

Lab #3

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Course Policy: Read all the instructions below carefully before you start working on the problems, and before you make a submission.

Problem 1: Implement Doubly Linked List

Description: Implement doubly linked list. Your code should implement functions for:

- Appending to the end of list — a
- Inserting to specific position — i value index
- Removing item by value — r value
- Removing item by index — d index
- Displaying items in list — p
- Printing length of list — l
- Printing items starting from tail — t
- Reversing items in list — v
- Erasing all items in list — e

Use 'x' to exit from program.

```
struct Node
{
    int data;
    Node *next;
    Node *prev;
} *head;
```

Example	
Input	Output
a 1	
a 2	
a 3	
a 4	
p	1 2 3 4
l	4
r 3	Not found
r 8	
p	1 2 4
i 10 1	10 20 30 1 2 4
i 20 2	
i 30 3	
p	
d 1	30 1 2 4
d 1	
p	
x	

Example	
Input	Output
a 1 a 2 a 3 a 4 p v p x	1 2 3 4 4 3 2 1

Example	
Input	Output
a 1 a 2 a 3 a 4 p e p l x	1 2 3 4 0

Example	
Input	Output
a 1 a 2 a 3 a 4 a 5 p l r 1 p t r 2 r 3 r 4 p t e p x	1 2 3 4 5 5 2 3 4 5 5 4 3 2 5 5

Example	
Input	Output
a 10 a 20 a 30 a 40 r 10 p t i 35 3 i 0 1 p t l x	20 30 40 40 30 20 0 20 30 35 40 40 35 30 20 0 5