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**Singly Linked List**

Writing the program in Java to understand the working of the 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;**

**}**

**}**

**private static void If(boolean b) {**

**// TODO Auto-generated method stub**

**}**

**// 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);**

**}**

**}**

**Output:**



