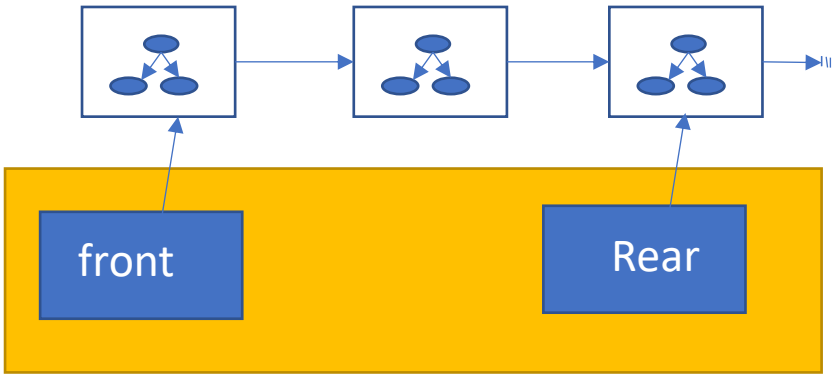
Al Alamein International University
Faculty of Computer Science and Engineering

CSE111 Data Structures

Assignment2

This is a group assignment; you can form a group of two. Submit your java files on MS Teams, make sure your write in every file, group members' IDs and names, and task allocation matrix.



Task1) [100 marks] Provide an ADT java class for a priority queue of binary search trees, shown above, named "MyPQBST" that supports the following functionalities:

1) **[20 marks]** Queue Construction.
2) **[15 marks]** Populate data. // suggest a way to fill in queue elements
3) **[15 marks]** QueueDisplay. // display the queue from front to end, where BSTs are displayed in post-order traverse style
4) **[15 marks]** EnqueueBST. // priority is incrementally determined based on the BST's root value.
5) **[15 marks]** DequeueBST. // Print the BST dequeued in breadth first style
6) **[20 marks]** Search for a value. // Search all the queue and print the root of every tree that has the value .

Hints.

- Create the proper data members, methods signatures, and proper class interface.
- Use the clean code rules indicated in class. Use refactoring and follow OODP.
- Create the proper test cases that show that your code is working correctly for every method
- Use comments in your code