# PRACTICAL 1

| **Name:** | Harsh Shah | **Semester:** | VII | **Division:** | 6 |
|---|---|---|---|---|---|
| **Roll No.:** | 21BCP359 | **Date:** | 25-07-24 | **Batch:** | G11 |
| **Aim:** | Implement a Doubly Linked List in append mode. | | | | |

## Program

```
import java.util.Scanner;

public class DLL {

   static Node head;

   static class Block {
      int rollNo;
      String name;
      String branch;

      Block(int roll, String nameIn, String branchIn) {
         rollNo = roll;
         name = nameIn;
         branch = branchIn;
      }
   }

   static class Node {
      Node prev;
      Block data;
      Node next;

      Node(Block std) {
         prev = null;
         data = std;
         next = null;
      }
   }

   public static DLL addBlock(DLL list, Block data) {
      Node newNode = new Node(data);
      if (head == null) {
         head = newNode;
      } else {
         Node temp = head;
         while (temp.next != null) {
            temp = temp.next;
         }
         temp.next = newNode;
         newNode.prev = temp;
```

```
        }
        return list;
    }

    public static void printList(DLL list) {
        System.out.println("\nThe List is: ");
        Node current = head;
        while (current != null) {
            System.out.println(current.data.rollNo + " - " + current.data.name + " - " + current.data.branch);
            current = current.next;
        }
    }

    public static void main(String[] args) {
        DLL list = new DLL();
        Scanner sc = new Scanner(System.in);

        Block b1 = new Block(1, "Harsh", "CSE");
        list = DLL.addBlock(list, b1);

        for (int i = 1; i <= 3; i++) {
            System.out.printf("Enter data for student %d:\n", i + 1);
            int roll = sc.nextInt();
            sc.nextLine();
            String name = sc.nextLine();
            String branch = sc.nextLine();

            Block b = new Block(roll, name, branch);
            list = DLL.addBlock(list, b);
        }

        printList(list);
        sc.close();
    }
}
```

## Output:

```
Enter data for student 2:
2
ajay
chemical
Enter data for student 3:
3
siddharth
ICT
Enter data for student 4:
4
rahul
mech

The List is:
1 - Harsh - CSE
2 - ajay - chemical
3 - siddharth - ICT
4 - rahul - mech
```