Subject: Speed Requirement of Min/Max Height
Posted by davidmccoy on Tue, 28 Feb 2017 03:58:59 GMT
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To determine the min and max height, are we required to use something speedier than O(n) (b/c you can either recursively go through the whole tree and compare min/max of two heights, or use an iterative solution with a queue and stop at the level where a node has two null children)?

Subject: Re: Speed Requirement of Min/Max Height
Posted by lusth on Tue, 28 Feb 2017 13:09:58 GMT
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Why would a level order traversal be asymptotically faster?

Subject: Re: Speed Requirement of Min/Max Height
Posted by davidmccoy on Tue, 28 Feb 2017 13:33:28 GMT
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You could end the search for a min at the first level with a leaf, but I guess worst case it's still linear...

Subject: Re: Speed Requirement of Min/Max Height
Posted by lusth on Tue, 28 Feb 2017 13:37:50 GMT
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Actually, not a leaf, but a null child.

Subject: Re: Speed Requirement of Min/Max Height
Posted by SSinischo on Tue, 28 Feb 2017 17:13:18 GMT
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So the function actually has to calculate the min/max depth through recursion? Can we not just keep track using a variable that may update upon insertions/deletions?

Subject: Re: Speed Requirement of Min/Max Height
Posted by lusth on Tue, 28 Feb 2017 18:22:24 GMT
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You're free to do it how you wish, but you should be able to generate the stats in $O(n)$ time.