**Practice project - Assisted**

Write a program in Java to delete the first occurrence of a key in a singly linked list

**import** java.io.\*;

**public** **class** LinkedList

{

Node head; // head of list

**static** **class** Node

{

**int** data;

Node next;

Node(**int** d)

{

data = d;

next = **null**;

}

}

// Method to insert a new node

**public** **static** LinkedList insert(LinkedList list, **int** data)

{

// Create a new node with given data

Node new\_node = **new** Node(data);

new\_node.next = **null**;

// If the Linked List is empty, then make the new node as head

**if** (list.head == **null**)

{

list.head = new\_node;

}

**else**

{

// Else traverse till the last node and insert the new\_node there

Node last = list.head;

**while** (last.next != **null**)

{

last = last.next;

}

// Insert the new\_node at last node

last.next = new\_node;

}

**return** list;

}

**public** **static** **void** printList(LinkedList list)

{

Node currNode = list.head;

System.***out***.print("LinkedList: ");

// Traverse through the LinkedList

**while** (currNode != **null**)

{

// Print the data at current node

System.***out***.print(currNode.data + " ");

// Go to next node

currNode = currNode.next;

}

System.***out***.println();

}

// Method to delete a node in the LinkedList by KEY

**public** **static** LinkedList deleteByKey(LinkedList list, **int** key)

{

// Store head node

Node currNode = list.head, prev = **null**;

**if** (currNode != **null** && currNode.data == key)

{

list.head = currNode.next; // Changed head

System.***out***.println(key + " found and deleted");

**return** list;

}

**while** (currNode != **null** && currNode.data != key)

{

prev = currNode;

currNode = currNode.next;

}

**if** (currNode != **null**)

{

prev.next = currNode.next;

System.***out***.println(key + " found and deleted");

}

**if** (currNode == **null**)

{

System.***out***.println(key + " not found");

}

**return** list;

}

// method to create a Singly linked list with n nodes

**public** **static** **void** main(String[] args)

{

/\* Start with the empty list. \*/

LinkedList list = **new** LinkedList();

// Insert the values

list = *insert*(list, 1);

list = *insert*(list, 2);

list = *insert*(list, 3);

list = *insert*(list, 4);

list = *insert*(list, 5);

list = *insert*(list, 6);

list = *insert*(list, 7);

list = *insert*(list, 8);

// Print the LinkedList

*printList*(list);

// Delete node with value 1

*deleteByKey*(list, 1);

// Print the LinkedList

*printList*(list);

// Delete node with value 4

*deleteByKey*(list, 4);

// Print the LinkedList

*printList*(list);

// Delete node with value 10

*deleteByKey*(list, 10);

// Print the LinkedList

*printList*(list);

}

}