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| CS152 H4 Due July 22 2020 3 points |

**Recursion on Linked Lists**

The application has class Magazine which describes one Magazine object. Class LLMagazineRec desribes linked list whose nodes have data of Magazine type and includes recursive method createArrayListRec which you have to implement. Class Driver has main method that creates myList as linked lists of magazines. It should invoke recursive method from class LLMagazineRec. Complete the missing code highlighted in bright green color.

Code for class Magazine

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| /\* Class Magazine describes magazine object that has title and number of pages  \* @author (Irena)  \* @version (July 17, 2020) \*/  public class Magazine  {  private int pages; //number of pages  private String name; // magazine name or title  public Magazine(int p, String n)  {  pages = p;  name = n;  }  public int getPages()  {  return pages;  }    public String getName()  {  return name;  }    public String toString()  {  return name + "\t" + pages;  }  } |

Code for class LLMagazineRec

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| /\* Class LLMagazineRec defines linked list of magazine objects. It includes  \* recursive methods to print all magazines, to calculate sum pages in all  \* magazines, and to find longest magazine in linked list.  \* @author (Irena)  \* @version (July 17, 2020) \*/  public class LLMagazineRec  {  private Node list;  public LLMagazineRec()  {  list = null;  }  public Node getList()  {  return list;  }    public void addRear(Magazine mag)  {  Node node = new Node(mag);  if (list == null)  list = node;  else  {  Node curr = list;  while (curr.next!= null)  curr= curr.next;  curr.next = node;  }  }    // Returns ArrayList<Magazine> storing all Magazine objects from the linked  // list. Method accepts reference to the beginning of the linked list. It  // must be recursive, and should work for empty and for non-empty list.  public ArrayList<Magazine> createArrayListRec(Node first)  {  //insert your code  }      private class Node  {  public Magazine data;  public Node next;    public Node(Magazine mag)  {  data = mag;  next = null;  }    public String toString()  {  return data.toString();  }  }  }//End LLMagazineRec |

Code for class Driver

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| /\*\*  \* Class Driver tests methods from LLMagazineRec class.  \* @author (Irena)  \* @version (July, 17, 2020)  \*/  public class Driver  {  public static void main(String[] args)  {  System.out.println("Creating linked list myList");  LLMagazineRec myList = new LLMagazineRec();  myList.addRear(new Magazine(39, "Golf Digest"));  myList.addRear(new Magazine(41, "Sports Illustrated"));  myList.addRear(new Magazine(105, "Time"));  myList.addRear(new Magazine(133, "Vogue"));    System.out.println("\nPrinting resulting ArrayList");  // insert your code to invoke method createArrayListRec  // and print its result by using for each loop.  }  } |

SUBMIT: One word document named H4-yourLastName. Put name, cs152 and your section number in upper left corner. The document must include:

* Missing code inserted in green marked methods and method invocations. Keep it highlighted in green.
* Picture of program run from BlueJ
* UML diagram