

**Due date:** Today, at the end of the lab period

- 1) Define a class called **Player** that implements Comparable <Player> with health and name attributes and has getter/setter methods to retrieve/access them. Define the appropriate constructors and give it a useful toString() method.
- 2) Define a class called LinkedList with an inner nested class Node.
- 3) The Node class has private attributes (Player player; Node next;). Define the appropriate constructor and toString() methods.
- 4) Class LinkedList has two attributes (Node head and int size).
- 5) Define the following LinkedList methods:  
insert (Player p); remove (Player p); toString ();
- 6) NOTE: your insert() method must be ordered. This means that your newly added Node should be placed in an ordered fashion such that your resulting linked list is ALWAYS sorted by the Player's health.  
For example:
  - If Player p has health 2000, then insert() will produce the following linked list: p→null
  - If Player p2 has health 1000, then insert() will produce the following linked list: p2→p→null
  - If Player p3 has health 500, then insert() will produce the following linked list: p3→p2→p→null
  - If Player p4 has health 5000, then insert() will produce the following linked list: p3→p2→p→p4→null
- 7) NOTE2: YOU SHOULD ALWAYS MAINTAIN ENCAPSULATION! Do NOT insert the Player argument, insert a copy/clone of the Player.
- 8) Create a Driver program to test your application.

**Submission:** Once you are done, upload your program to the

<https://fis.encs.concordia.ca/eas/>

Please name your file following this convention: *lab11\_studentID*, where *studentID* is your Student ID number.