COSC 222: Data Structures
In Class Exercise 4 – Queues
Bonus 2 Marks

Start with the files **Ex4Queue.java** and **Ex4QueueTest.java**.

The **Ex4Queue.java** file represents a Queue data structure. It uses an array to hold the queue. It also contains several incomplete methods. Your task is to finish these methods so they can be tested in the **Ex4QueueTest.java** file.

Complete the following methods in the **Ex4Queue** class:

- enqueue(): This method is similar to the push() method for stacks. It adds a new element to the end of the queue.
- dequeue(): This method removes and returns the first element from the queue. Remember to move the remaining elements up to fill the first position.
- first(): This method is similar to the peek() method for stacks. It returns the first element from the queue *without removing it*.
- size(): This method returns the number of elements in the queue.

If you complete these methods correctly, you should see the following output when running **Ex4QueueTest.java**.

Sample Output:
```
Enqueue 4:
[Anne, Bob, Catherine, Dylan]
Size: 4

First element: Anne

Dequeue 2: (Anne, Bob)

Final list:
[Catherine, Dylan]
Size: 2
```

Submission Instructions:
- Only include your completed **Ex4Queue.java** file to canvas. **DO NOT** include any other files (e.g., .class, .java~ or any other files)
- Your Java programs **must compile and run** without requiring any modifications.
- To be eligible to earn full marks, all four methods should be working properly without any issues.