**Q1) Create table sailors(sid,sname,rating,age)**

SQL> create table sailors(

2 sid integer,

3 sname varchar(30),

4 rating integer,

5 age real,

6 primary key(sid)

7 );

Table created.

SQL> insert into sailors (sid, sname, rating, age)

2 values (22, 'Dustin', 7, 45.0);

1 row created.

SQL> insert into sailors (sid, sname, rating, age)

2 values (29, 'Brutus', 1, 33.0);

1 row created.

SQL> insert into sailors (sid, sname, rating, age)

2 values (31, 'Lubber', 8, 55.5);

1 row created.

SQL> insert into sailors (sid, sname, rating, age)

2 values (32, 'Andy', 8, 25.5);

1 row created.

SQL> insert into sailors (sid, sname, rating, age)

2 values (58, 'Rusty', 10, 35.0);

1 row created.

SQL> insert into sailors (sid, sname, rating, age)

2 values (64, 'Horatio', 7, 35.0);

1 row created.

SQL> insert into sailors (sid, sname, rating, age)

2 values (71, 'Zorba', 10, 16.0);

1 row created.

SQL> insert into sailors (sid, sname, rating, age)

2 values (74, 'Horatio', 9, 35.0);

1 row created.

SQL> insert into sailors (sid, sname, rating, age)

2 values (85, 'Art', 3, 25.5);

1 row created.

SQL> insert into sailors (sid, sname, rating, age)

2 values (95, 'Bob', 3, 63.5);

1 row created.

**Q2).Create table boats(bid,bname,color)**

SQL> create table boats(

2 bid integer,

3 bname varchar(30),

4 color varchar(10),

5 primary key(bid)

6 );

Table created.

SQL> insert into boats (bid, bname, color)

2 values (101, 'Interlake', 'blue');

1 row created.

SQL> insert into boats (bid, bname, color)

2 values (102, 'Interlake', 'red');

1 row created.

SQL> insert into boats (bid, bname, color)

2 values (103, 'Clipper', 'green');

1 row created.

SQL> insert into boats (bid, bname, color)

2 values (104, 'Marine', 'red');

1 row created.

**Q3). Create table reserves(sid,bid,day)**

SQL> create table reserves(

2 sid integer,

3 bid integer,

4 day date,

5 primary key(sid,bid,day),

6 foreign key(sid) references sailors,

7 foreign key(bid) references boats

8 );

Table created.

SQL> insert into reserves(sid,bid,day)

2 values(22,101,'10-OCT-98');

1 row created.

SQL> insert into reserves(sid,bid,day)

2 values(22,102,'10-OCT-98');

1 row created.

SQL> insert into reserves(sid,bid,day)

2 values(22,103,'8-OCT-98');

1 row created.

SQL> insert into reserves(sid,bid,day)

2 values(22,104,'7-OCT-98');

1 row created.

SQL> insert into reserves(sid,bid,day)

2 values(31,102,'10-Nov-98');

1 row created.

SQL> insert into reserves(sid,bid,day)

2 values(31,103,'6-NOV-98');

1 row created.

SQL> insert into reserves(sid,bid,day)

2 values(31,104,'12-NOV-98');

1 row created.

SQL> insert into reserves(sid,bid,day)

2 values(64,101,'5-SEP-98');

1 row created.

SQL> insert into reserves(sid,bid,day)

2 values(64,102,'8-SEP-98');

1 row created.

SQL> insert into reserves(sid,bid,day)

2 values(74,103,'8-SEP-98');

1 row created.

**Q4). Find names and ages of sailors**

SQL> select sname,age from sailors;

SNAME AGE

------------------------------ ----------

Dustin 45

Brutus 33

Lubber 55.5

Andy 25.5

Rusty 35

Horatio 35

Zorba 16

Horatio 35

Art 25.5

Bob 63.5

10 rows selected.

**Q5). Find average age of sailors**

SQL> select avg(age) from sailors;

AVG(AGE)

----------

36.9

**Q6). Count the number of sailors**

SQL> select count(\*) from sailors;

COUNT(\*)

----------

10

**Q7). Count the number of different sailor names**

SQL> select count(distinct sname) from sailors;

COUNT(DISTINCTSNAME)

--------------------

9

**Q8). Find the sailors with rating above 7**

SQL> select \* from sailors where rating>7;

SID SNAME RATING AGE

---------- ------------------------------ ---------- ----------

31 Lubber 8 55.5

32 Andy 8 25.5

58 Rusty 10 35

71 Zorba 10 16

74 Horatio 9 35

**Q9). Find the names and ages of sailors with rating above 7**

SQL> select sname,age from sailors where rating>7;

SNAME AGE

------------------------------ ----------

Lubber 55.5

Andy 25.5

Rusty 35

Zorba 16

Horatio 35

**Q10). Find the average age of sailors with rating 10**

SQL> select avg(age) from sailors where rating=10;

AVG(AGE)

----------

25.5

**Q11). Find the names of sailors who reserved at least one boat**

SQL> select s.sname from sailors s,reserves r where s.sid=r.sid;

SNAME

------------------------------

Dustin

Dustin

Dustin

Dustin

Lubber

Lubber

Lubber

Horatio

Horatio

Horatio

10 rows selected.

**Q12). Find the names of sailors who reserved boat number 103**

SQL> select s.sname from sailors s,reserves r where (s.sid=r.sid)

2 and (r.bid=103);

SNAME

------------------------------

Dustin

Lubber

Horatio

**Q13). Find the names of sailors who reserved a red boat**

SQL> select s.sname from sailors s,reserves r,boats b

2 where (s.sid=r.sid) and (r.bid=b.bid) and (b.color='red');

SNAME

------------------------------

Dustin

Dustin

Lubber

Lubber

Horatio

**Q14). Find the sids of sailors who reserved a red boat**

SQL> select r.sid from reserves r, boats b

2 where (r.bid=b.bid) and (b.color='red');

SID

----------

22

22

31

31

64

**Q15). Find the names of sailors who have not reserved a red boat**

SQL> (select sname from sailors)

2 minus

3 (select s.sname from sailors s,reserves r,boats b

4 where (s.sid=r.sid) and (r.bid=b.bid) and (b.color='red'));

SNAME

------------------------------

Andy

Art

Bob

Brutus

Rusty

Zorba

6 rows selected.

**Q16). Find the names of sailors who reserved a red or a green boat**

SQL> select s.sname from sailors s,reserves r,boats b

2 where (s.sid=r.sid) and (r.bid=b.bid) and

3 ((b.color='red') or (b.color='green'));

SNAME

------------------------------

Dustin

Dustin

Dustin

Lubber

Lubber

Lubber

Horatio

Horatio

8 rows selected.

**Q17). Find the names of sailors who reserved a red and a green boat**

SQL> (select s.sname from sailors s,reserves r,boats b

2 where (s.sid=r.sid) and (r.bid=b.bid) and (b.color='red'))

3 intersect

4 (select s.sname from sailors s,reserves r,boats b

5 where (s.sid=r.sid) and (r.bid=b.bid) and (b.color='green'));

SNAME

------------------------------

Dustin

Horatio

Lubber

**Q18). Find the names of sailors who reserved a red boat but not green boat**

SQL> (select s.sid from sailors s,reserves r,boats b

2 where (s.sid=r.sid) and (r.bid=b.bid) and (b.color='red'))

3 minus

4 (select s.sid from sailors s,reserves r,boats b

5 where (s.sid=r.sid) and (r.bid=b.bid) and (b.color='green'));

SID

----------

64

**Q19). Find sailor names whose name begin and end with B and has at least three characters**

SQL> select sname from sailors where sname like 'B\_%B';

no rows selected

**Q20). Find the sailors with highest rating**

SQL> select \* from sailors where

2 rating=(select max(rating) from sailors);

SID SNAME RATING AGE

---------- ------------------------------ ---------- ----------

58 Rusty 10 35

71 Zorba 10 16

**Q21). Find the name and age of oldest sailor**

SQL> select sname,age from sailors where

2 age=(select max(age) from sailors);

SNAME AGE

------------------------------ ----------

Bob 63.5

**Q23). Find the sailor name,boat id and reservation date for each reservation**

SQL> select s.sname,r.bid,r.day from

2 sailors s,reserves r

3 where (s.sid=r.sid);

SNAME BID DAY

------------------------------ ---------- ---------

Dustin 101 10-OCT-98

Dustin 102 10-OCT-98

Dustin 103 08-OCT-98

Dustin 104 07-OCT-98

Lubber 102 10-NOV-98

Lubber 103 06-NOV-98

Lubber 104 12-NOV-98

Horatio 101 05-SEP-98

Horatio 102 08-SEP-98

Horatio 103 08-SEP-98

10 rows selected.

**Q22). Find the colors of boats reserved by Lubber**

SQL> select b.color from sailors s,reserves r,boats b

2 where

3 (s.sname='Lubber') and (s.sid=r.sid) and (r.bid=b.bid);

COLOR

----------

red

green

red

**Q24). Find the sids of sailors with age over 20 who have not reserved a red boat**

SQL> (select sid from sailors where age>20)

2 minus

3 (select s.sid from sailors s,reserves r,boats b

4 where (s.sid=r.sid) and (r.bid=b.bid) and (b.color='red'));

SID

----------

29

32

58

74

85

95

6 rows selected.

**Q25). Find the sailors who reserved all boats**

SQL> select s.\* from sailors s where

2 not exists

3 ((select b.bid from boats b)

4 minus

5 (select r.bid from reserves r where s.sid=r.sid));

SID SNAME RATING AGE

---------- ------------------------------ ---------- ----------

22 Dustin 7 45

Q26). **Find the sailors who reserved all red boats**

SQL> select s.\* from sailors s where

2 not exists

3 ((select b.bid from boats b where b.color='red')

4 minus

5 (select r.bid from reserves r where s.sid=r.sid));

SID SNAME RATING AGE

---------- ------------------------------ ---------- ----------

22 Dustin 7 45

31 Lubber 8 55.5

**Q27). Find the sailors whose rating is better than every sailor called Horatio**

SQL> select \* from sailors where

2 rating>all(select rating from sailors where sname='Horatio');

SID SNAME RATING AGE

---------- ------------------------------ ---------- ----------

58 Rusty 10 35

71 Zorba 10 16

**Q28). Find the sailors whose rating is better than some sailor called Horatio**

SQL> select \* from sailors where

2 rating>any(select rating from sailors where sname='Horatio');

SID SNAME RATING AGE

---------- ------------------------------ ---------- ----------

31 Lubber 8 55.5

32 Andy 8 25.5

58 Rusty 10 35

71 Zorba 10 16

74 Horatio 9 35

**Q29). Find the age of youngest sailor for each rating level**

SQL> select min(age) from sailors group by rating;

MIN(AGE)

----------

33

25.5

35

25.5

35

16

6 rows selected.

**Q30). For each red boat, find the number of reservations for this boat**

SQL> select b.bid,count(\*) from boats b, reserves r

2 where

3 (r.bid=b.bid) and (b.color='red')

4 group by b.bid;

BID COUNT(\*)

---------- ----------

102 3

104 2

**Q31). Find the names of sailors who reserved all boats called Interlake**

SQL> select s.sname from sailors s where

2 not exists

3 ((select b.bid from boats b where b.bname='Interlake')

4 minus

5 (select r.bid from reserves r where s.sid=r.sid));

SNAME

------------------------------

Dustin

Horatio

**Q32). Find the names of sailors who are older than oldest sailor with rating 10**

SQL> select sname from sailors where

2 age>(select max(age) from sailors where rating=10);

SNAME

------------------------------

Dustin

Lubber

Bob

**Q33). Find the sids of sailors who have a rating 10 or reserved boat 104**

SQL> (select sid from sailors where rating=10)

2 union

3 (select s.sid from sailors s,reserves r

4 where (s.sid=r.sid) and (r.bid=104));

SID

----------

22

31

58

71

**Q34). Find the names of sailors who reserved at least two boats**

SQL> select distinct s.sname from sailors s, reserves r1,reserves r2

2 where (s.sid=r1.sid) and (s.sid=r2.sid) and (r1.bid!=r2.bid);

SNAME

------------------------------

Dustin

Horatio

Lubber

**Q35). Compute increments for ratings of persons who have sailed two different boats on the same day**

SQL> select distinct s.sname,((s.rating)+1)

2 from sailors s, reserves r1,reserves r2

3 where (s.sid=r1.sid) and (s.sid=r2.sid)

4 and (r1.day=r2.day) and (r1.bid!=r2.bid);

SNAME ((S.RATING)+1)

------------------------------ --------------

Dustin 8

**Q36). Find the average age of sailors for each rating level that has at least two sailors**

SQL> select rating,avg(age) from sailors

2 group by rating

3 having count(\*)>=2;

RATING AVG(AGE)

---------- ----------

3 44.5

7 40

8 40.5

10 25.5

SQL> commit;

Commit complete.

SQL> exit;