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CS1350
Program 1
Linked_List
Due Date: 10/24/17

Design Document

Given a few prepared files including header, implementation, use, and data file complete the function definitions of the implementation file to allow the program to run as intended. The total completion of this program creates a linked list that is created my manipulating the functions of various header files.

UML

List_node.h

+ List()
+ List(const element &item)
+ ~list()
+ void append(const element &item)
+ void insert(const element &item)
+ bool empty()
+ bool at_end()
+ void move_to_next()
+ void move_to_start()
+ element get_current()
# list_node *head
# list_node *current
# list_node *previous;

List_node.h

+ list_node()
+ list_node(const element &item)
+ void put_item(const element &item)
+ void put_next(list_node *ptr);
+ element get_item();
+ list_node *get_next();
# element data
# ist_node *next;

Pre-conditions:

- Linked list is created
- Using the class data type
- Data file can be read into the program
- Program runs once functions are properly defined
- Program does not require user input

Post-conditions:

- Linked list is printed
- Output is as intended

Reflection

Overview:

The purpose of this program was to reinforce the concept of the class data type and to foster the concepts of creating and implementing an unsorted linked list. Most of the program has already been implemented, and the main concern of the programmer is to complete function definitions.

Challenges and Solutions:

I faced several challenges while doing this program that prevented me from fully completing this program. One major problem I faced was transitioning from theory aspect of programming to the implementation aspect of programming. I felt as if I understood how pointers work for the most part, however, I fumbled through the code when I first saw it. To get through this program, I had to consult a few people including tutors and classmates.

Lessons Learned:

Through this program I have learned a little more on how various members of a class file. I was also able to grasp the fundamental theory of pointers and linked list; however, I have not grasps the concepts of classes or linked lists enough to have been able to complete this program.

Output Listing

```
building an unordered list this
print original list
    this is a test this is only a test do
    not panic do not pass go do collect two hundred
  dollars the data in this file is to be used
    to test the list class I need more words so
    that I can check it out with more values than
previously used to validate the list functions the more the
  better because we need to have plenty of stuff for
    the example values after all it is generally necessary to
    find out if a class works for large sets now
    lets add even more to this file of nonsense by
  making it bigger we can generate an even better trial
    for the linked list program some new data will help
  extend the length of the list so that it fills
    even more of the screen as it executes
end of original list


destroying original list
print destroyed list

end of destroyed list

print copied list

end of copied list


building an ordered list
Segmentation fault: 11
```