

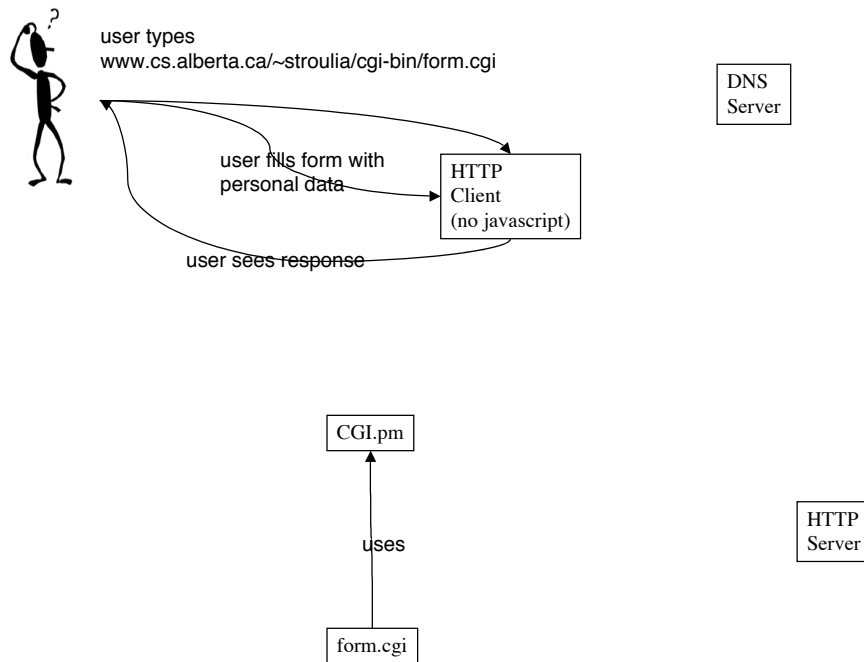
1

Consider the interaction implied in the diagram below:

Complete the diagram to explain the activities involved in this interaction. Explain

- (a) the behavior of each component involved, and
- (b) the flow of control and data among the various components.

You may add components to reflect your own assumptions about the infrastructure, if you have to.



2

What are some programming technologies (and techniques) designed to support the development of consistent (in terms of look-and-feel) user interface for web-based applications. Describe how they work.

3

Compare the web sites of “Salon” and “Slate” magazines; identify four distinct differences between them and explain – in one sentence – which site has the advantage and why. The basis of your comparison will be the three screenshots provided for each site: (a) corresponds to the top of the homepage, (b) to the bottom of the homepage and (c) to the top of an article.

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Tuesday, Oct 18, 2005

Free American broadband!

In France, you can get super-fast DSL, unlimited phone service and 100 TV channels for a mere \$38 a month. Why does the same thing cost so much more in the U.S.?

By S. Derek Turner

Illustration by Val B. Mina

FROM THE WIRES

Threat Prompts Closure of Baltimore Tunnel

Nation's Murder Rate Hits 40-Year Low

Agricultural Subsidies Still Unsettled

War Room Miers in 1989: Outlaw abortion everywhere. Plus: Dick Cheney, Valerie Plame and the New York Times

By Tim Grieve

All-spin zone Steven Colbert celebrates the era of ignorance, taking his bloviating journalist to a new high with his "Daily Show" spinoff

By Heather Havrilesky

King Kaufman's Sports Daily The Shot Heard Over the Crawford Boxes: Titanic Pujols blast beats Astros, keeps Cardinals alive

it works

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When Is a Kurd a Sunni?
Why you don't understand Iraqi tribal politics.
BY CHRISTOPHER HITCHENS

Plus: Hanna Rosin Reports From the New Scopes Monkey Trial

Harriet Miers' Extreme Makeover

Should Every Widow Read Joan Didion's New Book?

A Great College Quarterback Who Won't Make It in the NFL

Explainer: What Does Libby's "Aspen" Line Mean, Anyway?

Today's Papers

Broken Cheney?

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The NYT Miller Revelations

Inside Slate Tuesday, Oct. 18, 2005

Wednesday | Thursday | Friday | Saturday/Sunday | Monday | Tuesday

The Disappointment Gene: Why genetics is so far a boondoggle.
Arthur Allen
medical examiner, Oct. 18, 2005, 10:05 AM PT

Another Helping of Yellowcake: The Weekly Standard accuses Joseph Wilson of lying about the trip that launched the Plame scandal.
Bidisha Banerjee, Tonia Bosch, Zuzanna Kobrzenski, and Blake Wilson
in other magazines, Oct. 18, 2005, 9:50 AM PT

So, Farewell Then, Joschka Fischer: The German America needs most leaves politics.
Michael Scott Moore
foreigners, Oct. 18, 2005, 9:44 AM PT

Fresh Tracks: Jazz in the studio vs. jazz recorded

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[Arts & Entertainment](#)

 **Disaster tourism** I sold my house in the French Quarter three weeks before Katrina hit. I just went back to New Orleans to see what I missed
By Mark Childress
[Life](#)

Ask the pilot Exploding tires and bad math; the pilot exposes his darkest secrets
By Patrick Smith
[Tech & Business](#)

Since you asked ... We're haunted by an abortion from 10 years ago
By Cary Tennis
[Life](#)

THURSDAY, OCT 13, 2005

 **As Karl goes ...** If Rove goes down, will the White House completely fall apart?
By Michael Scherer
[News](#)

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Slate Magazine What Will They Do Witho...

explainer, Oct. 13, 2005, 3:15 PM PT

Bush Abandonment Watch: Wherein we note defections by once-loyal allies.
Timothy Noah
[chatterbox](#), Oct. 13, 2005, 2:53 PM PT

Terror in the Caucasus: The latest chatter in cyberspace.
Bidisha Banerjee
[today's blogs](#), Oct. 13, 2005, 2:38 PM PT

Sons and Muggers: In *Elizabethtown*, Cameron Crowe mourns a lost father; in *Dominio*, Tony Scott is like a predatory uncle.
David Edelstein
[movies](#), Oct. 13, 2005, 2:03 PM PT

Wednesday, Oct. 12, 2005

Laura and Harriet: Are the nominee's critics sexist? Get serious.
John Dickerson
[politics](#), Oct. 12, 2005, 4:08 PM PT


What's 3 Feet Tall With a Small Brain and No Chin?: How the tiny island people got that way.
Daniel Engber
[explainer](#), Oct. 12, 2005, 3:57 PM PT

A Sunni Solution?: The latest chatter in cyberspace.
David Wallace-Wells
[today's blogs](#), Oct. 12, 2005, 2:53 PM PT

Whistle Blowhards: The Supreme Court probes whether whistle-blowers are heroes or nuisances.
Dahlia Lithwick
[supreme court dispatches](#), Oct. 12, 2005, 12:24 PM PT

Drop the Crack Pipe, Grandpa: And other news from science and technology.
William Saletan
[human nature](#), Oct. 13, 2005, 5:18 AM PT


No Place Like Home: A summary of what's in the major U.S. newspapers.
Michael Brus
[today's papers](#), Oct. 13, 2005, 4:17 AM PT

 **Condi, Hillary, and ... Angelina?**
When stars act like politicians.

Get Thee to a Church: Fraysters crack back on *Slate*'s resident nontheist.
Kevin Arnovitz
[fraywatch](#), Oct. 12, 2005, 12:09 PM PT

Silent Masterpieces: Before Rembrandt, there was Hans Memling.
Wyatt Mason
[art](#), Oct. 12, 2005, 8:33 AM PT

Sunni Side Up: A summary of what's in the major U.S. newspapers.
Eric Umansky
[today's papers](#), Oct. 12, 2005, 1:23 AM PT

 **Silent Masterpieces**
Before Rembrandt, there was Hans Memling.

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An article page (top)

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Did terrorists attack Washington with a deadly pathogen?
By Mark Benjamin

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Appreciating USC-Notre Dame the old-fashioned way. Plus: White Sox win pennant. How's the weather in Hades?

Judy Miller and the damage done
The long-awaited New York Times report uncovered an internal mess that's "bigger than Jayson Blair." And it looks even worse for Scooter Libby.
By Farhad Manjoo

King Kaufman's Sports Daily NFL
Week 6: Vikings hope to draw inspiration from team orgy. Plus: Fox hates baseball, exhibit 3,442.

As Karl goes ...

If Rove goes down, will the White House completely fall apart?

By Michael Scherer

By all rights, the day Time magazine's Matt Cooper agreed to give up his White House "double super secret" source should have been stressful for Karl Rove. The president's top political advisor had, after all, told the country that he had nothing to do with the leak of a covert CIA agent's name. Now he was on the verge of being revealed as a key player in the wide-ranging Valerie Plame investigation, an inquiry that threatened to bring indictments into the inner sanctum of the Bush presidency.

Yet, in the hours before Cooper made his court appearance, the most powerful political strategist of a generation had something else on his mind altogether -- Wendell Willkie, the failed Republican presidential candidate in 1940, who, like Rove, had a reputation for political trickery. At midday on July 6, while reporters swarmed blocks away at the U.S. District Court, Rove put in a call to Charles Peters, the veteran political journalist, who had just written a book on the 1940 Republican convention that made Willkie the GOP nominee. "This is

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AP Photo/Susan Walsh

What Will They Do Without Karl? - If Bush's Brain is removed, it's gonna hurt. By John Dickerson

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TODAY'S CARTOONS

politics Who's winning, who's losing, and why.

What Will They Do Without Karl?
If Bush's Brain is removed, it's gonna hurt.
By John Dickerson
Posted Friday, Oct. 14, 2005, at 3:11 PM PT

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Irreplaceable?


about the case but do not challenge the logical notion that Chief of Staff Andy Card is already thinking through how to fill Rove's shoes. Card can shuffle around his duties into different organizational boxes, but it won't do much good. Rove can't be replaced. His departure would create a "black hole," says one official who works with Rove closely. "He's irreplaceable." Here are the five ways a Rove departure would hurt the Bush White House most:


1. Repairing the Right. George Bush must heal his breach with conservatives over his nomination of Harriet Miers. If anyone knows the road back to reconciliation, it's Rove, who is Bush's primary ambassador to them. Rove wasn't able to hypnotize the president's base into supporting the president's pick, but even how opaque Miers is, that was a near-impossibility. However

What's going to happen to Karl? That question was being asked in the White House and throughout Washington today as the president's top political adviser appeared for a fourth time before the grand jury in the CIA leak probe. That he answered questions for four and a half hours only increased speculation that Rove might be the target of an indictment when Special Counsel Patrick Fitzgerald wraps up his work later this month. If he is indicted, it is almost certain that the man, sometimes called Bush's Brain will have to resign. White House officials will not talk about the case but do not challenge the logical notion that Chief of Staff Andy Card is already thinking through how to fill Rove's shoes. Card can shuffle around his duties into different organizational boxes, but it won't do much good. Rove can't be replaced. His departure would create a "black hole," says one official who works with Rove closely. "He's irreplaceable." Here are the five ways a Rove departure would hurt the Bush White House most:

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4

Discuss some security concerns with web-based CGI-based applications. Illustrate each problem with an undesirable behavior that may occur when the application suffers from it and outline how the problem might be addressed.

5

Explain the statement: “Hidden variables are an inefficient method for state maintenance”

6

Bob and Alice exchange message using PKE infrastructure. Bob receives a message purported to have been sent by Alice.

- a) How does Bob know that it was, indeed, Alice who sent it?
- b) How does Alice know that it was read only by Bob?
- c) How does Bob know that the message has not been tampered with?

7

Explain the roles of the following languages: HTML, XML, CSS, JavaScript, XML, Perl in the development of web-based applications

8

Give an example where semantic interoperability can be violated even when a client and a server share an XML schema specifying the data they exchange.

9

Give examples of web-based applications that fit the following architectural styles: hyperdocument repository, client-server, REST? Explain your answer.

10

What are the differences between XML and HTML?

11

What are the advantages and disadvantages of exchanging XML documents between the web-based application and the user's browser?

12

What is the state-maintenance problem? What are some ways to maintain state?

13

What are the roles of middleware (at design time and at run time) in RPC?

14

What is the structure of a URL?

15

Why is it a bad idea to store interpreters with the executable scripts?

16

Discuss some potential uses of client-side scripts? Give examples

17

Explain the statement: “Hidden variables are an insecure method for state maintenance” Give an example

18

Explain the relative pros and cons of binary vs. textual formats for sharing data; give examples.

19

What do we mean by data centric vs. document centric XML documents?

20

What are the advantages of http being stateless?

21

Give an example why the client and the server should be independent (as advocated by the client-server principle of the REST style); discuss a situation where their interdependencies cause problems.