

Lab22: Stacks and Queues as ArrayLists

Goal: Create a Stack class that stores its underlying data as an `ArrayList<String>`.
Create a Queue class that stores its underlying data as an `ArrayList<Object>`.

Part 1: Create a Stack class with the following:

- Empty constructor
- private `ArrayList<String> data`
- public void `push(String s)`
- public `String pop()`
- public `String toString()`
- public `int size()`

Part 2: In `Main.main()`, create a Stack with 5 different names. Print the Stack. Then one at a time, pop an individual name and print it until the Stack is empty.

Part 3: Create a Queue class with the following:

- Empty constructor
- private `ArrayList<Object> data`
- public void `enqueue(Object o)`
- public `Object dequeue()`
- public `String toString()`
- public `int size()`

Part 4: In `Main.main()`, create a menu system where you can

1. Add person to queue
2. Remove person from queue
3. Print queue
9. Exit

Part 5: In the Queue class, create a `bubbleSort()` method that bubble sorts the queue.

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Part 6. Add the menu option:

4. Bubble sort

Part 7: Describe how the compareTo() method of Strings works.