

Problem Set 1

1-1

(a) $(f_5, f_3, f_4, f_1, f_2)$

(c) $(\{f_2, f_5\}, f_4, f_1, f_3)$

(b) $(f_1, f_2, f_3, f_5, f_4)$

(d) $(f_5, f_2, f_1, f_3, f_4)$

1-2

(a) Assume this algorithm allows destructivity.

Alg reverse(D, i, k)

1 if $k \leq 0$

2 return

3 $D.insert_at(i, D.delete_at(i+k-1))$

4 reverse($D, i+1, k-2$)

(b)

Alg move(D, i, k, j)

1 if $i \geq k$

2 return

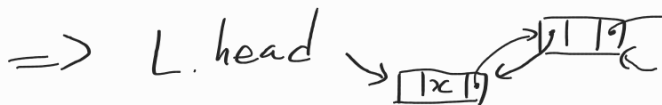
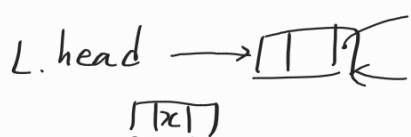
3 $D.insert_at(j, D.delete_at(i))$

4 move($D, i, k-1, j$)

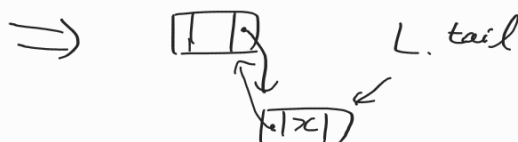
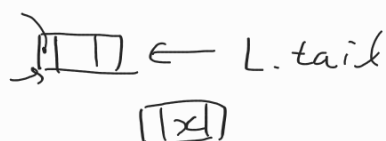
1-3

1-4

(a) insert_first(x):



insert_last(x):



delete_first():



delete_last():



(b) Make $x_1.\text{prev}$ points to $x_2.\text{next}$ and $x_2.\text{next}$ points to $x_1.\text{prev}$ and x_1 does not point to $x_1.\text{prev}$ and x_2 does not point to x_2 . Let L' denote a sublist $\langle x_1, \dots, x_2 \rangle$.

Return $(L - L')$.

(c)