PORT MANAGEMENT SYSTEM

This Port Container Management System is a simple Java console application I created to practice using data structures such as stacks and queues. The system simulates how containers are stored temporarily at a port and how ships are registered and loaded in order.

- Containers are managed using a stack (LIFO – Last In, First Out) to represent how containers are piled up in storage. The most recently stored container is the first one available for loading.

- Ships are managed using a queue (FIFO – First In, First Out) to represent how ships line up at the dock. The ship that arrives first will be loaded first.

The system has a menu that allows the user to:

1. Store a container by entering its ID, description, and weight.

2. View all containers currently at the port, from the top to the bottom of the stack.

3. Register an arriving ship with its name and captain.

4. View waiting ships in the queue.

5. Load the next ship, which removes the top container from the stack and loads it onto the first ship in the queue.

OUTPUTS:

```
 PORT CONTAINTER MANAGEMENT SYSTEM
 [1] STORE CONTAINER(PUSH)
 [2] VIEW PORT CONTAINERS
 [3] REGISTER ARRIVING SHIP(enqueue)
 [4] VIEW WAITING SHIPS
 [5] LOAD NEXT SHIP
 [0] EXIT
ENTER CHOICE: 2

TOP -
CT004 | ELECTRONICS | 400Kg:
CT003 | CLOTHES | 100Kg:
CT002 | FRUITS | 200Kg:

Bottom -
```

```
PORT CONTAINTER MANAGEMENT SYSTEM
[1] STORE CONTAINER(PUSH)
[2] VIEW PORT CONTAINERS
[3] REGISTER ARRIVING SHIP(enqueue)
[4] VIEW WAITING SHIPS
[5] LOAD NEXT SHIP
[0] EXIT
NTER CHOICE: 3
nter ship name: MV OCEAN STAR
nter captain's name: CAPT. REYES
egistered:  Ship:  MV OCEAN STAR Capt: CAPT. REYES

PORT CONTAINTER MANAGEMENT SYSTEM
[1] STORE CONTAINER(PUSH)
[2] VIEW PORT CONTAINERS
[3] REGISTER ARRIVING SHIP(enqueue)
[4] VIEW WAITING SHIPS
[5] LOAD NEXT SHIP
[0] EXIT
NTER CHOICE: 3
nter ship name: MV SEAWAVE
nter captain's name: CAPT.SANTOS
egistered:  Ship:  MV SEAWAVE Capt: CAPT.SANTOS
```

```
PORT CONTAINTER MANAGEMENT SYSTEM
[1] STORE CONTAINER(PUSH)
[2] VIEW PORT CONTAINERS
[3] REGISTER ARRIVING SHIP(enqueue)
[4] VIEW WAITING SHIPS
[5] LOAD NEXT SHIP
[0] EXIT
NTER CHOICE: 4

RONT -
Ship:  MV OCEAN STAR Capt: CAPT. REYES
Ship:  MV SEAWAVE Capt: CAPT.SANTOS
- REAR

PORT CONTAINTER MANAGEMENT SYSTEM
[1] STORE CONTAINER(PUSH)
[2] VIEW PORT CONTAINERS
```

```
 PORT CONTAINTER MANAGEMENT SYSTEM
 [1] STORE CONTAINER(PUSH)
 [2] VIEW PORT CONTAINERS
 [3] REGISTER ARRIVING SHIP(enqueue)
 [4] VIEW WAITING SHIPS
 [5] LOAD NEXT SHIP
 [0] EXIT
ENTER CHOICE: 5
Loaded: CT004 | ELECTRONICS | 400Kg:  ?  Ship:  MV OCEAN STAR Capt: CAPT. REYES
Remaining containers: 2
Remaining ships waiting: 1

 PORT CONTAINTER MANAGEMENT SYSTEM
 [1] STORE CONTAINER(PUSH)
 [2] VIEW PORT CONTAINERS
 [3] REGISTER ARRIVING SHIP(enqueue)
 [4] VIEW WAITING SHIPS
 [5] LOAD NEXT SHIP
 [0] EXIT
ENTER CHOICE: 0
 Exiting System! Goodbye!
```