1. Sailors who have duty on 23-JAN-2018

```
SELECT s.s_name
FROM sailors s
JOIN reserves r ON s.sid = r.sid
WHERE r.day = '2018-01-23';
```

---

2. Boat name for sailor SID = 121 on 25-NOV-2017

```
SELECT b.boat_name
FROM boats b
JOIN reserves r ON b.bid = r.bid
WHERE r.sid = 121
 AND r.day = '2017-11-25';
```

---

3. Sailors and boats reserved on the last day of current month

```
SELECT s.s_name, b.boat_name
FROM reserves r
JOIN sailors s ON r.sid = s.sid
JOIN boats b ON r.bid = b.bid
WHERE r.day = LAST_DAY(CURRENT_DATE());
```

---

4. Months between today and next reservation of sailor SID = 911

```
SELECT TIMESTAMPDIFF(
    MONTH,
    CURRENT_DATE(),
    MIN(r.day)
   ) AS months_remaining
FROM reserves r
WHERE r.sid = 911
 AND r.day > CURRENT_DATE();
```

---

5. Sailors reserved on red boat on first day of next month

```
SELECT DISTINCT s.s_name
FROM sailors s
JOIN reserves r ON s.sid = r.sid
JOIN boats b ON r.bid = b.bid
WHERE b.colour = 'red'
 AND r.day = DATE_ADD(LAST_DAY(CURRENT_DATE()), INTERVAL 1 DAY);
```

6. Boats reserved more than 5 times

```
SELECT b.boat_name, COUNT(*) AS total_reservations
FROM boats b
JOIN reserves r ON b.bid = r.bid
GROUP BY b.bid, b.boat_name
HAVING COUNT(*) > 5;
```

7. Sailors who have never been reserved

```
SELECT s.s_name
FROM sailors s
LEFT JOIN reserves r ON s.sid = r.sid
WHERE r.sid IS NULL;
```

8. Sailor(s) with maximum number of reservations

```
SELECT s.s_name
FROM sailors s
JOIN reserves r ON s.sid = r.sid
GROUP BY s.sid, s.s_name
HAVING COUNT(*) = (
  SELECT MAX(cnt)
  FROM (
    SELECT COUNT(*) AS cnt
    FROM reserves
    GROUP BY sid
  ) AS sub
);
```

9. Boats reserved last month but not this month

```
SELECT DISTINCT b.boat_name
```

```sql
FROM boats b
JOIN reserves r ON b.bid = r.bid
WHERE MONTH(r.day) = MONTH(CURRENT_DATE() - INTERVAL 1 MONTH)
  AND YEAR(r.day) = YEAR(CURRENT_DATE() - INTERVAL 1 MONTH)
  AND b.bid NOT IN (
    SELECT bid
    FROM reserves
    WHERE MONTH(day) = MONTH(CURRENT_DATE())
      AND YEAR(day) = YEAR(CURRENT_DATE())
);
```

10. Boats with average sailor age > 30

```sql
SELECT b.boat_name, AVG(s.age) AS avg_age
FROM boats b
JOIN reserves r ON b.bid = r.bid
JOIN sailors s ON r.sid = s.sid
GROUP BY b.bid, b.boat_name
HAVING AVG(s.age) > 30;
```

11. Sailors whose next duty is within 7 days

```sql
SELECT DISTINCT s.s_name
FROM sailors s
JOIN reserves r ON s.sid = r.sid
WHERE r.day BETWEEN CURRENT_DATE()
        AND DATE_ADD(CURRENT_DATE(), INTERVAL 7 DAY);
```

12. Sailors assigned to more than one boat

```sql
SELECT s.s_name
FROM sailors s
JOIN reserves r ON s.sid = r.sid
GROUP BY s.sid, s.s_name
HAVING COUNT(DISTINCT r.bid) > 1;
```

13. Month-wise reservation count for current year

```sql
SELECT MONTH(r.day) AS month,
    COUNT(*) AS total_reservations
```

```
FROM reserves r
WHERE YEAR(r.day) = YEAR(CURRENT_DATE())
GROUP BY MONTH(r.day)
ORDER BY total_reservations DESC;
```

14. Sailors with consecutive duty days

```
SELECT DISTINCT s.s_name
FROM (
  SELECT sid, day,
      LAG(day) OVER (PARTITION BY sid ORDER BY day) AS prev_day
  FROM reserves
) t
JOIN sailors s ON t.sid = s.sid
WHERE DATEDIFF(t.day, t.prev_day) = 1;
```

15. Boats reserved by multiple sailors on the same day

```
SELECT b.boat_name, r.day, COUNT(DISTINCT r.sid) AS sailor_count
FROM reserves r
JOIN boats b ON r.bid = b.bid
GROUP BY b.bid, r.day
HAVING COUNT(DISTINCT r.sid) > 1;
```