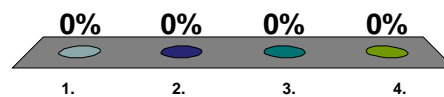


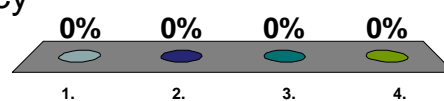
How are the locations of airplanes in flight detected today?

1. GPS
2. radar
3. via black box
4. Two way communication



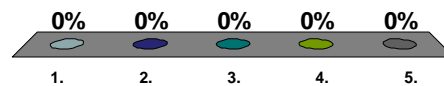
Why was MH370 harder than usual to track?

1. GPS malfunction
2. radar outage
3. transponder not transmitting
4. government conspiracy



What are the barriers to real-time airplane tracking?

1. not enough satellites
2. high signal cost
3. not enough radar stations
4. all of the above
5. 1 and 2



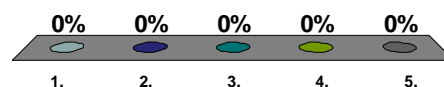
Assume our code takes 16ms to run on a uniprocessor and we get a new computer with 4 processors. If we're able to parallelize 25% of our code, what's the minimum time our code will take to run based on the speedup given by

Amdahl's equation:

$$\text{max speedup} = 1/(S + (1-S)/N),$$

where S = fraction of code that is serial
and N is number of processors

1. 16ms
2. 256/13 ms (= 19.7ms)
3. 13ms
4. 7ms
5. It depends

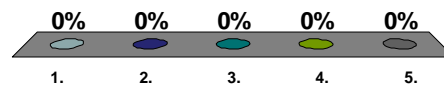


Assume our code takes 32ms to run on a uniprocessor and we get a new computer with 8 processors. If we're able to parallelize 75% of our code, what's the minimum time our code will take to run based on the speedup given by

Amdahl's equation:

max speedup = $1/(S + (1-S)/N)$,
 where S = fraction of code that is serial
 and N is number of processors

1. 11ms
2. 8ms
3. 25ms
4. 32ms
5. 4ms

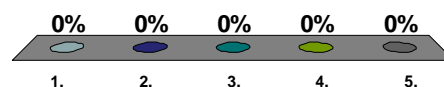


Assume our code takes 32ms to run on a uniprocessor and we get a new computer with 8 processors. If we're able to parallelize all of our code, what's the minimum time our code will take to run based on the speedup given by

Amdahl's equation:

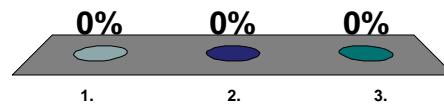
max speedup = $1/(S + (1-S)/N)$,
 where S = fraction of code that is serial
 and N is number of processors

1. 11ms
2. 8ms
3. 25ms
4. 32ms
5. 4ms



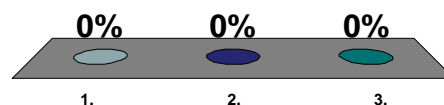
Our new company 3303Inc is going to build a new software system. We have the choice of improving on ACME's existing XYZ product or building a brand new product for a new application area.
Which do you recommend?

1. New product
2. Improve XYZ
3. It depends



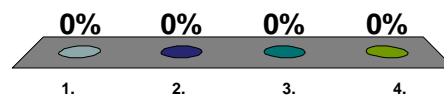
For our new software system we have the choice of using existing programming languages and tools or building our own. Which do you recommend?

1. New language / tools
2. Existing language / tools
3. It depends



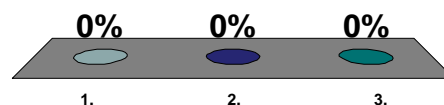
What do we call building our own language and tools?

1. Green
2. Native
3. Proprietary
4. 3rd party



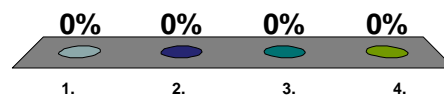
For our new software system we have the choice of quality vs time to market. Which do you recommend that we focus on?

1. Time to market
2. Quality
3. It depends



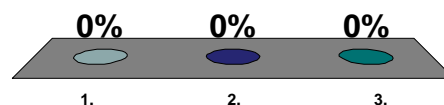
What other tradeoff is closely tied to quality vs TTM?

1. Market leader vs follower
2. Light-weight vs heavy-weight design process
3. 3rd party vs proprietary tools
4. Single site vs multi-site development



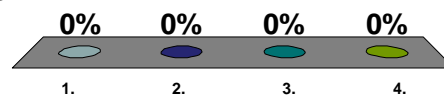
For our new software system we have the choice of single-site vs multi-site development. Which do you recommend?

1. Multi-site
2. Single-site
3. It depends



What is different about Nortel's XA-Core (eXtended-Architecture Core) from all telecommunications systems built before it?

1. the first hard real-time telecommunications system
2. the first multi-core telecommunications system
3. the first digital switching telecommunications system
4. all of the above



Are telecommunications systems soft real-time or hard real-time?

1. soft
2. hard
3. It depends

