

1. In a database create the following tables with suitable constraints :

STUDENTS

AdmNo	Name	Class	Sec	RNo	Address	Phone
1271	Utkarsh Madaan	12	C	1	C-32, Punjabi Bagh	4356154
1324	Naresh Sharma	10	A	1	31, Mohan Nagar	435654
1325	Md. Yusuf	10	A	2	12/21, Chand Nagar	145654
1328	Sumedha	10	B	23	59, Moti Nagar	4135654
1364	Subya Akhtar	11	B	13	12, Janak Puri	NULL
1434	Varuna	12	B	21	69, Rohini	NULL
1461	David DSouza	11	B	1	D-34, Model Town	243554, 98787665
2324	Satinder Singh	12	C	1	1/2, Gulmohar Park	143654
2328	Peter Jones	10	A	18	21/32B, Vishal Enclave	24356154
2371	Mohini Mehta	11	C	12	37, Raja Garden	435654, 6765787

Query:-

Creation of Table:

CREATE TABLE STUDENTS

```
(
  AdmNo Number(4),
  Name Varchar(20),
  Class Number(2),
  Sec Varchar(1),
  RNo Number(2),
  Address Varchar(20),
  Phone Number(20)
)
```

Insertion of data into Table:

```
INSERT into STUDENTS VALUES(1271,'Utkarsh Madaan',12,'C',1,'C-32, Punjabi Bagh',4356154);
INSERT into STUDENTS VALUES(1324,'Naresh Sharma',10,'A',1,'31, Mohan Nagar',435654);
INSERT into STUDENTS VALUES(1325,'Md. Yusuf',10,'A',2,'12/21,Chand Nagar',145654);
INSERT into STUDENTS VALUES(1328,'Sumedha',10,'B',23,'59, Moti Nagar',4135654);
INSERT into STUDENTS VALUES(1364,'Subya Akhtar',11,'B',13,'12, Janak Puri',NULL);
```

```

INSERT into STUDENTS VALUES(1434,'Varuna',12,'B',21,'69, Rohini',NULL);
INSERT into STUDENTS VALUES(1461,'David Dsouza',11,'B',1,'D-34, Model Town',4356154,
98787665');
INSERT into STUDENTS VALUES(2324,'Satinder Singh',12,'C',1,'C-12,1/2 , Gulmohar Park',143654);
INSERT into STUDENTS VALUES(2328,'Peter Jones',10,'A',18,'C-12,1/2 ,21/32B, Vishal
Enclave',24356154);
INSERT into STUDENTS VALUES(2371,'Mohini Mehta',11,'C',12,'37, Raja Garden',435654,
6765787')

```

SPORTS				
AdmNo	Game	CoachName	Grade	
324	Cricket	Narendra	A	
1364	Volleball	M.P. Singh	A	
1271	Volleball	M.P. Singh	B	
1434	Basket Ball	I. Malhotra	B	
1461	Cricket	Narendra	B	
2328	Basket Ball	I. Malhotra	A	
2371	Basket Ball	I. Malhotra	A	
1271	Basket Ball	I. Malhotra	A	
1434	Cricket	Narendra	A	
2328	Cricket	Narendra	B	
1364	Basket Ball	I. Malhotra	B	

Query:-

Creation of Table:

```

CREATE TABLE SPORTS
(AdmNo Integer(4),
Name Varchar(20),
CoachName Varchar(20),
Grade Char(1)
)

```

Insertion of data into Table:

```

INSERT into SPORTS VALUES(1324, 'Cricket', 'Narendra', 'A');
INSERT into SPORTS VALUES(1364, 'Volleball', 'M.P. Singh', 'A');
INSERT into SPORTS VALUES(1271, 'Volleball', 'M.P. Singh', 'B');
INSERT into SPORTS VALUES(1434, 'Basekt Ball', 'I. Malhotra', 'B');
INSERT into SPORTS VALUES(1461, 'Cricket', 'Narendra', 'B');

```

```

INSERT into SPORTS VALUES(2328, 'Basekt Ball', 'I. Malhotra', 'A');
INSERT into SPORTS VALUES(2371, 'Basekt Ball', 'I. Malhotra', 'A');
INSERT into SPORTS VALUES(1271, 'Basekt Ball', 'I. Malhotra', 'A');
INSERT into SPORTS VALUES(1434, 'Cricket', 'Narendra', 'A');
INSERT into SPORTS VALUES(2328, 'Cricket', 'Narendra', 'B');
INSERT into SPORTS VALUES(1364, 'Basekt Ball', 'I. Malhotra', 'B')

```

Based on these tables write SQL statements for the following queries:

- i. Display the lowest and the highest classes from the table STUDENTS.

Query:

```
SELECT min(class) "Lowset Class" , max(Class) "Highest Class" from STUDENTS
```

Output:

Lowset Class	Highest Class
10	12

- ii. Display the number of students in each class from the table STUDENTS.

Query:

```
SELECT class, COUNT(*) "Number of Students" FROM STUDENTS GROUP BY class
```

Output:

Class	Number of Students
10	4
11	3
12	3

- iii. Display the number of students in class 10.

Query:

```
SELECT class, COUNT(*) "Number of Students" FROM STUDENTS WHERE class=10 GROUP BY class
```

Output:

Class	Number of Students
10	4

iv. Display details of the students of the Cricket team.

Query:

```
SELECT *FROM STUDENTS,SPORTS WHERE STUDENTS.AdmNo = SPORTS.AdmNo AND
Game="Cricket"
```

Output:

A...	Name	Class	Sec	RNo	Address	Phone	Adm...	Game	CoachName	Grade
1324	Nares...	10	A	1	31, Moh...	435654	1324	Cricket	Narendra	A
1461	David ...	11	B	1	D-34, M...	43561...	1461	Cricket	Narendra	B
1434	Varuna	12	B	21	69, Rohini	Null	1434	Cricket	Narendra	A
2328	Peter ...	10	A	18	C-12,1/...	24356...	2328	Cricket	Narendra	B

v. Display the Admission number, name, class, section, and roll number of the students whose grade in Sports table is 'A'.

Query:

```
SELECT STUDENTS.AdmNo "Admission Number", Name, Class, Sec "Section", Rno "Roll No." from
STUDENTS,SPORTS Where STUDENTS.AdmNo = SPORTS.AdmNo AND Grade="A"
```

Output:

Admission Number	Name	Class	Section	Roll No.
1324	Naresh Sharma	10	A	1
1364	Subya Akhtar	11	B	13
2328	Peter Jones	10	A	18
2371	Mohini Mehta	11	C	12
1271	Utkarsh Madaan	12	C	1
1434	Varuna	12	B	21

vi. Display the name and phone number of the students of class 12 who are play some game.

Query:

```
SELECT Game, Name, Phone FROM STUDENTS, SPORTS WHERE  
STUDENTS.AdmNo=SPORTS.AdmNo AND CLASS=12
```

Output:

Game	Name	Phone
Basekt Ball	Utkarsh Madaan	4356154
Volleball	Utkarsh Madaan	4356154
Basekt Ball	Varuna	Null
Cricket	Varuna	Null

vii. Display the Number of students with each coach.

Query:

```
SELECT Coachname, count(*) "Number of Students" FROM SPORTS GROUP BY Coachname
```

Output:

CoachName	Number of Students
I. Malhotra	5
M.P. Singh	2
Narendra	4

viii. Display the names and phone numbers of the students whose grade is 'A' and whose coach is Narendra.

Query:

```
SELECT Name, Phone "Phone Number" from STUDENTS, SPORTS WHERE  
STUDENTS.AdmNo=SPORTS.AdmNo AND Coachname="Narendra" AND Grade="A"
```

Output:

Name	Phone Number
Naresh Sharma	435654
Varuna	Null

2. In a database create the following tables with suitable constraints :

ITEMS			
I Code	Name	Category	Rate
1001	Masala Dosa	South Indian	60
1002	Vada Sambhar	South Indian	40
1003	Idli Sambhar	South Indian	40
2001	Chow Mein	Chinese	80
2002	Dimsum	Chinese	60
2003	Soup	Chinese	50
3001	Pizza	Italian	240
3002	Pasta	Italian	125

Query:-

Creation of Table:

```
CREATE TABLE ITEMS
(I_Code Integer(4),
Name Varchar(20),
Category Varchar(20),
Rate Number(3)
)
```

Insertion of data into Table:

```
INSERT into ITEMS VALUES(1001, 'Masala Dosa', 'South Indian', '60');
INSERT into ITEMS VALUES(1002, 'Vada Sambhar', 'South Indian', '40');
INSERT into ITEMS VALUES(1003, 'Idli Sambhar', 'South Indian', '40');
INSERT into ITEMS VALUES(2001, 'Chow Mein', 'Chinese', '80');
INSERT into ITEMS VALUES(2002, 'Dimsum', 'Chinese', '60');
INSERT into ITEMS VALUES(2003, 'Soup', 'Chinese', '50');
INSERT into ITEMS VALUES(3001, 'Pizza', 'Italian', '240');
INSERT into ITEMS VALUES(3002, 'Pasta', 'Italian', '125');
```

BILLS

BillNo	Date	I Code	qty
1	2010-04-01	1002	1
1	2010-04-01	3001	1
2	2010-04-01	1001	3
2	2010-04-01	1002	1
2	2010-04-01	2003	2
3	2010-04-02	2002	1
4	2010-04-02	2002	4
4	2010-04-02	2003	2
5	2010-04-03	2003	2
5	2010-04-03	3001	1
5	2010-04-03	3002	3

Creation of Table:

```
CREATE TABLE BILLS
```

```
(BillNo Integer(4),
```

```
  Date Varchar(20),
```

```
  I_Code Integer(4),
```

```
  qty Number(2)
```

```
)
```

Insertion of data into Table:

```
INSERT into BILLS VALUES(1, '2010-04-01', 1002, 2);
```

```
INSERT into BILLS VALUES(1, '2010-04-01', 3001, 1);
```

```
INSERT into BILLS VALUES(2, '2010-04-01', 1001, 3);
```

```
INSERT into BILLS VALUES(2, '2010-04-01', 1002, 1);
```

```
INSERT into BILLS VALUES(2, '2010-04-01', 2003, 2);
```

```
INSERT into BILLS VALUES(3, '2010-04-02', 2002, 1);
```

```
INSERT into BILLS VALUES(4, '2010-04-02', 2002, 4);
```

```
INSERT into BILLS VALUES(4, '2010-04-02', 2003, 2);
```

```
INSERT into BILLS VALUES(5, '2010-04-03', 2003, 2);
```

```
INSERT into BILLS VALUES(5, '2010-04-03', 3001, 1);
```

```
INSERT into BILLS VALUES(5, '2010-04-03', 3002, 3);
```

a) Based on these tables write SQL statements for the following queries:

i. Display the average rate of a South Indian item.

Query:

```
SELECT avg(Rate) "Average Rate of South Indian item" FROM ITEMS WHERE Category="South Indian"
```

Output:

! Average Rate of South Indian item
46.666666666666664

ii. Display the number of items in each category.

Query:

```
SELECT Category, count(*) "Number of Items" FROM ITEMS GROUP BY category
```

Output:

! Category	Number of Items
Chinese	3
Italian	2
South Indian	3

iii. Display the total quantity sold for each item.

iv.

Query:

```
SELECT I_Code, SUM(qty) "Total Quantity Sold" from BILLS GROUP BY I_Code
```

Output:

I_Code	Total Quantity Sold
1001	3
1002	3
2002	5
2003	6
3001	2
3002	3

- v. Display total quantity of each item sold but don't display this data for the items whose total quantity sold is less than 3.

Query:

- vi. Display the details of bill records along with Name of each corresponding item.

Query:

```
SELECT BillNo,Name,Date,Bills.I_Code,qty from ITEMS,BILLS WHERE BILLS.I_Code=ITEMS.I_Code
```

Output:

BillNo	Name	Date	I_Code	qty
2	Masala Dosa	2010-04-01	1001	3
1	Vada Sambhar	2010-04-01	1002	2
2	Vada Sambhar	2010-04-01	1002	1
3	Dimsum	2010-04-02	2002	1
4	Dimsum	2010-04-02	2002	4
2	Soup	2010-04-01	2003	2
4	Soup	2010-04-02	2003	2
5	Soup	2010-04-03	2003	2
1	Pizza	2010-04-01	3001	1
5	Pizza	2010-04-03	3001	1
5	Pasta	2010-04-03	3002	3

vii. Display the details of the bill records for which the item is 'Dosa'.

Query:

```
SELECT BillNo,Date,Bills.I_Code,qty from ITEMS,BILLS WHERE BILLS.I_Code=ITEMS.I_Code AND
Name="Masala Dosa"
```

Output:

BillNo	Date	I_Code	qty
2	2010-04-01	1001	3

viii. Display the bill records for each Italian item sold.

Query:

```
SELECT BillNo,Date,Bills.I_Code,qty from ITEMS,BILLS WHERE BILLS.I_Code=ITEMS.I_Code AND
Category="Italian"
```

Output:

BillNo	Date	I_Code	qty
1	2010-04-01	3001	1
5	2010-04-03	3001	1
5	2010-04-03	3002	3

- ix. Display the total value of items sold for each bill.

Query: