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Assignment: CS 260 Project 1

Due Date: 3/31/2016

BELOW IS ALL OF THE OUTPUT COPIED FROM THE CONSOLE THAT WAS GENERATED BY THE PROGRAM

Welcome to the CS260 Project 2

This is a program that demonstrates methods used with a linked sequence

Step 1: The sequence is populated with 100,000 nodes

The head node is shown below

The head node is: Rectangle: Width = 32, Length = 16

Step 2: Verify that the listPosition() method returns the tail

Using getTail(), the tail is: Rectangle: Width = 10, Length = 2

Using listPosition(), the tail is: Rectangle: Width = 10, Length = 2

Both return the same Node, therefore both methods work!

Step 3: Populate a rectangle array

The populated Rectangle arrays length: 100000

Step 4: Find the occurences of squares and of the target

The number of squares is: 2452

The number of occurences of the target is: 2452

Step 5: Calculate the runtime of each step in Milliseconds

Step 1: 19ms

Step 2: 10ms

Step 3: 10ms

Step 4: 10ms

Step 5: 0ms

Now we will repeat steps 1-5 using 1,000,000 rectangles

Step 1: The sequence is populated with 1,000,000 nodes

The head node is shown below

The head node is: Rectangle: Width = 22, Length = 23

Step 2: Verify that the listPosition() method returns the tail

Using getTail(), the tail is: Rectangle: Width = 8, Length = 24

Using listPosition(), the tail is: Rectangle: Width = 8, Length = 24

Both return the same Node, therefore both methods work!

Step 3: Populate a rectangle array

The populated Rectangle arrays length: 1000000

Step 4: Find the occurences of squares and of the target

The number of squares is: 27459

The number of occurences of the target is: 27459

Step 5: Calculate the runtime of each step in Milliseconds

Step 1: 159ms

Step 2: 9ms

Step 3: 42ms

Step 4: 3ms

Step 5: 1ms

Now we will repeat steps 1-5 using 10,000,000 rectangles

Step 1: The sequence is populated with 10,000,000 nodes

The head node is shown below

The head node is: Rectangle: Width = 38, Length = 21

Step 2: Verify that the listPosition() method returns the tail

Using getTail(), the tail is: Rectangle: Width = 4, Length = 33

Using listPosition(), the tail is: Rectangle: Width = 4, Length = 33

Both return the same Node, therefore both methods work!

Step 3: Populate a rectangle array

The populated Rectangle arrays length: 10000000

Step 4: Find the occurences of squares and of the target

The number of squares is: 277262

The number of occurences of the target is: 277262

Step 5: Calculate the runtime of each step in Milliseconds

Step 1: 4078ms

Step 2: 84ms

Step 3: 112ms

Step 4: 38ms

Step 5: 0ms

Now we will repeat steps 1-5 using 10,000,000 non-random rectangles

Step 1: The sequence is populated with 10,000,000 nodes

The head node is shown below

The head node is: Rectangle: Width = 20, Length = 20

Step 2: Verify that the listPosition() method returns the tail

Using getTail(), the tail is: Rectangle: Width = 20, Length = 20

Using listPosition(), the tail is: Rectangle: Width = 20, Length = 20

Both return the same Node, therefore both methods work!

Step 3: Populate a rectangle array

The populated Rectangle arrays length: 10000000

Step 4: Find the occurences of squares and of the target

The number of squares is: 10000000

The number of occurences of the target is: 10000000

Step 5: Calculate the runtime of each step in Milliseconds

Step 1: 3755ms

Step 2: 82ms

Step 3: 3428ms

Step 4: 36ms

Step 5: 0ms