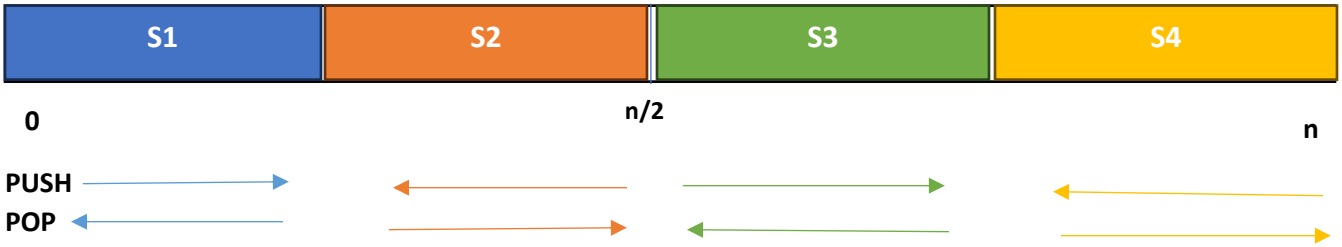
Assignment 1

1. In the first programming assignment question, the objective is to write a Java program that will implement four stacks in a single array. The following sketch will explain the logic and directions in which elements are pushed and popped to the stack.



Number of elements in each stack is equal (ex. 20/4 -> 5 elements in each stack).
You will need to implement each push method and each pop method for the corresponding stack.
Pay attention to the stack limits (ex. Stack2 will have Overflow when top is **decreased** and enter Stack1 area, Stack3 will have Overflow when top is **increased** and enter Stack4 area).
Implement method which will return the content of the entire array on which Stacks are placed. (display elements)

One class is going to define this array with 4 stacks containing push and pop methods with display method and constructor. Create another class in the same project and package which will contain main method and execute push/pop operations.

2. Implement Priority Queue program where elements are having priority based on the number value (Higher the number, greater the priority). Numbers are placed in priority queue from the highest to the lowest. The underlying array elements are going to be in the descending order.

-Separate priority queue and main class
-Implement insert, remove and display methods with constructor (isEmpty and isFull are optional)