Live Lecture Chat Window Q&A  
April 7, 2021

11:56:01 From Ricardo Wu to Everyone: I have one: How do we calculate y in project 1 if we've already set y = 0 while looking for time?

11:56:31 From Ben Wichser to Everyone: 0 = at^2 + bt + c
11:56:37 From Ben Wichser to Everyone: We assume c = 0 (initial height of 0)
11:56:45 From Ben Wichser to Everyone: So 0 = at^2 + bt
11:57:03 From Ben Wichser to Everyone: Factor out t: 0 = t(at + b). Two answers: t = 0 and t = -b/a

12:01:30 From Ben Wichser to Everyone: I know it hasn't opened yet, but when Quiz 2 does open, is it closed everything or open Canvas or .. ?

Quizzes open Friday at 12:01 AM PDT. They are open notes.

12:01:32 From Kevin to Everyone: for the parallel fraction part of the project 1 report, which speedups do we use to calculate it? is it just 1 to 2, 1 to 4, 1 to 8?

I would just use 1-to-8

12:07:18 From Morello, Zachary D to Everyone: the beaver game jam is very cool and great

The previous was an unpaid advertisement… see the Stuff part of the Resources page.

12:10:20 From Hawkins, Matthew R to Everyone: I've often wondered why I sometimes don't see my cout statements when I crash with a seg fault - that makes more sense now

Yes, standard error is unbuffered, i.e., every character you print goes out right away. Standard out is buffered – the characters end up in an array in the OS and get flushed every so often. Standard error is preferable for error debugging so that, if the program crashes, you see the printout.

12:18:46 From Beniamin Condrea to Everyone: Is there ever a case where the openMP has greater overhead than benefit?

Yes, you will see this in small dataset sizes. Try NUMTRIALS=1 and see what happens.

12:24:45 From Kao, Wei-Chen to Everyone: So.. the fraction is to determine the relationship between F parallel and F sequential? e.g. if F parallel = 0.3, then F sequential = 0.7 ?

Yes.

12:25:35 From Krantz, Jacob Ray to Everyone: Is the overhead associated with OpenMP a function of the number of processors? If so, it appears to not be accounted for in Amdahl's Law, since F_sequential is not a function of n.

Good question. I don't know.

12:26:43 From Wil Coiner to Everyone: So the maxSpeedup (and speedup) generally can be thought of as n times faster? So maxSpeedup of 2.00 means 2x faster?

Yes.
12:40:21 From Cat Lee Ball to Everyone: RE: end of moore's law:
https://www.technologyreview.com/2020/02/24/905789/were-not-prepared-for-the-end-of-moores-law/

12:51:15 From Child, April Santa Cordova to Bailey, Mike (Direct Message): if a core has a copy of a pointer do they all still store the same address?

It depends if that pointer is declared to be shared( ) or private( ) on the OpenMP #pragma line.

12:57:36 From Burke, Caden Thomas to Everyone: when one hyperthread is blocked, it doesn't start again until the other hyperthread is blocked?

There is still time-slice swaps going on.

13:11:06 From Feth, Christopher Malcolm to Everyone: Can you give us a ball park of the probability we should be getting?

< 50%

13:12:12 From Vickroy Jr, Corey Lee to Everyone: is it like brute force?
13:13:32 From Ben Wichser to Everyone: It's probabilistic. I think brute force would be trying over and over until it works. Here we try “randomly” (within the parameters) and count how often it works.

Yes, try random combinations of the variables and count how often it works.

13:25:51 From Chi Hin, Ng (Michael) to Everyone: what does fabs(x-g-d) <= TOL mean?

x-g is how far the cannonball hits from the face of the cliff. d is how far the castle is from the face of the cliff. So, |x-g-d| is the absolute value of the distance between where the castle is and where the cannonball hits.

13:27:54 From Li, Qiuhong to Everyone: what does #pragma omp parallel for ????? do?

It's like the #pragma you used in Project #0, but the ????? is hinting to you that there is more that needs to go on that line.

13:31:41 From Jordan to Everyone: Can you repeat what the 1 independent var and the 2 dependent vars you mentioned were?

The one dependent variable is performance. The two independent variables are number of threads and number of Monte Carlo trials.

13:36:50 From Huy Trieu to Everyone: do we do 8 threads? or 1/2/4 threads

You must do at least 1, 2, and 4. Doing more will give you more data points to enhance your parallel intuition.

13:38:15 From Ben Wichser to Everyone: I understand the quiz isn’t open yet, but for quizzes, are they closed everything, open Canvas, or ???

Open notes. So are the tests.

13:38:46 From Chi Hin, Ng (Michael) to Everyone: how to prepare for the quiz? ;p

Review the notes.
13:40:04 From Jordan to Everyone: Is NUMTRIES ok to leave = 10?

Yes.

13:47:44 From Adam W. to Everyone: Haven't done a lot of Python scripting, but can't you also add #!/<pythonPath> to the top of the script and chmod 755 it? Making it executable.

Yes. Also works for csh, bash, etc.

13:49:02 From Hershberger, Jacob to Everyone: \( y = 0. = 0. + vy*t + 0.5*GRAVITY*t^2 \)

vy is one variable right?

Yes, \( vy = v*sin(\theta) \)

13:51:43 From Hershberger, Jacob to Everyone: I'm trying to isolate t and its been a while since I've done algebra

If it's linear, i.e., in the form \( At + B = 0 \), then \( t = -B/A \)

If it's quadratic, i.e., in the form \( At^2 + Bt + C = 0 \), then solve for \( t = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \)

13:54:28 From Kevin to Everyone: What exactly do we need to submit on Teach this week? Is it just our program and the report?

Yes, the program source and the PDF report.

13:57:19 From Kevin to Everyone: Ah ok, so we need to submit our script as well?

No, you don't need to show us how you ran the program. We don't need to see any scripts or Makefile.