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CSC375-01

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4.5, 4.9, 4.10, 4.20(a)

Homework 6

4.5) template <class T>

void reverse()

{

If ( head->next == NULL )

return;

if ( fence->next == NULL ) // Move fence forward once

fence = head;

else

fence = fence->next;

link<T>\* x = head->next;

link<T>\* y = x->next;

while ( y != NULL)

{

link<Elem>\* z = y->next;

y->next = x;

x = y;

y = z;

}

head->next = x;

}

4.9a) E = 8, P = 4, D = 20

N = ( D\*E ) / ( P + E )

N = ( 20 \* 8 ) / ( 4 + 8 ) = 13.33; break-even point is 13 elements or less

4.9b) E = 2, P = 4, D = 30

N = ( D\*E ) / ( P + E )

N = ( 30 \* 2 ) / ( 4 + 2 ) = 10; break-even point is less than 10 elements

4.9c) E = 1, P = 4, D = 30

N = ( D\*E ) / ( P + E )

N = ( 30 \* 1 ) / ( 4 + 1 ) = 6; break-even point is less than 63 elements

4.9d) E = 32, P = 4, D = 40

N = ( D\*E ) / ( P + E )

N = ( 40 \* 32 ) / ( 4 + 32 ) = 35.5; break-even point is 35 elements or less

4.10) int = 4 bytes, double = 8 bytes, pointer = 4 bytes,

4.10a) E = 4 and P = 4

n = ( 4 \* D ) / 8 = .5D; linked lists are more space efficient when the array is less than half full.

4.10b) E = 8 and P = 4

n = ( 8 \* D ) / 12 = .66D; linked lists are more space efficient when the array is less than 2/3 full.

4.20a) iterate through a string, pushing each time a left paranth is found, popping when a right paranth is found. String is unbalanced on stack underflow, or when stack size > 0 at EOF.