PFII Lab 7: Linked Lists I

In this lab I learned about linked lists, and how they are an application of pointers where objects are stored within other objects. By manipulating linked lists, I learned more on the usage of the -> operator which allows us to point to specific elements when adding or deleting parts of the list or to the next node in the list which is good for iteration. Another key point of this lab was writing conditionals with the -> operation notation. An example of a conditional is in Task 2 where the loop iterates while the current->next->next does not equal NULL (2 after current is not NULL). Overall, this lab showed the basics of linked list creation and manipulation and provides a good introduction into their application.

**Program Output:**

Node 0 Elem: 0 Address: 0x22dac20 Next Address: 0x22dac40

Node 1 Elem: 1 Address: 0x22dac40 Next Address: 0x22dac60

Node 2 Elem: 2 Address: 0x22dac60 Next Address: 0x22dac80

Node 3 Elem: 3 Address: 0x22dac80 Next Address: 0x22daca0

Node 4 Elem: 4 Address: 0x22daca0 Next Address: 0x22dacc0

Node 5 Elem: 5 Address: 0x22dacc0 Next Address: 0x22dace0

Node 6 Elem: 6 Address: 0x22dace0 Next Address: 0x22dad00

Node 7 Elem: 7 Address: 0x22dad00 Next Address: 0x22dad20

Node 8 Elem: 8 Address: 0x22dad20 Next Address: 0x22dad40

Node 9 Elem: 9 Address: 0x22dad40 Next Address: 0x22dad60

Node 10 Elem: 10 Address: 0x22dad60 Next Address: 0x22dad80

Node 11 Elem: 11 Address: 0x22dad80 Next Address: 0x22dada0

Node 12 Elem: 12 Address: 0x22dada0 Next Address: 0x22dadc0

Node 13 Elem: 13 Address: 0x22dadc0 Next Address: 0x22dade0

Node 14 Elem: 14 Address: 0x22dade0 Next Address: 0x22dae00

Node 15 Elem: 15 Address: 0x22dae00 Next Address: 0

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TASK #1:

Node 0 Elem: 1 Address: 0x22dac40 Next Address: 0x22dac60

Node 1 Elem: 2 Address: 0x22dac60 Next Address: 0x22dac80

Node 2 Elem: 3 Address: 0x22dac80 Next Address: 0x22daca0

Node 3 Elem: 4 Address: 0x22daca0 Next Address: 0x22dacc0

Node 4 Elem: 5 Address: 0x22dacc0 Next Address: 0x22dace0

Node 5 Elem: 6 Address: 0x22dace0 Next Address: 0x22dad00

Node 6 Elem: 7 Address: 0x22dad00 Next Address: 0x22dad20

Node 7 Elem: 8 Address: 0x22dad20 Next Address: 0x22dad40

Node 8 Elem: 9 Address: 0x22dad40 Next Address: 0x22dad60

Node 9 Elem: 10 Address: 0x22dad60 Next Address: 0x22dad80

Node 10 Elem: 11 Address: 0x22dad80 Next Address: 0x22dada0

Node 11 Elem: 12 Address: 0x22dada0 Next Address: 0x22dadc0

Node 12 Elem: 13 Address: 0x22dadc0 Next Address: 0x22dade0

Node 13 Elem: 14 Address: 0x22dade0 Next Address: 0x22dae00

Node 14 Elem: 15 Address: 0x22dae00 Next Address: 0

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TASK #2:

Node 0 Elem: 1 Address: 0x22dac40 Next Address: 0x22dac60

Node 1 Elem: 2 Address: 0x22dac60 Next Address: 0x22dac80

Node 2 Elem: 3 Address: 0x22dac80 Next Address: 0x22daca0

Node 3 Elem: 4 Address: 0x22daca0 Next Address: 0x22dacc0

Node 4 Elem: 5 Address: 0x22dacc0 Next Address: 0x22dace0

Node 5 Elem: 6 Address: 0x22dace0 Next Address: 0x22dad00

Node 6 Elem: 7 Address: 0x22dad00 Next Address: 0x22dad20

Node 7 Elem: 8 Address: 0x22dad20 Next Address: 0x22dad40

Node 8 Elem: 9 Address: 0x22dad40 Next Address: 0x22dad60

Node 9 Elem: 10 Address: 0x22dad60 Next Address: 0x22dad80

Node 10 Elem: 11 Address: 0x22dad80 Next Address: 0x22dada0

Node 11 Elem: 12 Address: 0x22dada0 Next Address: 0x22dadc0

Node 12 Elem: 13 Address: 0x22dadc0 Next Address: 0x22dade0

Node 13 Elem: 14 Address: 0x22dade0 Next Address: 0

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TASK #3:

Node 0 Elem: 9 Address: 0x22daf00 Next Address: 0x22daee0

Node 1 Elem: 8 Address: 0x22daee0 Next Address: 0x22daec0

Node 2 Elem: 7 Address: 0x22daec0 Next Address: 0x22daea0

Node 3 Elem: 6 Address: 0x22daea0 Next Address: 0x22dae80

Node 4 Elem: 5 Address: 0x22dae80 Next Address: 0x22dae60

Node 5 Elem: 4 Address: 0x22dae60 Next Address: 0x22dae40

Node 6 Elem: 3 Address: 0x22dae40 Next Address: 0x22dae20

Node 7 Elem: 2 Address: 0x22dae20 Next Address: 0x22dac20

Node 8 Elem: 1 Address: 0x22dac20 Next Address: 0x22dae00

Node 9 Elem: 0 Address: 0x22dae00 Next Address: 0x22dac40

Node 10 Elem: 1 Address: 0x22dac40 Next Address: 0x22dac60

Node 11 Elem: 2 Address: 0x22dac60 Next Address: 0x22dac80

Node 12 Elem: 3 Address: 0x22dac80 Next Address: 0x22daca0

Node 13 Elem: 4 Address: 0x22daca0 Next Address: 0x22dacc0

Node 14 Elem: 5 Address: 0x22dacc0 Next Address: 0x22dace0

Node 15 Elem: 6 Address: 0x22dace0 Next Address: 0x22dad00

Node 16 Elem: 7 Address: 0x22dad00 Next Address: 0x22dad20

Node 17 Elem: 8 Address: 0x22dad20 Next Address: 0x22dad40

Node 18 Elem: 9 Address: 0x22dad40 Next Address: 0x22dad60

Node 19 Elem: 10 Address: 0x22dad60 Next Address: 0x22dad80

Node 20 Elem: 11 Address: 0x22dad80 Next Address: 0x22dada0

Node 21 Elem: 12 Address: 0x22dada0 Next Address: 0x22dadc0

Node 22 Elem: 13 Address: 0x22dadc0 Next Address: 0x22dade0

Node 23 Elem: 14 Address: 0x22dade0 Next Address: 0

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TASK #4:

Node 0 Elem: 9 Address: 0x22daf00 Next Address: 0x22daee0

Node 1 Elem: 8 Address: 0x22daee0 Next Address: 0x22daec0

Node 2 Elem: 7 Address: 0x22daec0 Next Address: 0x22db040

Node 3 Elem: 0 Address: 0x22db040 Next Address: 0x22db020

Node 4 Elem: 1 Address: 0x22db020 Next Address: 0x22db000

Node 5 Elem: 2 Address: 0x22db000 Next Address: 0x22dafe0

Node 6 Elem: 3 Address: 0x22dafe0 Next Address: 0x22dafc0

Node 7 Elem: 4 Address: 0x22dafc0 Next Address: 0x22dafa0

Node 8 Elem: 5 Address: 0x22dafa0 Next Address: 0x22daf80

Node 9 Elem: 6 Address: 0x22daf80 Next Address: 0x22daf60

Node 10 Elem: 7 Address: 0x22daf60 Next Address: 0x22daf40

Node 11 Elem: 8 Address: 0x22daf40 Next Address: 0x22daf20

Node 12 Elem: 9 Address: 0x22daf20 Next Address: 0x22daea0

Node 13 Elem: 6 Address: 0x22daea0 Next Address: 0x22dae80

Node 14 Elem: 5 Address: 0x22dae80 Next Address: 0x22dae60

Node 15 Elem: 4 Address: 0x22dae60 Next Address: 0x22dae40

Node 16 Elem: 3 Address: 0x22dae40 Next Address: 0x22dae20

Node 17 Elem: 2 Address: 0x22dae20 Next Address: 0x22dac20

Node 18 Elem: 1 Address: 0x22dac20 Next Address: 0x22dae00

Node 19 Elem: 0 Address: 0x22dae00 Next Address: 0x22dac40

Node 20 Elem: 1 Address: 0x22dac40 Next Address: 0x22dac60

Node 21 Elem: 2 Address: 0x22dac60 Next Address: 0x22dac80

Node 22 Elem: 3 Address: 0x22dac80 Next Address: 0x22daca0

Node 23 Elem: 4 Address: 0x22daca0 Next Address: 0x22dacc0

Node 24 Elem: 5 Address: 0x22dacc0 Next Address: 0x22dace0

Node 25 Elem: 6 Address: 0x22dace0 Next Address: 0x22dad00

Node 26 Elem: 7 Address: 0x22dad00 Next Address: 0x22dad20

Node 27 Elem: 8 Address: 0x22dad20 Next Address: 0x22dad40

Node 28 Elem: 9 Address: 0x22dad40 Next Address: 0x22dad60

Node 29 Elem: 10 Address: 0x22dad60 Next Address: 0x22dad80

Node 30 Elem: 11 Address: 0x22dad80 Next Address: 0x22dada0

Node 31 Elem: 12 Address: 0x22dada0 Next Address: 0x22dadc0

Node 32 Elem: 13 Address: 0x22dadc0 Next Address: 0x22dade0

Node 33 Elem: 14 Address: 0x22dade0 Next Address: 0

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