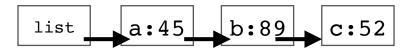
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1. Fill in the code and memory diagram so that the linked list will match the structure shown above. Assume ints and pointers take 4 bytes.

```
struct LNode {
  int data;
  struct LNode* next;
};
struct LList {
  struct LNode* head;
};

int main() {
  struct LList* list;
  struct LNode *a, *b, *c;
  list = NULL;
  a = NULL; b = NULL; c = NULL;
```

Stack		
Address	Name	Contents
10000		
10004		
10008		
10012		
10016		

Неар		
Address	Alloc?	Contents
50000		
49996		
49992		
49988		
49984		
49980		
49976		
49972		
49968		

CS 2113 - C-4: From C to Java

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2. Write an algorithm (NOT code) which will append a new data node to a linked list. You should assume the linked list is structured like the one in problem 1, but your algorithm should not be language specific.

Add node to end of a list: inputs: a List to add to the value of the new data to put into the list

Self-Quiz

- 1. How is a linked list different from an array? When might you use each data structure?
- 2. If the LList struct was modified to have a pointer to both the head and tail of the list, how would that affect your append function?
- **3.** A doubly linked list has a pointer to the next element and a pointer to the previous element. What might that be useful for?
- 4. What are some differences between Java and C? How are they similar?
- **5.** Given two C and Java programs that have identical functionality, which would you expect to use more heap memory and which would use more stack memory?