Subject: Question #28 and #29
Posted by padietl on Mon, 22 Aug 2016 00:46:25 GMT

So on question 28:
Quote:
If \( f = o(g) \), then algorithm \( f \) always runs faster than \( g \), in all cases.

does "in all cases" including when one is NOT using a sufficiently large \( n \)? And if so, is this question any different then question 29?

Subject: Re: Question #28 and #29
Posted by jarobinson3 on Mon, 22 Aug 2016 00:49:43 GMT

From my understanding of #28 is that for all \( f \) and \( g \) and all input sizes is it true. For #29 You consider a fixed \( f \) and \( g \) and how do they related for any input size.

Subject: Re: Question #28 and #29
Posted by ldsapp on Mon, 22 Aug 2016 00:52:54 GMT

There are quite a few questions in comparing algorithms using order notation that use either the phrase "in all cases" or "regardless of input size". However, I consider "in all cases" to include "regardless of input size". Are there any instances where one would be false and the other true?

Subject: Re: Question #28 and #29
Posted by ldsapp on Mon, 22 Aug 2016 00:57:17 GMT

What is the difference between a fixed \( f \) and \( g \) and a variable \( f \) and \( g \) in regard to these questions? When would that specifically change the answer?

Subject: Re: Question #28 and #29
Posted by lusth on Mon, 22 Aug 2016 01:16:12 GMT

With no qualifiers, assume time, worst case input, and input size sufficiently large.
With the qualifier "regardless of input size", assume time and worst case input.
With the qualifier "in all cases", assume time.
With the qualifier "in all cases above a sufficiently large input size", assume time and input size
sufficiently large.

Subject: Re: Question #28 and #29
Posted by padietl on Mon, 22 Aug 2016 19:18:46 GMT
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Wait what am I assuming about time?

Subject: Re: Question #28 and #29
Posted by lusth on Mon, 22 Aug 2016 19:22:05 GMT
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As opposed to space.

Subject: Re: Question #28 and #29
Posted by padietl on Mon, 22 Aug 2016 19:34:43 GMT
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I thought time and space were the same thing.

Subject: Re: Question #28 and #29
Posted by jarobinson3 on Mon, 22 Aug 2016 19:42:14 GMT
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padietl wrote on Mon, 22 August 2016 14:34I thought time and space were the same thing.

Not sure if joke...

Time is how long it takes, space is how much memory it uses.

Subject: Re: Question #28 and #29
Posted by padietl on Mon, 22 Aug 2016 19:44:39 GMT
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Quote:Not sure if joke...

Affirmative.