 rows)
```

c) Display the d_name, e_name and salary of employees who get salary more than 50000.

```
select distinct department.dept_name ,employee.e_name,employee.salary from
department,employee where salary>50000 and department.dept_id=employee.dept_id;
dept_name | emp_name | salary
purchasing | shahid | 100000
marketing | sinan | 80000
administration | shinadh | 70000
it | fathima | 60000
```

d) Rename the field e_name with emp_name.

```
alter table employee rename e_name to emp_name;
select * from employee;
empid | emp_name | salary | dept_id | dob
```

-------+---------------------+--------+---------+------------
1 | shahid | 100000 | 103 | 2000-02-04
2 | sinan | 80000 | 102 | 1998-07-07
3 | shinadh | 70000 | 101 | 1999-06-11
4 | fathima | 60000 | 104 | 1997-12-23
5 | salman | 50000 | 105 | 1997-12-21

e) Create a view name emp_view with fields emp_id, emp_name and dob, display the view.
create view emp_view as select empid,emp_name,dob from employee;
select * from emp_view;
empid | emp_name | dob
-------+---------------------+------------
1 | shahid | 2000-02-04
2 | sinan | 1998-07-07
3 | shinadh | 1999-06-11
4 | fathima | 1997-12-23
5 | salman | 1997-12-21

f) Display emp_id and salary of all employees in descending order of their salary.
select empid,salary from employee order by salary desc;
empid | salary
-------+--------
2 | 100000
5 | 80000
3 | 70000
1 | 60000
4 | 50000

g) Display the name of department with number of employees.
select dept_name,count(empid)as"no.of employees"from department,employee where department.dept_id=employee.dept_id group by dept_name;
dept_name | no.of employees
----------------------+-----------------
it | 1
marketing | 1
administration | 1
sale | 1
purchasing | 1

SQL 3

Q) Create a table Depositor with fields accno as primary key, depositor_name, branch and balance. Assign suitable constraints for each attributes. Create another table Borrower with fields loan_no as primary key, accno as foreign key and amount as not null.
create table Depositor(accno int primary key,depositor_name char(20) not null,branch char(15) not null,balance int not null);
select * from Depositor;
accno | depositor_name | branch | balance

-------+--------------------+--------+---------
create table Borrower(loan_no int primary key,accno int,foreign key(accno) references Depositor(accno),amount int not null);
select * from Borrower;
loan_no | accno | amount
----------+-------+--------
a) Insert five records into both tables.
insert into depositor values(101,'abusafwan','taliparamb',12000);
insert into depositor values(102,'nadir','kattampally',15000);
insert into depositor values(103,'amras','chalad',20000);
insert into depositor values(104,'khalid','pappinisseri',10000);
insert into depositor values(105,'mizhab','valapattanam',18000);
select * from Depositor;
acccno | depositor_name | branch | balance
--------+--------------------+----------------+---------
101 | abusafwan | taliparamb | 12000
102 | nadir | kattampally | 15000
103 | amras | chalad | 20000
104 | khalid | pappinisseri | 10000
105 | mizhab | valapattanam | 18000
insert into borrower values(1001,102,50000);
insert into borrower values(1002,102,25000);
insert into borrower values(1003,103,35000);
insert into borrower values(1004,104,26000);
insert into borrower values(1005,105,80000);

select * from Borrower;
loan_no | accno | amount
---------+-------+--------
1001 | 102 | 50000
1002 | 102 | 25000
1003 | 103 | 35000
1004 | 104 | 26000
1005 | 105 | 80000

b) Write the queries using various group functions on amount field.
select count(amount) from Borrower;
count

5
select max(amount) from Borrower;
max

80000
select min(amount) from Borrower;
min

25000
select sum(amount) from borrower;
sum

216000
select avg(amount) from borrower;
avg

43200.000000000000

c) Display the count of depositors according to their branch.
select branch,count(depositor_name) from Depositor group by branch;
branch | count
-----------------+-------
kattampally | 1
chalad | 1
taliparamb | 1
valapattanam | 1
pappinisseri | 1

22

d) Display the name of customers who have an account but not loan.
select depositor_name from Depositor where accno not in(select accno from Borrower);
depositor_name
----
abusafwan
e) Drop the column amount from Borrower table.
alter table Borrower drop column amount;
select * from borrower;
loan_no | accno
---------+-------
1001 | 102
1002 | 102
1003 | 103
1004 | 104
1005 | 105

SQL 4

Q) Create a table Teacher with fields staff_id,name,dno,salary and designation
with staff_id as primary key, name as not null, dno as foreign key, salary and
designation are not null. Create another table Dept with field dno as primary key,
dname as not null.
create table Dept(dno int primary key,dname char(20) not null);
create table Teacher(staff_id int primary key,name char(20) not null,dno int,salary int not
null,designation
char(20) not null,foreign key(dno) references Dept(dno));
a)Insert 5 records into the table
insert into Dept values(11,'Computer science');
insert into Dept values(12,'B.com Corporation');
insert into Dept values(13,'BBA');
insert into Dept values(15,'BA English');
insert into Dept values(14,'Physics');

select * from Dept;
dno | dname
-----+----------------------
11 | Computer science
12 | B.com Corporation
13 | BBA
15 | BA English
14 | Physics

insert into Teacher values(101,'Safwan',11,75000,'Head of Department');
insert into Teacher values(102,'Nashir,13,5000,'Assistant Professor');
insert into Teacher values(103,'Mizhab',14,60000,'Professor');
insert into Teacher values(104,'Ayisha',40000,'Assistant Professor');
insert into Teacher values(105,'Shahid',12,55000,'Professor');

select * from Teacher;
staff_id | name | dno | salary | designation
----------+----------------------+-----+--------+----------------------
101 | Safwan | 11 | 75000 | Head of Department
102 | Nashir | 13 | 50000 | Assistant Professor
103 | Mizhab | 14 | 60000 | Professor
104 | Ayisha | 15 | 40000 | Assistant Professor
105 | Shahid | 12 | 55000 | Professor

b)Write the queries using various character functions on name field
select upper(name) from Teacher;
upper

SAFWAN
NASHIR
MIZHAB
AYISHA
SHAHID
select lower(name) from Teacher;
lower
----
safwan
nashir
mizhab
ayisha
shahid
select length(name) from Teacher;
length

6
6
6
6
6
select initcap(name) from Teacher;

initcap

Safwan
Nashir
Mizhab
Ayisha
Shahid

c)Display the number of staffs in each department
select dname,count(staff_id) as"no.of staffs" from Dept,Teacher where Dept.dno=Teacher.dno group by
dname;
dname | no.of staffs
---+---
BBA | 1
Computer Science | 1
BA English | 1
B.com Coporation | 1
Physics | 1

d)Add 20% extra salary to all employees who works in Physics department
update Teacher set salary=(salary+0.2*salary) where dno=(select dno from dept where dname='physics');
select * from Teacher;
staff_id | name | dno | salary | designation
---+---+---+---+---
102 | Nashir | 13 | 50000 | Assistant Professor
103 | Mizhab | 14 | 60000 | Professor
104 | Ayisha | 15 | 40000 | Assistant Professor
105 | Shahid | 12 | 55000 | Professor
101 | Safwan | 11 | 108000| Head of Department

e)Display the name of teachers who works in CS department
select name from teacher where dno in(select dno from dept where dname='cs');
name

Safwan
f)Delete all teachers who got salary less than average salary
delete from Teacher where salary<(select avg(salary) from Teacher);
select * from Teacher;
staff_id | name | dno | salary | designation
---+---+---+---+---
101 | Safwan | 11 | 75000 | Head of Department
103 | Mizhab | 14 | 60000 | Professor

g)Create a view named V1 with fields staff_id,name and dname. Display the view
create view V1 as select Teacher.staff_id,Teacher.name,Dept.dname from Teacher inner join Dept on
Teacher.dno=Dept.dno group by Teacher.staff_id,dept.dname;

select * from V1;
staff_id | name | dname
----------+----------------------+----------------------
103 | Mizhab | Physics
101 | Safwan | Computer science

SQL 5

Q) Create a table customer with fileds cust_id, cust_name, city, gender with cust_id as primary key and assign suitable constraints for each attributes. Create another table order with fields order_id as primary key, cust_id as foreign key, ordered_item and order_date.

```
create table customer(cust_id int primary key,cust_name char(20) not null,city char(20) not null,gender char(20) not null);
CREATE TABLE
create table orders(order_id int primary key,cust_id int,ordered_item char(20) not null,order_date date,foreign key(cust_id) references customer(cust_id));
CREATE TABLE
```

a) Insert 5 records into the table.

```
insert into customer values(101,'pinkman','poothappara','male');
insert into customer values(102,'walter','manna','male');
insert into customer values(103,'tommy','kannur','male');
insert into customer values(104,'arthur','padannapalam','male');
insert into customer values(105,'helene','marakkarkandy','female');
select * from customer;
```

cust_id | cust_name | city | gender
---------+----------------------+----------------------+----------------------
101 | pinkman | poothappara | male
102 | walter | manna | male
103 | tommy | kannur | male
104 | arthur | padannapalam | male
105 | helene | marakkarkandy | female
(5 rows)

```
insert into orders values(511,101,'scale','2022-10-11');
insert into orders values(512,102,'pencil','2022-10-19');
insert into orders values(513,103,'eraser','2022-10-20');
insert into orders values(514,101,'pen','2022-10-23');
insert into orders values(515,105,'protractor','2022-10-25');
select * from orders;
```

order_id | cust_id | ordered_item | order_date
----------+---------+----------------------+------------
511 | 101 | scale | 2022-10-11
512 | 102 | pencil | 2022-10-19
513 | 103 | eraser | 2022-10-20
514 | 101 | pen | 2022-10-23
515 | 105 | protractor | 2022-10-25

b) -> Display the name of all customers whose city letter starting as 'k' .

```
select cust_name from customer where city like 'k%';
```

cust_name
---
tommy

-> Display the name of all customers whose city letter ending as ‘a’ .
select cust_name from customer where city like '%a';

cust_name
---
pinkman
walter
(2 row)

-> Display the name of all customers whose cities second letter as ‘a’ .
select cust_name from customer where city like '_a%';

cust_name
---
walter
tommy
arthur
helene
c) Display the customer name and order id of a customer with order_id 514
select orders.order_id,customer.cust_name from orders inner join customer on customer.cust_id=orders.cust_id group by orders.order_id,customer.cust_name having order_id=514;
order_id | cust_name
---+---
514 | pinkman
d) Display the details of customers whose name contains a letter 'e'
select cust_name from customer where cust_name like '%e%';
cust_name
---
walter
helene
e) Display the name and city of customers with the order date 23/10/2022
select cust_name,city from customer where cust_id=(select cust_id from orders where order_date='2022-10-23');
cust_name | city
---+---
pinkman | poothappara
f) Add one more field order_status into order table
alter table orders add column order_status text;
ALTER TABLE

select * from orders;
order_id | cust_id | ordered_item | order_date | order_status
---+---+---+---+---
511 | 101 | scale | 2022-10-11 |

512 | 102 | pencil | 2022-10-19 |
513 | 103 | eraser | 2022-10-20 |
514 | 101 | pen | 2022-10-23 |
515 | 105 | protractor | 2022-10-25 |

g) Create view named 'cust' with the details of customers who did not order. Display the view

```
create view cust as select * from customer where cust_id not in(select cust_id from orders);
CREATE VIEW
select * from cust;
cust_id | cust_name | city | gender
---------+----------------------+----------------------+----------------------
104 | arthur | padannapalam | male
```