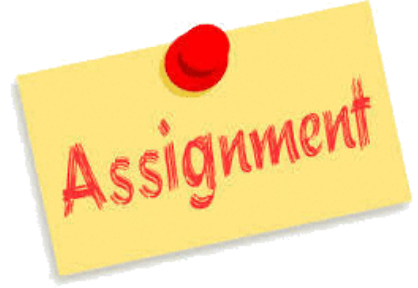
Data Structures and Algorithms Basics

Assignment

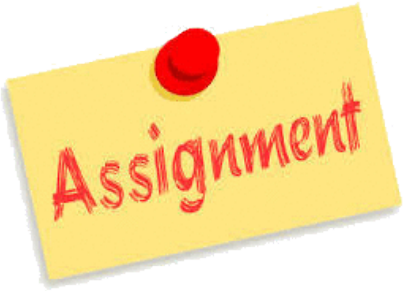
Problem Statement



Implement the following data structure supporting the listed functionalities using object-oriented principles.

- Linked List
  - Insert
  - Insert at position
  - Delete
  - Delete at position
  - Center
  - Sort
  - Reverse
  - Size
  - Iterator
  - Traverse/Print

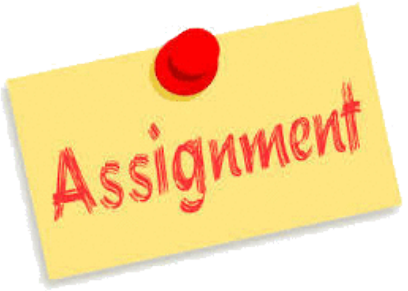
Problem Statement



Implement the following data structure supporting the listed functionalities using object-oriented principles.

- Stack
  - Push
  - Pop
  - Peek
  - Contains
  - Size
  - Center
  - Sort
  - Reverse
  - Iterator
  - Traverse/Print

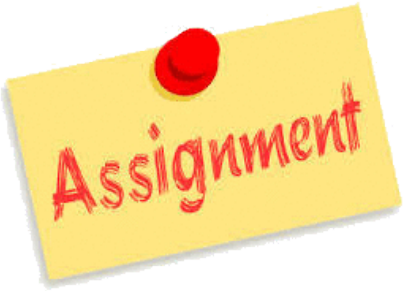
Problem Statement



Implement the following data structure supporting the listed functionalities using object-oriented principles.

- Queue
  - Enqueue
  - Dequeue
  - Peek
  - Contains
  - Size
  - Center
  - Sort
  - Reverse
  - Iterator
  - Traverse/Print

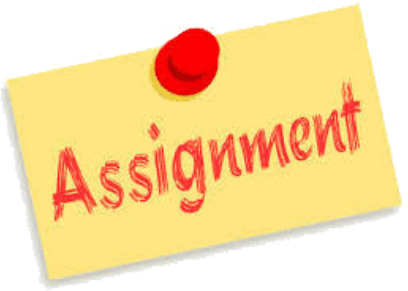
Problem Statement



Implement the following data structure supporting the listed functionalities using object-oriented principles.

- Priority Queue
  - Enqueue
  - Dequeue (Highest Priority)
  - Peek (Highest Priority)
  - Contains
  - Size
  - Reverse
  - Center
  - Iterator
  - Traverse/Print

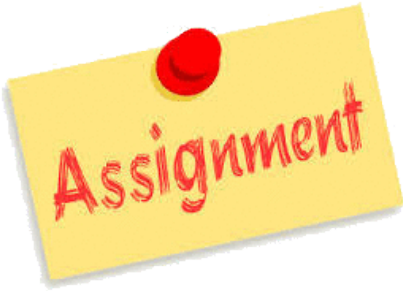
Problem Statement



Implement the following data structure supporting the listed functionalities using object-oriented principles.

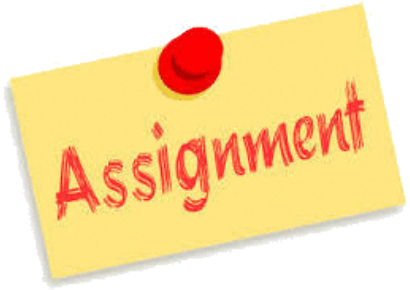
- Hash Table
  - Insert
  - Delete
  - Contains
  - Get Value by key
  - Size
  - Iterator
  - Traverse/Print

Expected Behaviour And Output



- Use of similar data structures already present in the language/framework is not allowed
- Make use of java's object-oriented capabilities for implementing the data structures
- Exception handling is expected in the program
- Jdk8 should be used for development

Evaluation Criteria



- Code Completeness and Correctness
- Usage of OO Principles, package/class structure, class/function/variable names
- Complexity of the operations
- Code should be in running condition
- Presentation Skills