

Lab 4

1. Consider the linked list in Figure 1.

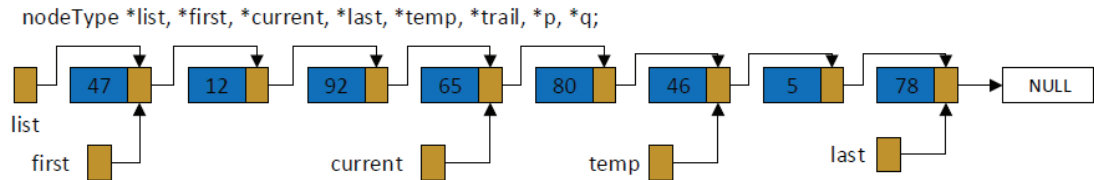


Figure 1 Linked list

Write C++ statements to do the following:

- Write C++ code so that **first** traverses the entire list.
 - Create the node **info 17** and insert after **current**.
 - Delete the last node of the list and deallocate the memory occupied by this node. After deleting the node make **last** point to the last node of the list and the link of the last node must be **nullptr**.
 - Delete the node with **info 92**. Also, deallocate the memory occupied by this node.
 - Write a C++ code to move the node with info **46** after **current** by adjusting the links of nodes in the linked list.
- Write the definition of the method **second** that takes a parameter a stack object and returns the second element of the stack. The original stack remains unchanged.
 - Suppose that **queue** is an object of type **queueType<string>** of size 50, **queue** contains 20 elements, and the index of the first element **queue** is 35.
 - What is the index of the last element **queue**?
 - After removing the next element from **queue**, what is the index of the first element?
 - Write the expression that returns **true** if **queue** is nonempty, **false** otherwise.
 - Write the statement that inserts "**programming**" into **queue**. What is the index of the last element after the insertion operation.