Rethinking "Enterprise"

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Questions

"Which Web framework should I use?"

"Why are there so many persistence APIs?"

"Which is better: Python or Ruby (or PowerShell)?"

"How should I use design patterns?"

"How do I build a good architecture?"

Question

All of these are really masks for the One Question That Really Matters:

How do I avoid being replaced by somebody cheaper than me?

Question

Which is itself a mask for the One Thing Everybody in This Room Really Wants:

Tell me the Best Practices, give me the technology Secret Sauce, help me find the Magic Pill, that will let me keep from being outsourced/homesourced/consultantsourced/whatever!

The Answer

So here's your answer:

Nah, on second thought, I just realized we've got some time yet before I'm done.

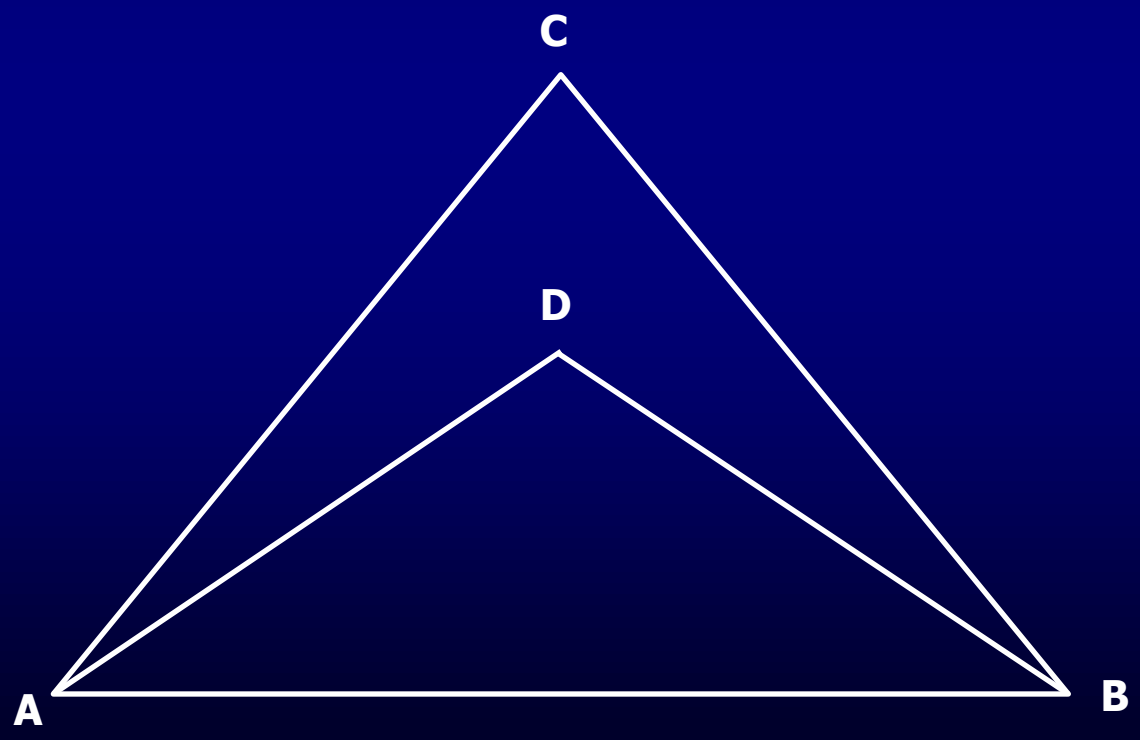
Crap.

I need some filler.

Questions

So here's a question for *you* to chew on, instead:

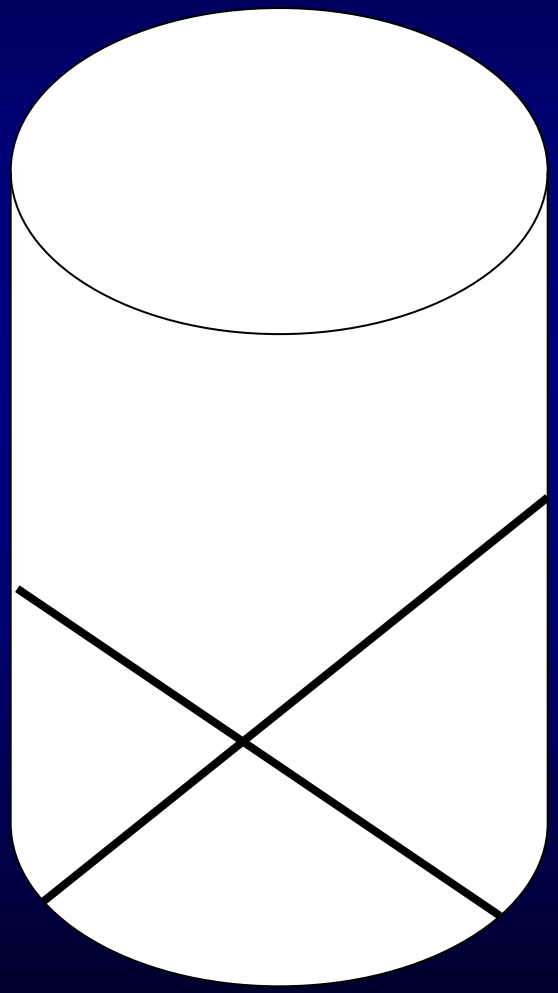
Prove that AD + DB < AC + CB



Questions

Too hard? Try this one:

A well, open at the top, has a diameter of 3 meters. We throw two straight sticks, four and five meters long, into the well. They land as shown to the right. Determine the height at which they cross each other.



Questions

Try one more:

A farmer has a rectangular ranch with a perimeter of 110 meters and an area of 700 square meters. What are the dimensions?

Questions

Or this one:

A mathematician is challenged by a passer-by to guess the ages of his three sons.

"The product of their ages is 36."

"The sum of their ages is the number of books on that table over there."

"The oldest has blue eyes."

Answers

The first three problems came from a junior high or elementary school mathematics textbook.

The fourth requires math no more sophisticated than what you learned by third grade, and a bit of deductive reasoning.

Answers

Can't solve it? Feeling a bit embarrassed?

You are not alone.

Answers

"We have given [the ABCD triangle problem] to many people, including undergraduate and graduate students, and even full professors in mathematics, engineering, or computer science.

"Fewer than 5% of them solved [it] within an hour…

"… many of them required several hours…

"… and we witnessed some failures as well."

Answers

"[I]t [the well problem] *takes less than a minute to solve…*

"If you solve it within an hour (!), you'll belong to the elite one percent of the people we tested who managed to get the right answer within that time.

"What's more, everyone we tested had at least an undergraduate degree either in mathematics, engineering or computer science."

(Source: "How to Solve It")

Answers

W

T

F

?

Answers

"We're taught to decompose problems and treat the smaller simpler problems individually. This is wonderful when it works. But complex real-world problems don't often decompose easily or meaningfully.

"What might even be worse, we are spoon fed the solutions to problems, chapter by chapter, never once being forced to think about whether or not the problems we are facing should be solved with the technique just described in our textbook. Of course they must!

"Why else would this problem be in this chapter?!"

Answers

"This is the case not just with texts for elementary mathematics but also with most textbooks for university courses.

"*The problem and its solution in these books are never far apart."*

Source: "How to Solve It", p 3-4

The Training Class

Your boss sends you to a .NET training class

You hear lectures on various .NET topics

You practice code in labs on those same topics

You go home with a nice certificate

Answers

When you return, he presents you with a new project. "We have to … <blah blah blah>"

What have you learned?

The problem and its solution are never far apart.

Analysis

"Real-world problems are difficult to solve, and they are difficult for several reasons:

- "The number of possible solutions in the search space is so large as to forbid an exhaustive search for the best answer.
- "The problem is so complicated that just to facilitate any answer at all, we have to use such simplified models of the problem that any result is essentially useless.

Analysis

- "The *evaluation function* that describes the quality of any proposed solution is noisy or varies with time, thereby requiring not just a single solution but an entire series.
- "The possible solutions are so heavily constrained that constructing even one feasible answer is difficult, let alone searching for an optimum solution.
- "The person solving the problem is inadequately prepared or imagines some psychological barrier that prevents them from discovering a solution."

Analysis

Given the complexity of finding the solution…

… we look for shortcuts…

… and who better to emulate…

… than the people who taught us?

Because surely they know the right answers, right?

Analysis

Given the complexity of finding the solution…

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Because surely they know the best practices, right?

Teachers

Speaking of teachers…

American History

Test:

What do you remember of Woodrow Wilson?

28th President

Held in high regard by high school American History textbooks, using phrases like "great reformer" and "man of peace"

American History

Woodrow Wilson (1913 - 1921)

- *"regarded himself as the personal representative of the people"*
- *"developed a program of progressive reform"*
- *"asserted international leadership in building a new world order"*
- *"By virtue… of the slogan, 'He kept us out of war', he narrowly won re-election. But after the election he decided America could not remain neutral in the World War."*

Source: www.whitehouse.gov/history/presidents/ww28.html

"The President of Peace"

Woodrow Wilson (1913 - 1921)

- invaded Mexico 10 times during his Presidency
- sent 1,500 Marines to Haiti, killing 3,000 (1915)
- occupied the Dominican Republic (1916)
- dispatched the US Army to Europe to "make the world safe for democracy" (1917)
- occupied Panama (1918)
- dispatched troops to Nicaragua, fixed the election, then forced the president to sign a treaty beneficial to US business (1918)
- put down a Haitian rebellion against US occupation (1919)
- sent 11,000 troops to Russia to support the Czar against the Communist "Red" Revolutionaries (1919 - 1920)
- sent US warships to blockade Russian ports (1919)

"The Great Reformer"

Woodrow Wilson (1913 - 1921)

- "His Republican predecessors routinely appointed blacks to important offices. … Wilson changed all that. He was an outspoken white supremacist."
- "His administration submitted an extensive program intended to curtail the civil rights of blacks, but Congress would not pass it."
- "Wilson used his power as chief executive to segregate the federal government. His administration used the excuse of anticommunism to surveil and undermine black newspapers."
- "The one occasion on which Wilson met with African American leaders in the White House ended in a fiasco as the president virtually threw the visitors out of his office."
- " 'Any man who carries a hyphen about with him,' said Wilson, 'carries a dagger that he is ready to plunge into the vitals of this Republic whenever he gets ready.' "

Source: "Lies My Teacher Told Me", pp 19 - 20

Revisionist History

Wonder why we don't hear about *that* in the history textbooks

(Must be a vast left-wing conspiracy)

American History

Let's try an easier one:

January, 1971. A poll, asking respondents if they are "for" or "against" withdrawing troops from the conflict in Vietnam

How many college-educated voters are "for"?

How many high school-educ. voters are "for"?

How many grade-school-educ. voters are "for"?

American History

Actual poll results:

Grade-school education: 80% for withdrawal

High-school education: 75% for withdrawal

College education: 60% for withdrawal

"Throughout our long involvement in Southeast Asia, the grade school-educated were *always* the most dovish, the college-educated the most hawkish." *(Lies, p. 348)*

American (Not so) History

"In August 2004, … two-thirds of all Americans who graduated from college favored keeping troops in Iraq 'long enough to bring stability'…

"… while 61 percent with less than a high school degree favored 'a quick pullout'."

Source: *Lies*, p. 351

Relevance

Um… fascinating

This has *what* to do with enterprise apps, again?

Java History

Java 2 Enterprise Edition

Test: What do you remember of it?

EJB

EJB

EJB

Java History

Remember these phrases?

"The fast-moving and demanding world of e-commerce and information technology has put a new kind of pressure on application developers. Enterprise applications have to be designed, built, and produced for less money, faster, and with fewer resources than ever before.

"To reduce costs and fast-track enterprise application design and development, the J2EE platform provides a component-based approach to the design, development, assembly, and deployment of enterprise applications. The J2EE platform gives you a multitiered distributed application model, the ability to reuse components, a unified security model, and flexible transaction control. Not only can you deliver innovative customer solutions to market faster than ever, but your platform-independent J2EE component-based solutions are not tied to the products and APIs of any one vendor. "

Java History

Remember these phrases?

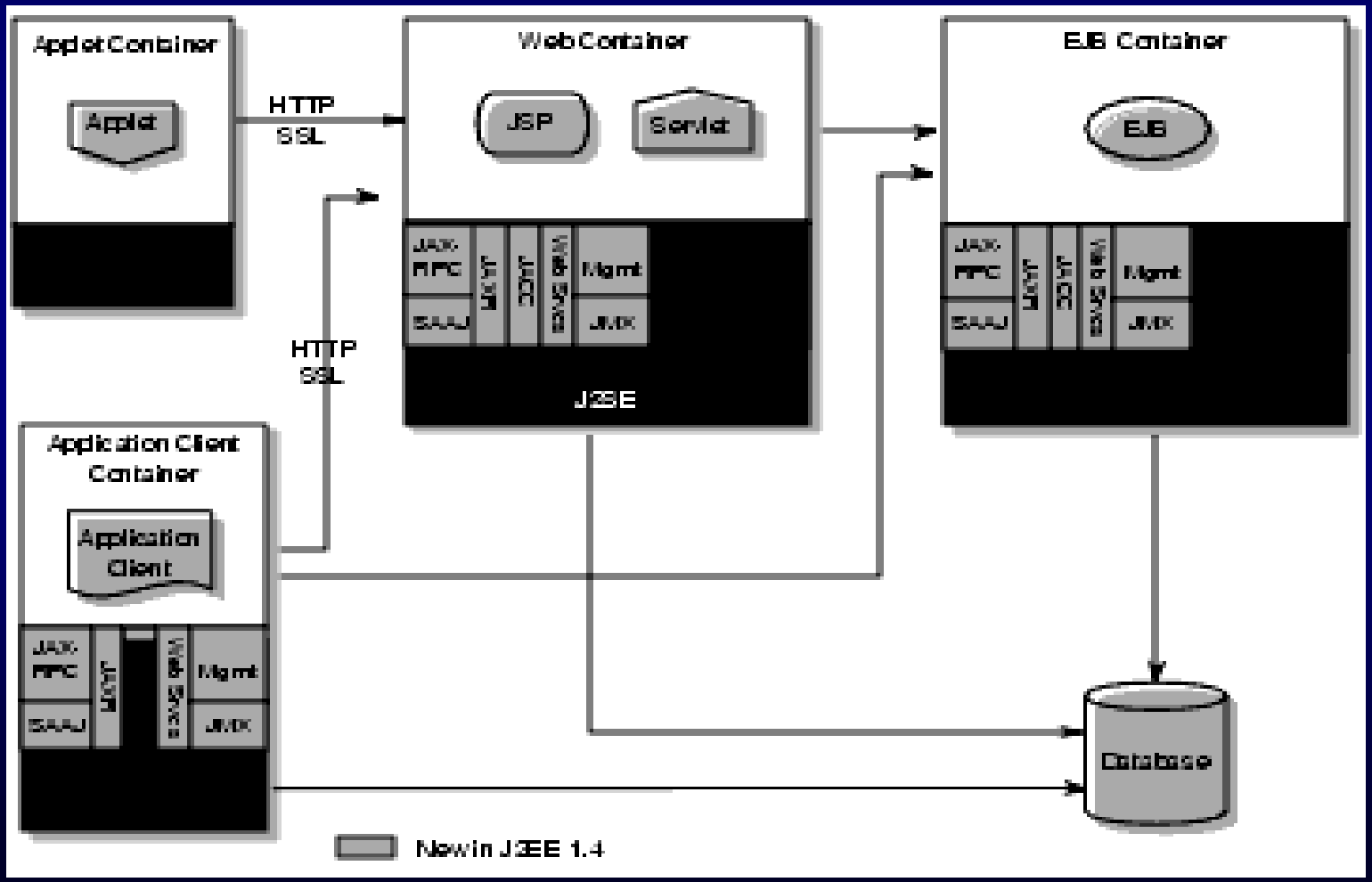
"... the J2EE platform offers several benefits:

- **"Simplified architecture and development**
  The J2EE platform supports a simplified, component-based development model. Because it's based on the Java programming language and the Java 2 Platform, Standard Edition (J2SE platform), this model offers Write Once, Run Anywhere portability, supported by any server product that conforms to the J2EE standard.
- **"Scalability to meet demand variations"**
  J2EE containers provide a mechanism that supports simplified scaling of distributed applications, without requiring any effort on the part of the application development team.
- **"Integration with existing information systems"**
- **"Choices of servers, tools, components"**
- **"Flexible security model"**

Source: "Designing Enterprise Applications" (1st Ed)

Java History

How about this picture?



Java History

Of course you do; it's why we reject transaction systems in favor of other technologies like Spring/Spring.NET

… because clearly Sun/Microsoft couldn't code their way to "Hello, world" with this stuff

Obviously J2EE and COM+ failed its intent

Right?

Lies, Damned Lies, …

So what happened?

Why did so many of the Java architects, designers, and developers bite so hard on the J2EE "hype wave"?

The Impact of Teaching

Would you be surprised to find out that teachers are far more effective than you might think?

The Brain

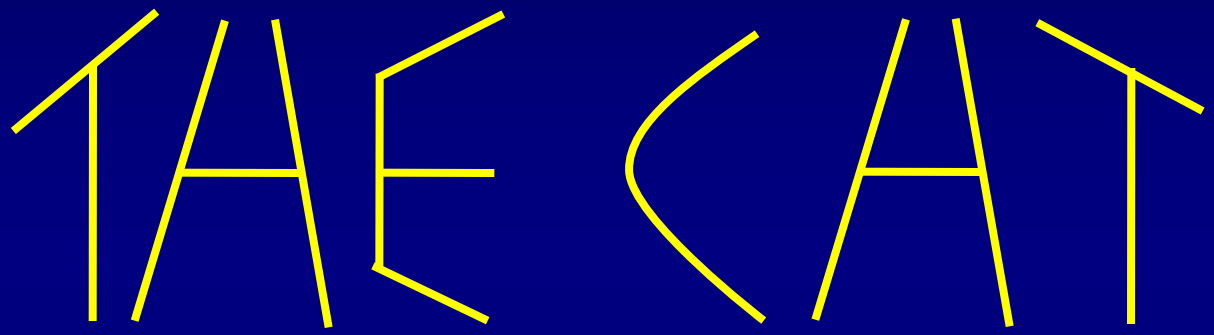
Th hmn brn s n mzng prcssng dvc; t cn mk lgcl lps t ndrstnd wht lks lk gbbrsh

The human brain is an amazing processing device; it can make logical leaps to understand what looks like gibberish

(Which explains how Bush got elected…)

The Brain

Can you read this?



The Brain

The brain operates by *activations*—things closely-related to the topic at hand are fired so as to minimize processing time

This happens *all the time*

Even when you're designing/architecting

The Brain

This means that when somebody says "enterprise", your brain automatically kicks into gear, looking for things associated with the term "enterprise"

… like "big honkin' relational database"

… and "Web browser"

… and a client/server-style topology

… and application servers and POJOs

… and all the other trimmings that are running through your own head right now

The Brain

Face it, you're prejudiced

In fact, you're more than prejudiced, you're a

technacist

technacist *(adj): 1. one whose judgments of technology are based on criteria not inherent in the technology's abilities or liabilities. 2. one whose love of POJOs is exceeded only by their dislike of J2EE… or C++… or COBOL…*

Rethinking Enterprise

So how do we "rethink enterprise"?

Rethinking Enterprise

Resist the Temptation of the Familiar

Every project is different—different customers, different rules, different features, different needs, different users, different views, …, *even for porting projects!*

Reject the "Goal of Reuse"
(until you have written the same system thrice)

Rethinking Enterprise

Befriend the Uncomfortable Truth

Be cynical

Question the assumptions

Look for the hidden costs

Investigate the implementations

Accentuate the negative as well as the positive

Rethinking Enterprise

Eschew the "best practice"

"In programming languages, as Erann Gat has pointed out, what 'industry best practice' actually gets you is not the best, but merely the average. When a decision causes you to develop software at a fraction of the rate of more aggressive competitors, 'best practice' is a misnomer."

(Source: http://www.paulgraham.com/icad.html)

"Best practices" are our attempts to *avoid thinking*

Rethinking Enterprise

Embrace the
"perennial gale
of creative destruction"

"A market economy will incessantly revitalize itself from within by scrapping old and failing businesses [ideas] and then reallocating resources to newer, more productive ones."
(Source: *The Age of Turbulence*, p. 48)

The same holds for languages, patterns, tools, practices …

Rethinking Enterprise

Create an evaluation function of your own for each technology/pattern/practice introduced into your awareness

Context matters

What works well for somebody on a mailing list doesn't necessarily translate well elsewhere

Identify the forces surrounding the technology: What problems does it solve? Why? How?

Talk is cheap; research speaks volumes

Look for the negative consequences

Rethinking Enterprise

Attend to the goals

Define the goals

Features are goals, but goals are not just features

Customers include more than just users;
sometimes, those customers are you

Revisit them periodically to measure success

The Answer

So here's your answer:

What, are you *nuts?*

"There is no spoon."

(And there's no one answer, either.)

Rethinking Enterprise

Now go rethink enterprise for yourself.

References

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