

A company owns 7 ships. During a 12 days period they are scheduled to visit 7 ports. See the schedule in the table below. Due to size limitations no two ships can dock on the same day in the same port. During this 12 days period every ship has to stop at some port and remain there for the remaining period for maintenance. So if ship S2 decides to stop on day 2 in port #3 it will not visit the remaining ports on its schedule but it will block ship #S3 which is not acceptable. Find a schedule to assign the ships to the ports according to the given schedule subject to the following rules:

- a. No two ships should be docked at the same port on the same day.
- b. Once a ship chooses a port to stop (according to its schedule) it stays there until the end of the period.
- c. No ship will interfere with the schedule of another ship; thus S5 cannot decide to stop at port #2 on day 1 because it will block S1 on day #2 or S3 on day 5.

| Day | S1 | S2 | S3 | S4 | S5 | S6 | S7 |
|-----|----|----|----|----|----|----|----|
| 1 | * | * | 1 | * | 2 | * | * |
| 2 | 2 | 3 | * | 1 | 5 | * | * |
| 3 | 3 | * | 5 | * | * | 6 | 2 |
| 4 | * | 4 | 3 | 2 | * | 7 | 1 |
| 5 | 4 | * | 2 | 7 | 1 | 3 | 5 |
| 6 | * | 1 | * | 6 | * | 4 | * |
| 7 | 1 | 6 | * | 3 | 7 | * | 4 |
| 8 | 5 | 2 | * | * | 3 | 1 | 7 |
| 9 | * | 7 | 4 | * | 6 | 2 | 3 |
| 10 | 6 | 5 | 7 | 4 | * | * | * |
| 11 | 7 | * | 6 | 5 | 4 | * | * |
| 12 | * | * | * | * | * | 5 | 6 |