

Experiment 2

2) Queries (along with sub Queries) using ANY, ALL, IN, EXISTS, NOT EXISTS, UNION, INTERSET, Constraints.

1. Find all sids of sailors who have a rating of 10 or reserved boat 104.

Solution:

```
SELECT S.sid
FROM Sailors S
WHERE S.rating = 10
UNION
SELECT R.sid
FROM Reserves R
WHERE R.bid = 104;
```

2. Find the sids of all sailor's who have reserved red boats but not green boats.

Solution:

```
SELECT S.sid
FROM Sailors S, Reserves R, Boats B
WHERE S.sid = R.sid AND R.bid = B.bid AND B.color = 'red'
EXCEPT
SELECT S2.sid
FROM Sailors S2, Reserves R2, Boats B2
WHERE S2.sid = R2.sid AND R2.bid = B2.bid AND B2.color = 'green';
```

3. Find sailors whose rating is better than some sailor called Horatio.

Solution:

```
SELECT S.sid
FROM Sailors S
WHERE S.rating > ANY (SELECT S2.rating
                     FROM Sailors S2
                     WHERE S2.sname = 'Horatio');
```

4. Find the sailor's with the highest rating.

Solution:

```
SELECT S.sid
FROM Sailors S
WHERE S.rating > ALL (SELECT S2.rating
                    FROM Sailors S2);
```

5. Find the names of sailors 'who have reserved a red boat.

Solution:

```
SELECT S.sname
FROM Sailors S
WHERE S.SID IN (SELECT R.sid
                FROM Reserves R
                WHERE R. bid IN (SELECT B.bid
                                FROM Boats B
                                WHERE B.color = 'red');
```

6. Find the names of sailors who have reserved boat number 103.

```
SELECT S.sname
FROM Sailors S
WHERE EXISTS (SELECT *
              FROM RESERVES R
              WHERE R.BID=103 AND R.SID=S.SID);
```

7. Find the names of sailors who have reserved all boats.

Solution:

```
SELECT S.sname
FROM Sailors S
WHERE NOT EXISTS (SELECT B.BID
                  FROM BOATS B
                  WHERE NOT EXISTS (SELECT R.BID
                                    FROM RESERVES R
                                    WHERE R.BID=B.BID AND
                                    R.SID=S.SID));
```