

10.2-6

function union(l_1, l_2) // where l_1 and l_2 are doubly linked lists
 $l_1.tail.next = l_2.head$
 $l_2.head.prev = l_1.tail$
 $l_1.tail = l_2.tail$
 return l_1

10.2-1

INSERT and DELETE can work in $O(1)$ time if passed "element" as a parameter. In this case, you can do a simple pointer swap of the element that takes constant time. INSERT and DELETE can also be $O(1)$ if they operate on the head or tail. But an INSERT/DELETE-at index or INSERT/DELETE-by key would take $O(n)$ time.

10.2-3

function ENQUEUE($L, elem$)

$L.tail.next = elem$

$L.tail = elem$

function DEQUEUE(L)

$dequened = L.head$

$L.head = dequened.next$

return $dequened$

10.1-1

1 2 3 4 5 6

4 | | | | | |

↑
top

Push($S, 4$)

1 2 3 4 5 6

4 | 8 | | | | |

↑
top

Push($S, 8$)

1 2 3 4 5 6

4 | 1 | | | | |

↑
top

Push($S, 1$)

1 2 3 4 5 6

4 | 8 | | | | |

↑
top

return 8

Pop(S)

1 2 3 4 5 6

4 | 1 | | | | |

↑
top

Pop(S) return 1