CS1005: Assignment #4
IIITDM Kancheepuram

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1 Problem 1

Write a program to insert student information. Take input from the

- Roll_No
- Name
- Course Id (If possible take 4 courses as array courses[4])
- Marks (If possible take 4 marks as array for each course[4])

Using the Linked list perform follwing operation. Create a function for all the operation. After every operation call print list function.

1. Insert n students information
2. Insert a new student information at k the position. Consider following case
   (a) If list is less than the kth position, then add at the end.
   (b) Else add at the kth position
3. On given linked list, take two keys (consider roll number here) in it, swap nodes for two given keys. Nodes should be swapped by changing links. Swapping data of nodes may be expensive in many situations when data contains many fields. The following cases to be handled.
   (a) x and y may or may not be adjacent.
   (b) Either x or y may be a head node.
   (c) Either x or y may be the last node.
   (d) x and/or y may not be present in the linked list.
4. Delete a node at head
5. Delete a node at end
6. Delete a new student information at k
   (a) If list is less than the kth position, then print "kth position does not exist"
   (b) Else delete the kth position
7. Find the n^{th} node from the end of the Linked List.
8. Move last element to front of a given Linked List.
   Ex: 1, 2, 3, 4, 5 should be printed as 5, 1, 2, 3, 4
9. Print the list in reverse way.
10. Delete complete list.

Imp Point: Use structure for storing student information(use dynamic memory allocation for each structure node)

Important Points:-

- Implement it using C language.
- Total Marks: 15
- Q3, Q7, Q8, Q9, Q10 are 2 marks and rest is one marks.