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1: // C program to reverse a linked list in groups of given siz
2: #include<stdio.h>
3: #include<stdlib.h>
4:
5: /* Link list node */
6: struct Node
7: {
8:     int data;
9:     struct Node* next;
10: };
11:
12: /* Reverses the linked list in groups of size k and returns
13: pointer to the new head node. */
14: struct Node *reverse (struct Node *head, int k)
15: {
16:     if (!head)
17:         return NULL;
18:
19:     struct Node* current = head;
20:     struct Node* next = NULL;
21:     struct Node* prev = NULL;
22:     int count = 0;
23:
24:
25:
26:     /*reverse first k nodes of the linked list */
27:     while (current != NULL && count < k)
28:     {
29:         next = current->next;
30:         current->next = prev;
31:         prev = current;
32:         current = next;
33:         count++;
34:     }
35:
36:     /* next is now a pointer to (k+1)th node
37:     Recursively call for the list starting from current.
38:     And make rest of the list as next of first node */
39:     if (next != NULL)

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40:     head->next = reverse(next, k);
41:
42:     /* prev is new head of the input list */
43:     return prev;
44: }
45:
46: /* UTILITY FUNCTIONS */
47: /* Function to push a node */
48: void push(struct Node** head_ref, int new_data)
49: {
50:     /* allocate node */
51:     struct Node* new_node =
52:         (struct Node*) malloc(sizeof(struct Node));
53:
54:     /* put in the data */
55:     new_node->data = new_data;
56:
57:     /* Link the old list off the new node */
58:     new_node->next = (*head_ref);
59:
60:     /* move the head to point to the new node */
61:     (*head_ref) = new_node;
62: }
63:
64: /* Function to print linked list */
65: void printList(struct Node *node)
66: {
67:     while (node != NULL)
68:     {
69:         printf("%d ", node->data);
70:         node = node->next;
71:     }
72: }
73:
74: /* Driver code*/
75: int main(void)
76: {
77:     /* Start with the empty list */
78:     struct Node* head = NULL;

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79:
80:     /* Created Linked list is 1->2->3->4->5->6->7->8->9 */
81:     push(&head, 9);
82:     push(&head, 8);
83:     push(&head, 7);
84:     push(&head, 6);
85:     push(&head, 5);
86:     push(&head, 4);
87:     push(&head, 3);
88:     push(&head, 2);
89:     push(&head, 1);
90:
91:     printf("\nGiven linked list \n");
92:     printList(head);
93:     head = reverse(head, 4);
94:
95:     printf("\nReversed Linked list \n");
96:     printList(head);
97:
98:     return(0);
99: }
100:
```