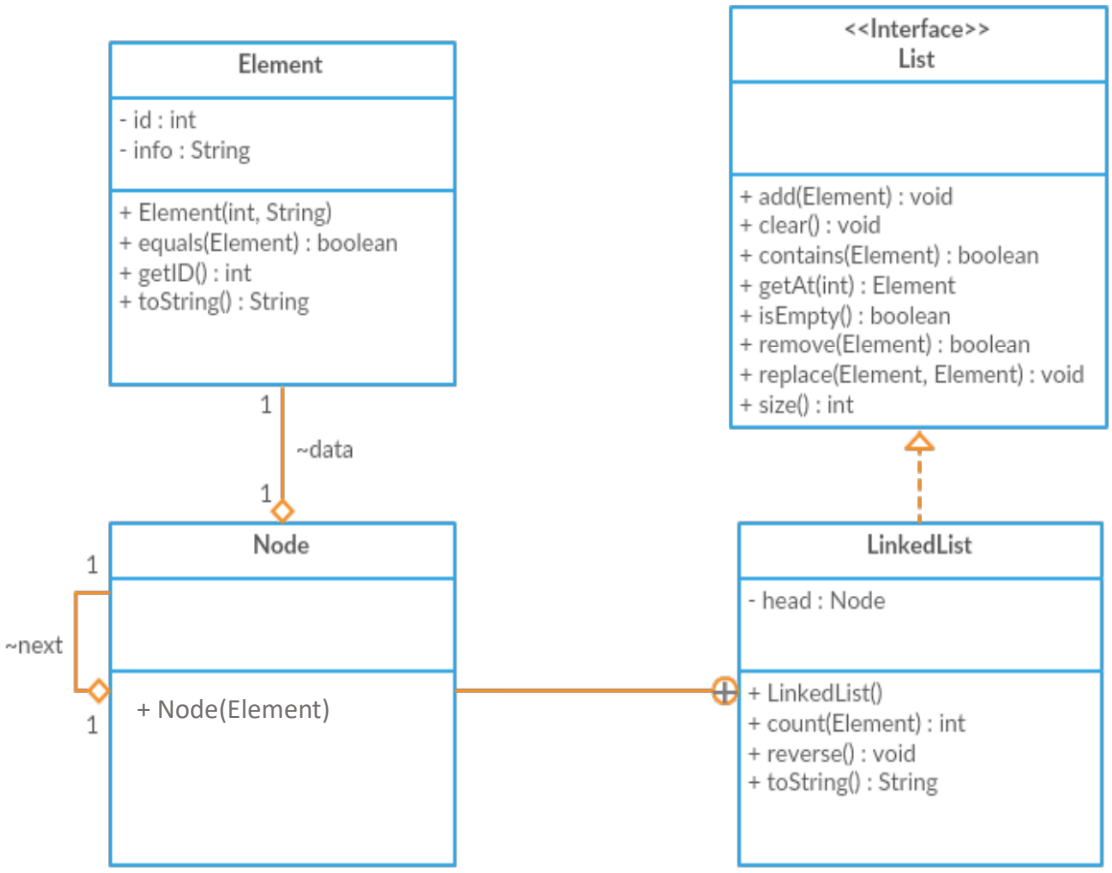
King Saud University
College of Computer and Information Sciences
Department of Computer Science
CSC113 – Computer Programming II – Linked List Lab – Fall 2019



Element class:

- **Attributes:**
  - ***id:*** the id of the element
  - ***info:*** the info of the element
- **Methods:**
  - ***Element(int id, String info):*** constructor
  - ***equals(Element e):*** returns true if the two elements have the same id
  - ***getID():*** returns the id of the element
  - ***toString():*** returns a string representation of the element

Node class:

- **Methods:**
  - ***Node(Element data):*** constructor

Interface List:

- **See attached file**

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LinkedList class:

- **Attributes:**
  - ***head*:** node acting as the head of the linked list
- **Methods:**
  - ***LinkedList()*:** default constructor
  - ***count(Element e):*** returns the number of occurrences of the element in the list
  - ***reverse():*** reverses the order of the elements in the list. Example:(1st, 2nd, 3rd, …, ith ith, i-1th, i-2th, …, 1st)
  - ***toString*():** returns a string representation of the list and its elements

Exercise 1: Translate into Java code the previous classes.

Exercise 2: Write a main method that tests the functionalities of the previous classes.
Example:

- Create a LinkedList
- Add some elements to it & print its contents
- Remove some elements from it & print its contents
- Replace some elements in it & print its contents
- Print the size of the list
- Retrieve an element at some position and print it
- Print the count of some element
- Reverse the list & print its contents
- Clear the list & print its contents