



College of Information Studies

University of Maryland Hornbake Library Building College Park, MD 20742-4345

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# Content Management Systems

Week 13

LBSC 671

Creating Information Infrastructures

# Why Content Management Systems?

- Separation of content and appearance
- Separation of roles
- Standardization of common “design patterns”
  - Login and password recovery
  - Headlines and drill-down
  - Site map
  - Search
  - Shopping cart

# Content Management Systems

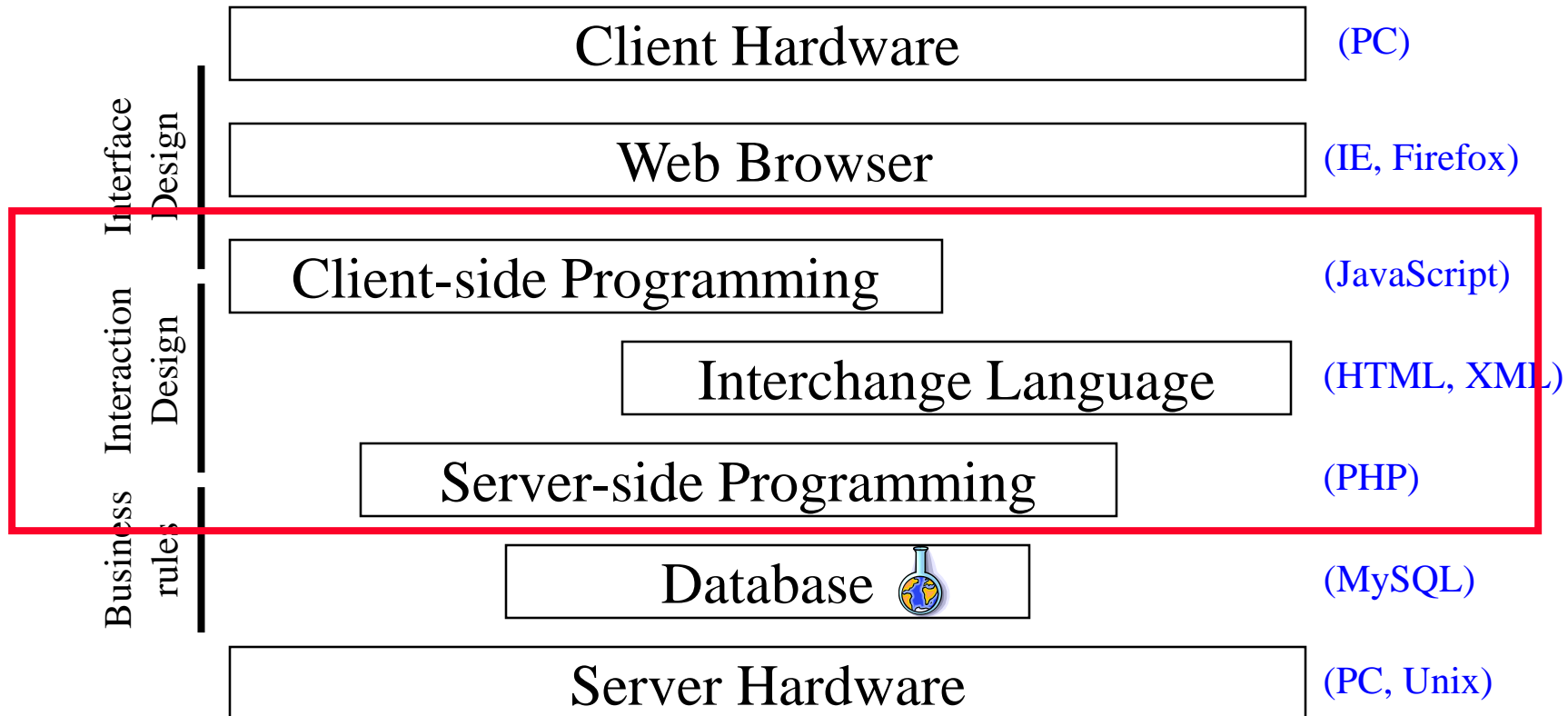
- WordPress
  - <http://wordpress.org>
- Joomla
  - <http://www.joomla.org>
- Drupal
  - <https://drupal.org>

# Roles

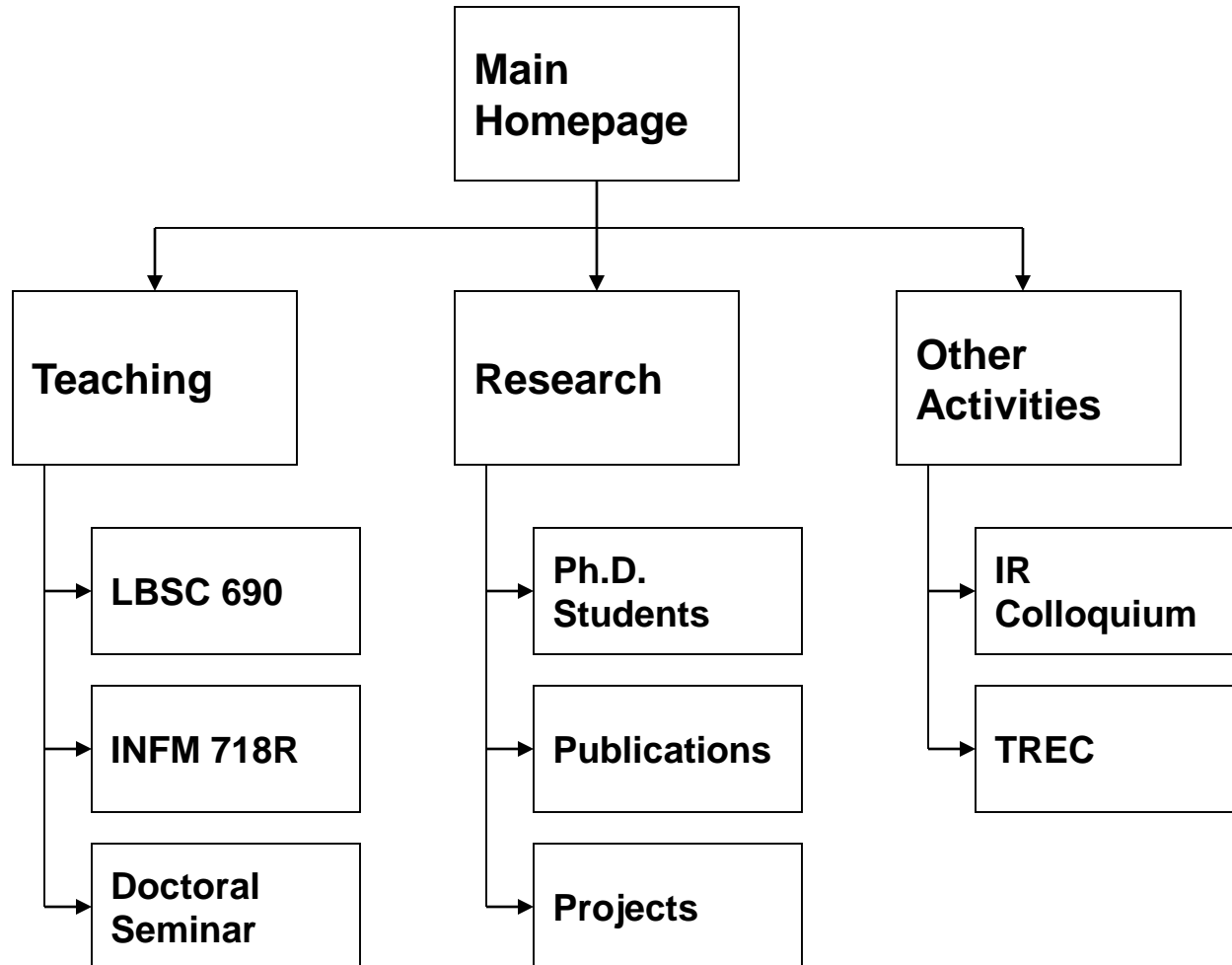
- Information architecture design
- Task assignment
- Content generation and modification
- Approval for “publication”
- Publication
- Error correction
- Tracking task progress

# Content Management System Structure

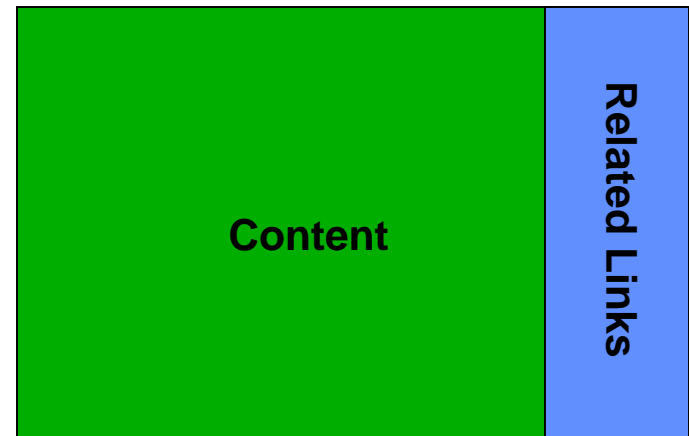
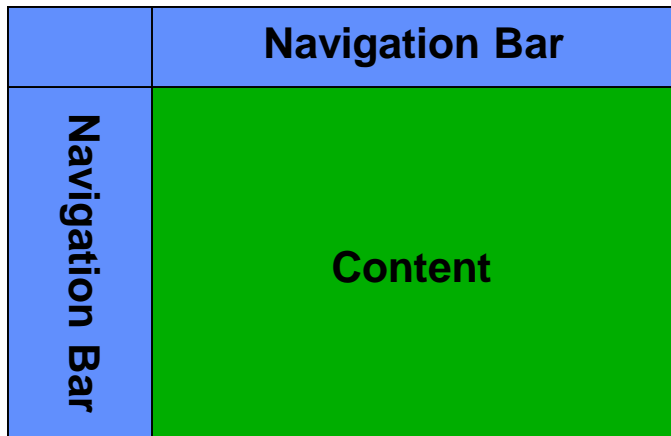
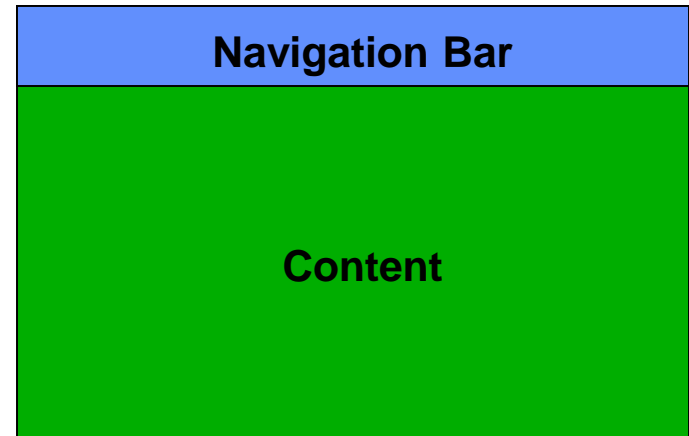
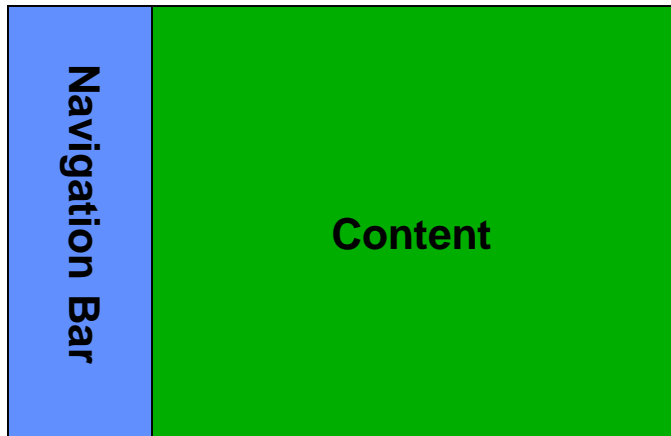
- Database stores the content
  - And access control data and parameters
- Server scripting controls the user experience
  - PHP reads database, generates HTML
- (X)HTML conveys the user experience
- User-side scripting enhances interactivity
  - JavaScript may be used for form validation



# “Site Blueprint”



# Grid Layouts





# Grid Layout: NY Times

Ayn Rand's Literature of Capitalism - New York Times - Mozilla Firefox

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The New York Times  
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MEDIA & ADVERTISING WORLD BUSINESS SMALL BUSINESS YOUR MONEY DEALBOOK MARKETS RESEARCH MUTUAL FUNDS MY PORTFOLIO ALERTS

SWAP YOUR RIDE HEAR WHAT PEOPLE LIKE YOU HAD TO SAY AFTER DRIVING A FORD FOR ONE WEEK. Ford CHALLENGE

FORD FOCUS FORD FUSION FORD MUSTANG FORD TAURUS FORD EDGE FORD ESCAPE FORD ESCAPE HYBRID FORD EXPLORER FORD EXPEDITION FORD F-150 FORD SUPER DUTY

Ayn Rand's Literature of Capitalism

By HARRIET RUBIN  
Published: September 16, 2007

One of the most influential business books ever written is a 1,200-page novel published 50 years ago, on Oct. 12, 1957. It is still drawing readers; it ranks 388th on [Amazon.com's](#) best-seller list. ("Winning," by [John F. Welch Jr.](#), at a breezy 384 pages, is No. 1,431.)

The book is "Atlas Shrugged," Ayn Rand's glorification of the right of individuals to live entirely for their own interest.

For years, Rand's message was attacked by intellectuals whom her circle labeled "do-gooders," who argued that individuals should also work in the service of others. Her book was dismissed as an homage to greed. [Gore Vidal](#) described its philosophy as "nearly perfect in its immorality."

But the book attracted a coterie of fans, some of them top corporate executives, who dared not speak of its impact except in private. When they read the book, often as college students, they now say, it gave form and substance to their inchoate thoughts, showing there is no conflict between private ambition and public benefit.

"I know from talking to a lot of Fortune 500 C.E.O.'s that 'Atlas Shrugged' has had a significant effect on their business decisions, even if they don't agree with all of Ayn Rand's ideas," said John A. Allison, the chief executive of BB&T, one of the largest banks in the United States.

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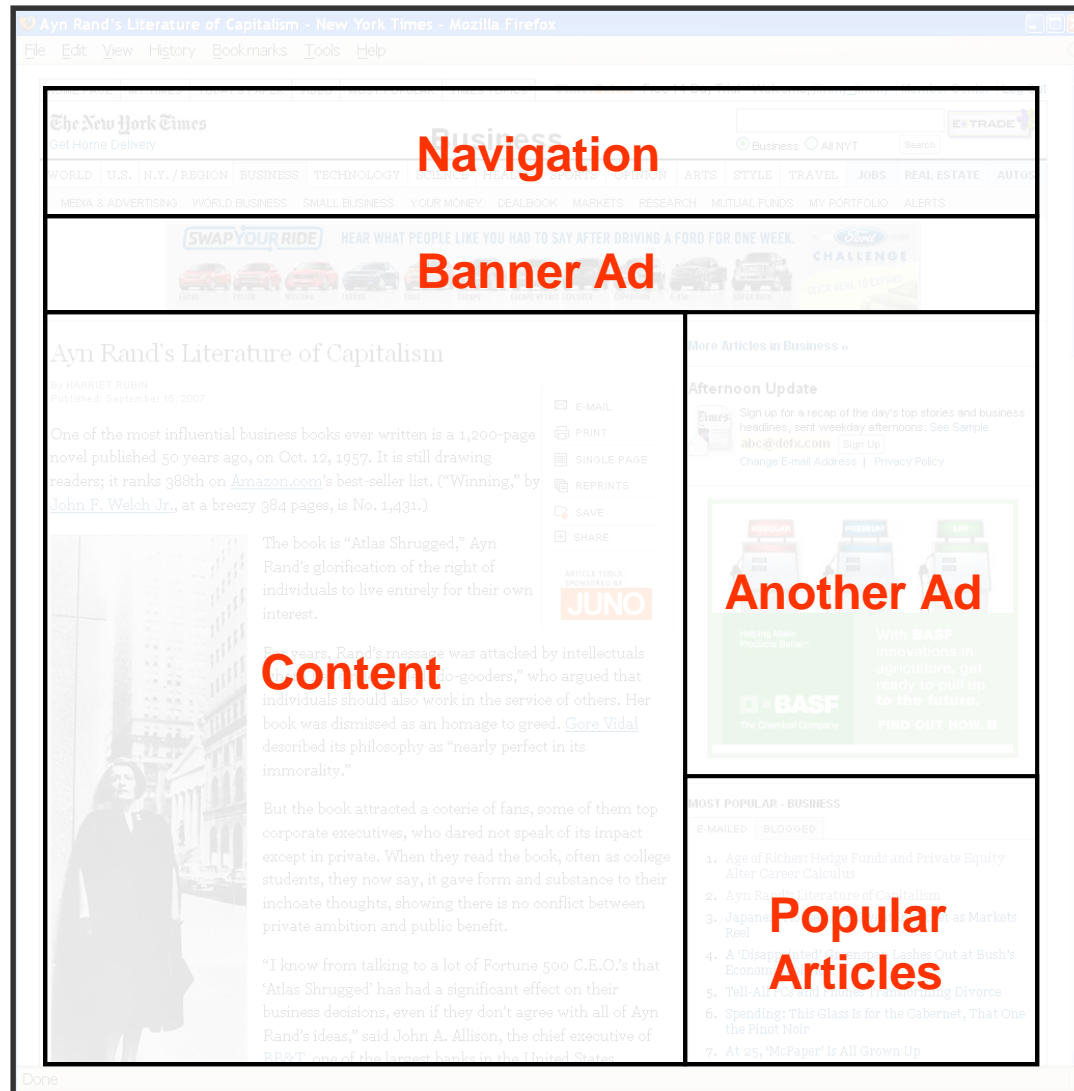
MOST POPULAR - BUSINESS

E-MAILED BLOGGED

1. Age of Riches: Hedge Funds and Private Equity Alter Career Calculus
2. Ayn Rand's Literature of Capitalism
3. Japanese Housewives Sweat in Secret as Markets Reel
4. A 'Disappointed' Greenspan Lashes Out at Bush's Economic Policies
5. Tell-All PCs and Phones Transforming Divorce
6. Spending: This Glass Is for the Cabernet, That One the Pinot Noir
7. At 25, 'McPaper' Is All Grown Up

Done

# Grid Layout: NY Times



# Grid Layout: ebay

autograph Tom Brady, Autographs-Original, Autographs-Reprints items on eBay.com - Mozilla Firefox

File Edit View History Bookmarks Tools Help

**eBay** *Shop VICTORIOUS* Welcome! [Sign in](#) or [register](#)

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Categories Motors Express Stores [Sneak Peek of what's changing on eBay!](#)

**SWAP YOUR RIDE** HEAR WHAT PEOPLE LIKE YOU HAD TO SAY AFTER DRIVING A FORD FOR ONE WEEK. **Ford CHALLENGE** [CLICK HERE](#)

Home > Buy > Search Results for 'autograph Tom Brady'

[All Items](#) [Auctions](#) [Buy It Now](#) eBay is creating a new search experience. [Try it in our playground.](#)

[Advanced Search](#)

☐ Search title and description

Related Searches: [tom brady auto](#), [tom brady](#), [reggie bush auto](#), [tom brady sp](#), [tom brady contenders](#)

**Narrow Your Results**

Sports Mem, Cards & Fan Shop (31)

- Autographs-Original (13)
- Autographs-Reprints (11)
- Cards (5)
- [more ...](#)

**Related Guides**

- Sports Collectibles
- Graded Sports Cards
- Sports Autographs
- Fan Apparel & Souvenirs
- Sports Cards
- [See all related guides ...](#)

**Search Options**

Location

**31 items found for: autograph Tom Brady** ([Save this search](#))

List View | Picture Gallery Sort by: Time: ending soonest [Customize Display](#)

	<input type="button" value="Compare"/>	Item Title	Bids	Price*	Shipping to USA	Time Left
<input type="checkbox"/>		<b>2007 TOPPS TX TOM BRADY AUTOGRAPH &amp; GAME JERSEY 02/15</b> Brady's regular card #3 in the set is included	14	\$125.00	Not specified	1h 56m
<input type="checkbox"/>		<b>TOM BRADY 8X10 PHOTO AUTOGRAPH AUTO COA</b> GAI CERTIFIED BY THE BEST IN THE BUSINESS !!!	11	\$50.76	\$2.50	3h 27m
<input type="checkbox"/>		<b>Tom Brady New England Patriots Signed Autograph Visor</b>	1	\$9.99	<a href="#">Calculate</a>	4h 34m
<input type="checkbox"/>		<b>TOM BRADY AUTOGRAPH SIGNED 8 X 10 MVP PHOTO COA PATRIOT</b>	-	\$9.99	\$6.50	1d 03h 36m

# Grid Layout: ebay

autograph Tom Brady, Autographs-Original, Autographs-Reprints Items on eBay.com - Mozilla Firefox

File Edit View History Bookmarks Tools Help

**Navigation**

Welcome! Sign in or register

Categories Motors Express Stores

SWAP YOUR RIDE HEAR WHAT PEOPLE LIKE YOU HAD TO SAY AFTER DRIVING A FORD FOR ONE WEEK

**Banner Ad**

Home > Buy > Search Results for 'autograph Tom Brady'

**Navigation**

All Items Auctions Buy It Now

autograph Tom Brady All Categories

Search title and description

Related Searches: tom brady auto, tom brady, reggie bush auto, tom brady sp, tom brady contenders

**Related**

Narrow Your Results

Sports Mem, Cards & Fan Shop (31)

Autographs-Original (13)

Autographs-Reprints (11)

Cards (5)

more ...

Search Options

Location

31 items found for: autograph Tom Brady (Save this search)

List View Picture Gallery

Sort by: Time: ending soonest Customize Display

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# Grid Layout: Amazon

Amazon.com: tiger - Mozilla Firefox

File Edit View History Bookmarks Tools Help

amazon.com Jimmy's Amazon.com See all 41 Product Categories Your Account Cart Your Lists Help

Gift Certificates International Hot New Releases Bestsellers Today's Deals Sell Your Stuff

Search Amazon.com tiger GO Gift Certificates Web Search GO

**Category**

**Any Category**



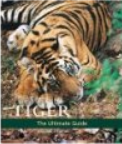

- Books (124,039)
- Sports & Outdoors (31,206)
- Home & Garden (15,975)
- Toys & Games (10,716)
- Apparel (7,925)
- Everything Else (7,221)
- Jewelry & Watches (3,608)
- Automotive (1,126)
- Music (917)
- Home Improvement (769)
- Office Products (725)
- Health & Personal Care (714)
- DVD (453)
- Electronics (396)
- VHS (355)
- Baby (294)
- Video Games (163)
- Software (114)
- Gourmet Food (106)
- Musical Instruments (63)
- Unbox Video Downloads (47)
- Beauty (39)
- Wireless Accessories (37)
- Industrial & Scientific (15)
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**"tiger"**

Did you mean [tigger](#)?


Related Searches: [leopard](#), [tiger woods](#).

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-  **Apple Mac OS X Tiger 10.4.6 (Mac DVD)** by Apple Computer (DVD-ROM - May 1, 2006) (Mac OS X)  
[Buy new:](#) ~~\$129.00~~ **\$119.99** [26 Used & new](#) from **\$74.99**  
In Stock  
★★★★☆  
**Software:** [See all 114 items](#)
-  **Tiger (5 Ancestors)** by Jeff Stone (Paperback - Mar 14, 2006)  
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Get it by **Wednesday, Sep 19** if you order in the next **23 hours** and choose one-day shipping.  
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★★★★☆  
**Books:** [See all 124,039 items](#)
-  **Tiger: The Ultimate Guide** by Valmik Thapar (Hardcover - Jun 2004)  
[Buy new:](#) ~~\$39.95~~ **\$26.37** [25 Used & new](#) from **\$7.00**  
In Stock  
Eligible for **FREE** Super Saver Shipping.  
★★★★☆  
**Books:** [See all 124,039 items](#)
-  **Tiger Woods PGA Tour 08** by Electronic Arts (Aug 28, 2007) (Xbox 360)  
[Buy new:](#) **\$59.99** [37 Used & new](#) from **\$40.00**  
Get it by **Tuesday, Sep 18** if you order in the next **8 minutes** and choose one-day shipping.  
Eligible for **FREE** Super Saver Shipping.  
★★★★☆  
ESRB Rating: Everyone  
**Video Games:** [See all 163 items](#)

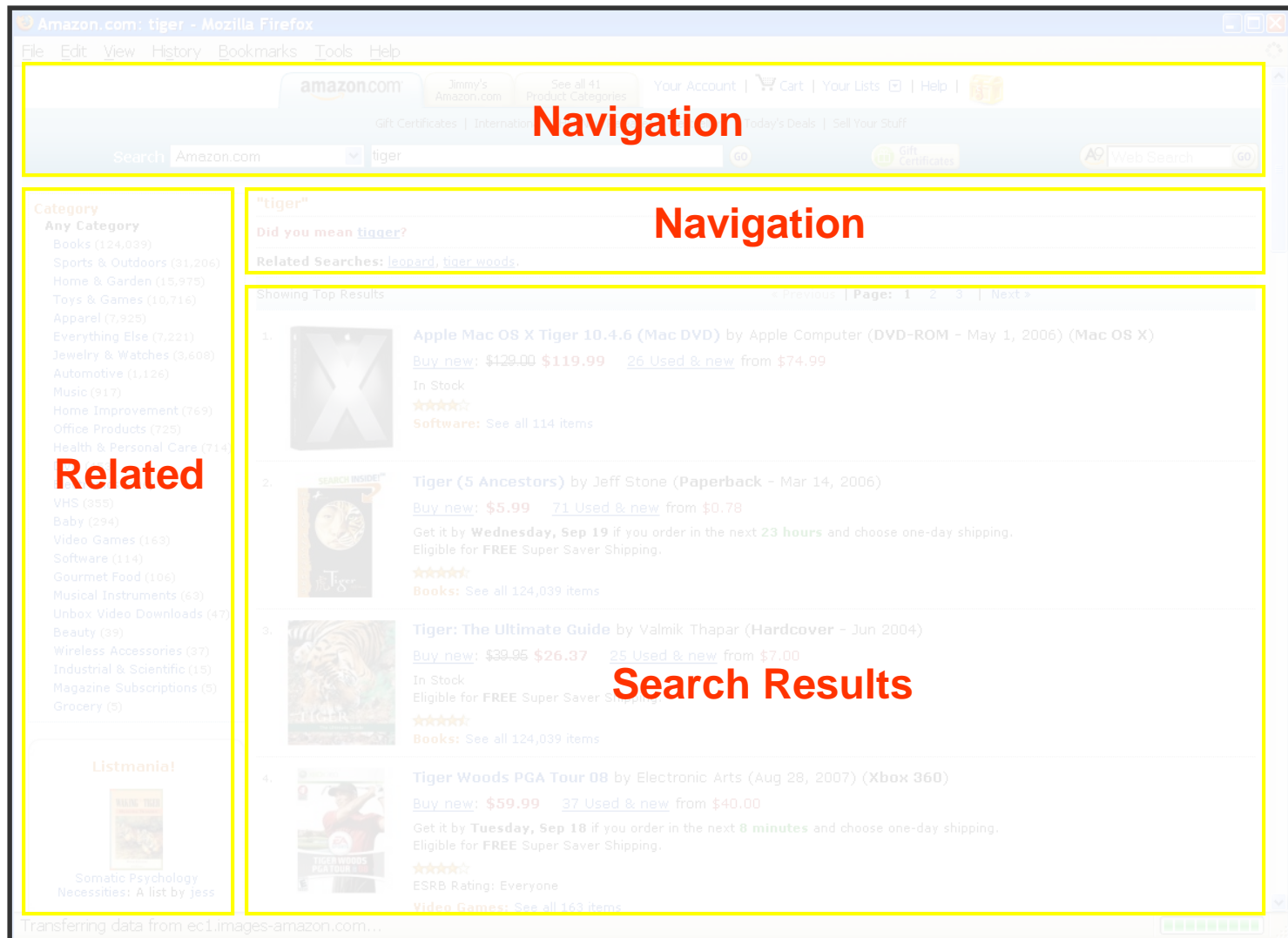
Transferring data from ec1.images-amazon.com...

**Listmania!**



Somatic Psychology  
Necessities: A list by jess

# Grid Layout: Amazon



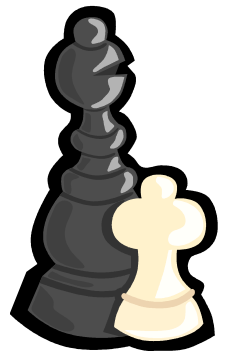
# Some Layout Guidelines

- Contrast: make different things different
  - to bring out dominant elements
  - to create dynamism
- Repetition: reuse design throughout the interface
  - to achieve consistency
- Alignment: visually connect elements
  - to create flow
- Proximity: make effective use of spacing
  - to group related and separate unrelated elements

# Interaction Design

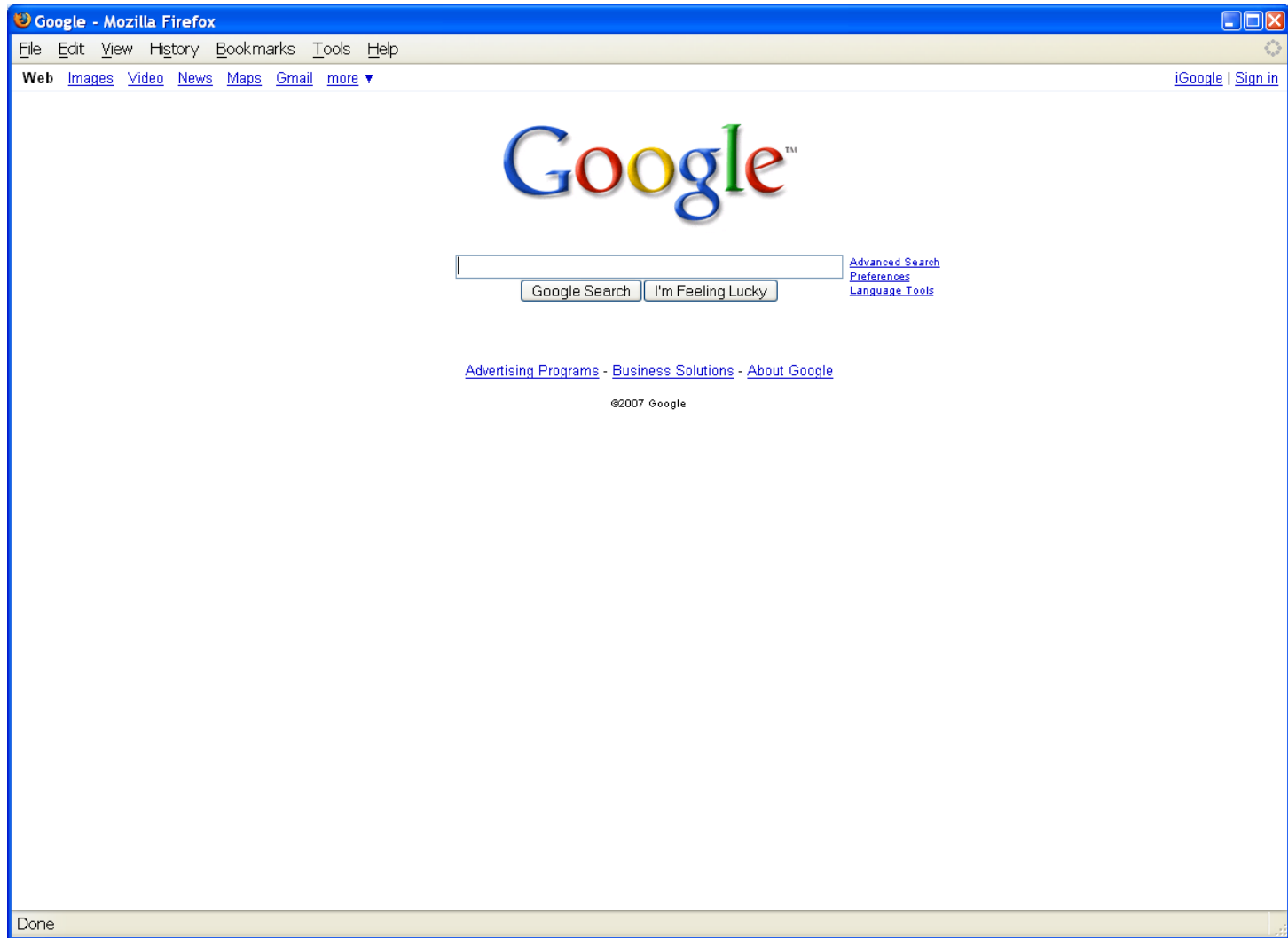
- Chess analogy: a few simple rules that disguise an infinitely complex game
- The three-part structure
  - Openings: many strategies, lots of books about this
  - End game: well-defined, well-understood
  - Middle game: nebulous, hard to describe
- Information navigation has a similar structure!
  - Middle game is underserved

From Hearst, Smalley, & Chandler (CHI 2006)





# Opening Moves

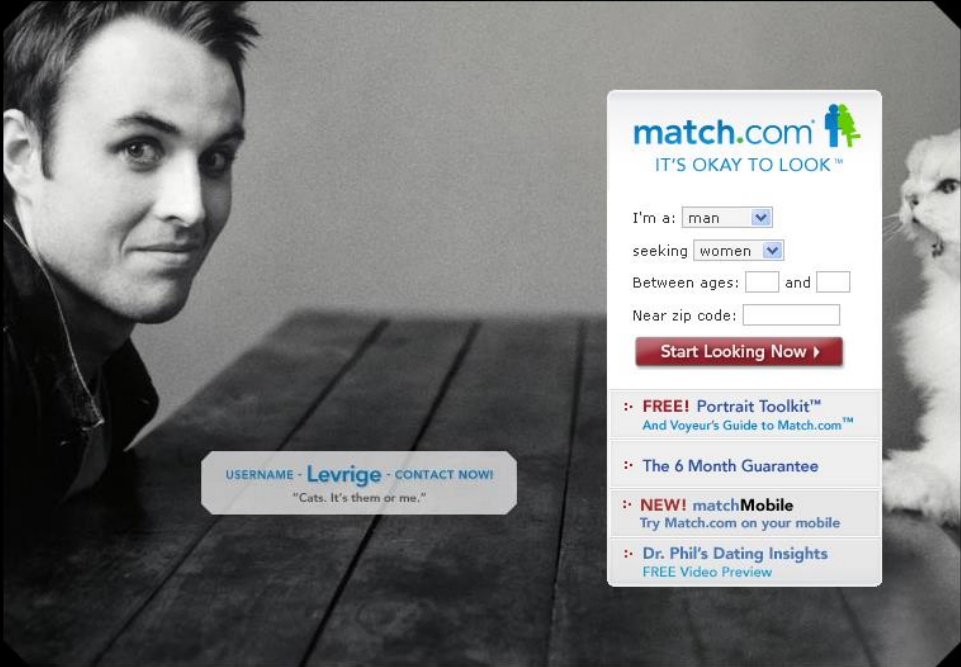


# Opening Moves

Dating Service - Singles, Personals and Love, Match.com - Mozilla Firefox

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SIGN IN



match.com  
IT'S OKAY TO LOOK™

I'm a:

seeking

Between ages:  and

Near zip code:

**Start Looking Now >**

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And Voyeur's Guide to Match.com™

• The 6 Month Guarantee

• **NEW!** matchMobile  
Try Match.com on your mobile

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"Cats. It's them or me."

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Entertainment Interval LiveItUp Isabella Bird Bagsbuy Expedia Hotels Hotwire

Done

# Opening Moves

Yahoo! - Mozilla Firefox

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Browse the Web - quickly and safely with Yahoo! Toolbar

» Get It Now

**YAHOO!**

Web Images Video Local Shopping more

Search:  Web Search

My Yahoo! My Mail

Page Options

**Answers**

Autos Finance Games Groups HotJobs Maps Mobile Web Movies Music Personals Real Estate Shopping Sports Tech Travel TV Yellow Pages

Bix

More Yahoo! Services

**Small Business**

- Get a Web Site
- Domain Names
- Sell Online
- Search Ads

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**Featured** Entertainment Sports Video

Sep 17, 2007

**Seven easy dinners**

Get a no-hassle meal on the table with these simple menus for every day of the week. » See recipes

- Salad recipes Quick recipes
- Web sites for quick & easy dinners

Seven quick dinner menus for the week

How to boost your wealth in minutes

Column: Pats' win was a big disappointment

Bill Maher grills Democratic candidates

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**In the News** World Local Finance

As of 5:08 p.m. EDT

- Iraq expels security firm Blackwater USA | Shooting incidents
- New AG nominee played key role in response to 9/11 | Reactions
- D.C. mayor urges Senate to grant city full voting rights in House
- Chavez threatens to take over private schools in Venezuela
- Sales of new hybrid cars rises 49 percent in U.S. | Green cars
- Study suggests percentage of left-handed people increasing
- Fantasy novel writer Robert Jordan dies at 58

» More: News Election '08: Candidate Mashup

Markets: Dow: -0.3% Nasdaq: -0.8% Sponsored by: **Scottrade**

Stock Quotes:  Go

**Marketplace**

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chase.com/freedom - Ad Feedback

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**Pulse - What Yahoos Are Into**

**Popular Candid Celeb Photos**

- Dedicated Fashionistas
- J. Lo Struts Her Stuff
- Brangelina's Vacation
- Halle's Baby Bump
- Keeping It Under Wraps

Done

# Middle Game



Search Amazon.com tiger

**Category**

**Any Category**

- Books (124,039)
- Sports & Outdoors (31,206)
- Home & Garden (15,975)
- Toys & Games (10,716)
- Apparel (7,925)
- Everything Else (7,221)
- Jewelry & Watches (3,608)
- Automotive (1,126)
- Music (917)


**"tiger"**

Did you mean **tigger**?

Related Searches: [leopard](#), [tiger woods](#).

Showing Top Results

1.



**Apple Mac OS X Tiger 1**

Buy new: ~~\$129.00~~ **\$119.9**

In Stock

# Middle Game

autograph Tom Brady, Autographs-Original, Autographs-Reprints Items on eBay.com - Mozilla Firefox

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Categories Motors Express Stores

SWAP YOUR RIDE HEAR WHAT PEOPLE LIKE YOU HAD TO SAY AFTER DRIVING A FORD FOR ONE WEEK. CHALLENGE

Home > Buy > Search Results for 'autograph Tom Brady'

All Items Auctions Buy It Now

autograph Tom Brady All Categories Search Advanced

☐ Search title and description

Related Searches: **tom brady** auto, **tom brady**, reggie bush auto, **tom brady** sp, **tom brady** contenders

**Narrow Your Results**

Sports Mem, Cards & Fan Shop (31)

Autographs-Original (13)

Autographs-Reprints (11)

Cards (5)

[more ...](#)

**Related Guides**

Sports Collectibles


Graded Sports Cards


Sports Autographs


31 items found for: autograph Tom Brady ([Save this search](#))

List View | [Picture Gallery](#)

☐ Compare Item Title

☐  2007 TOPPS TX TOM BRADY AUTOGRAPH & GAME JE  
Brady's regular card #3 in the set is included

☐  TOM BRADY 8X10 PHOTO AUTOGRAPH AUTO COA  
GAI CERTIFIED BY THE BEST IN THE BUSINESS !!!



# Joomla Structure

- Front end
  - The Web site
- Back end
  - Where the Web site is defined

# Joomla Components

- Web sites are made up of rectangular pieces
  - Called “modules”
- Two basic types of modules:
  - Displaying content (e.g., articles)
  - Interaction (e.g., login)
- Templates define where modules can be put
  - Templates define abstract “positions”
  - Joomla maps positions to layout in ways appropriate to the device

# Joomla Features

- Menus control navigation
  - Menu items control where you can go
- Categories group things (i.e., entities)
  - University courses, Apollo missions, Meetups, ...
- Extensions allow you to add new capabilities
  - JCE Editor, Image rotator, Google maps, ...





# Joomla Hosting

- Your own computer
  - Useful as a way to try things out
  - Not easily accessible to others
- Demo account (for 30 days) at [joomla.org](http://joomla.org)
  - You can pay to keep it past 30 days
- Web hosting service
  - Longer life, more support, or less cost
  - More complex to set up

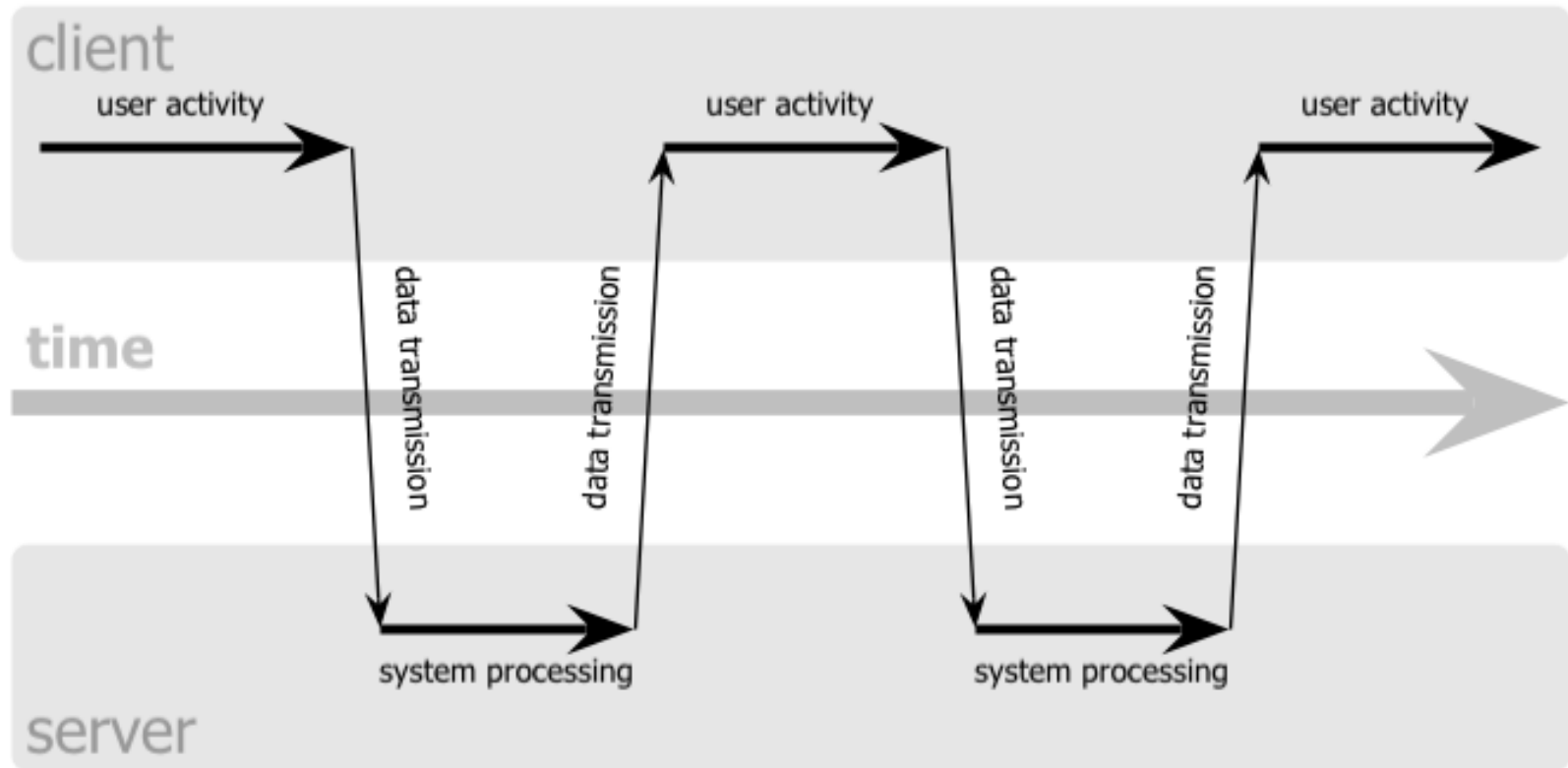
# Joomla First Steps

- System->Control Panel
  - Gets to the back-end home
- Install the Joomla Content Editor (JCE)
- Learn how to insert content
  - Images, text without formatting
- Learn how to set up menu items
- Learn how to control layout

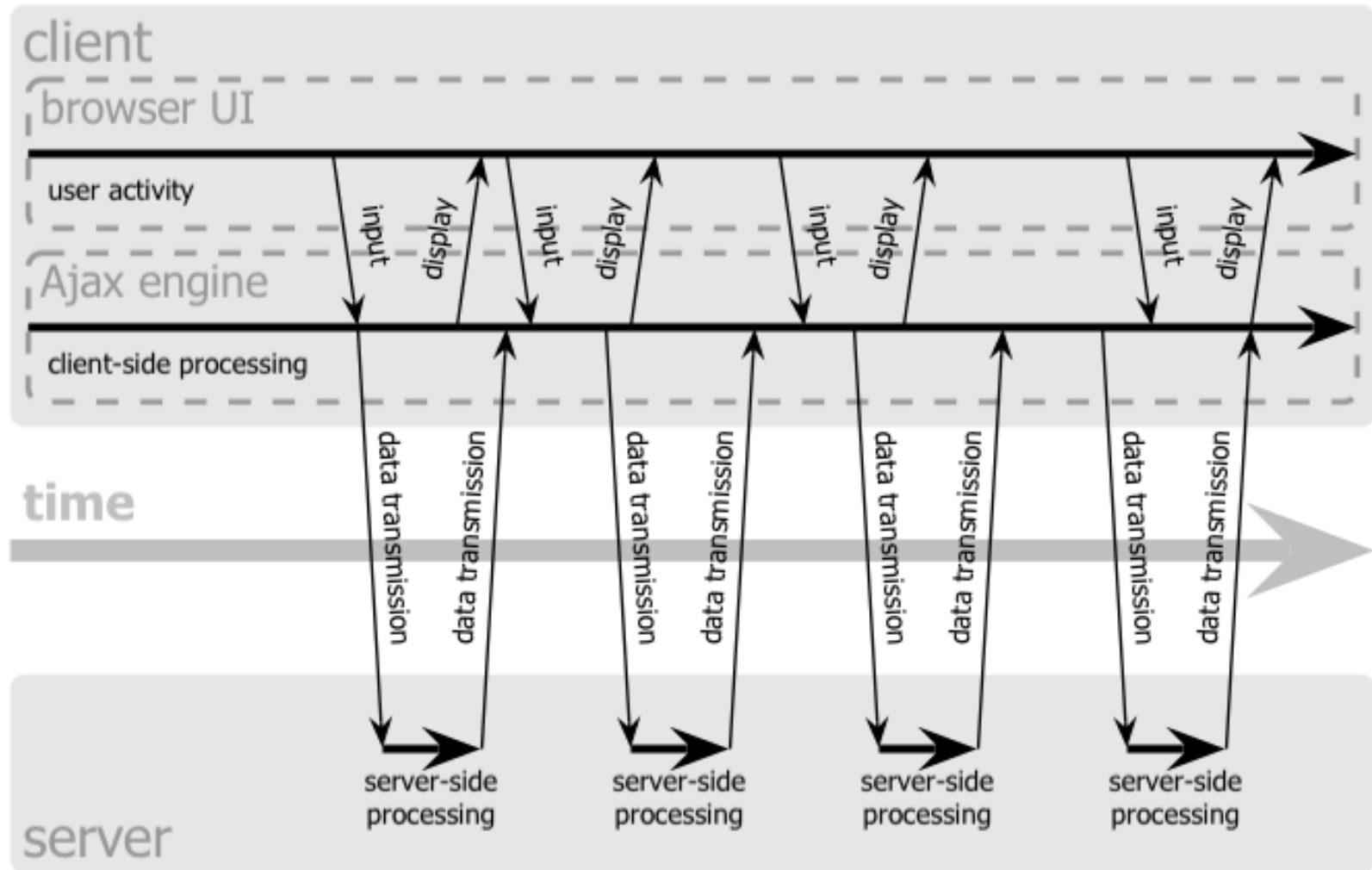
# Ajax Applications

- Google Maps
  - <http://maps.google.com>
- Google Suggest
  - <http://www.google.com/webhp?complete=1&hl=en>
- Sajax Tables
  - <http://labs.revision10.com/?p=5>
- Sajax
  - <http://www.modernmethod.com/sajax/>

## classic web application model (synchronous)



## Ajax web application model (asynchronous)



# Navigation Patterns

- Drive to content
- Drive to advertisement
- Move up a level
- Move to next in sequence
- Jump to related

# Evaluation Approaches

- Formative vs. summative
- Extrinsic vs. intrinsic
- Quantitative vs. qualitative
  - Deductive vs. inductive
- User study vs. simulation



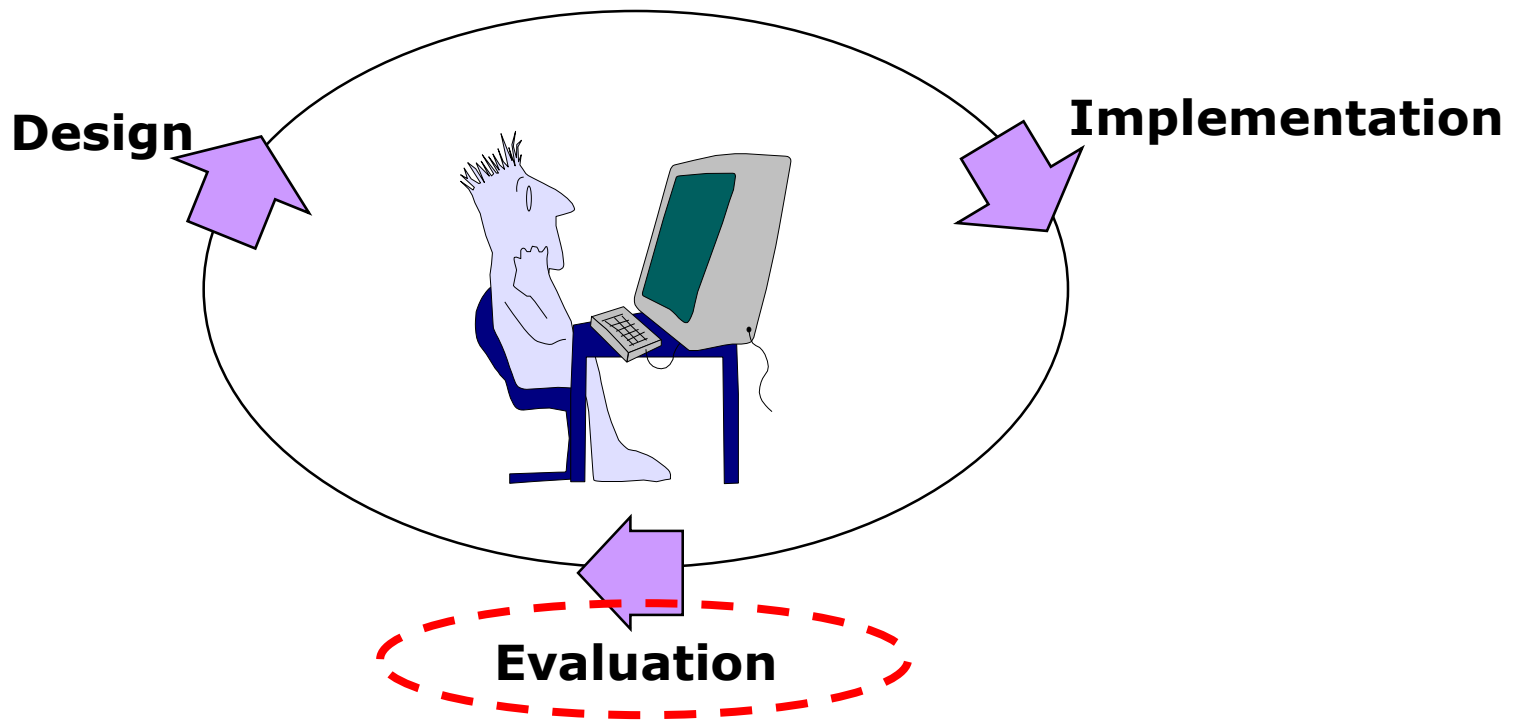
# Evaluation Examples

- Direct observation
  - Evaluator observes users interacting with system
    - in lab: user asked to complete pre-determined tasks
    - in field: user goes through normal duties
  - Validity depends on how contrived the situation is
- Think-aloud
  - Users speak their thoughts while doing the task
  - May alter the way users do the task
- Controlled user studies
  - Users interact with system variants
  - Correlate performance with system characteristics
  - Control for confounding variables

# Evaluation Measures

- Time to learn
- Speed of performance
- Error rate
- Retention over time
- Subjective satisfaction

# Human-Computer Interaction



**of interactive computing systems for human use**

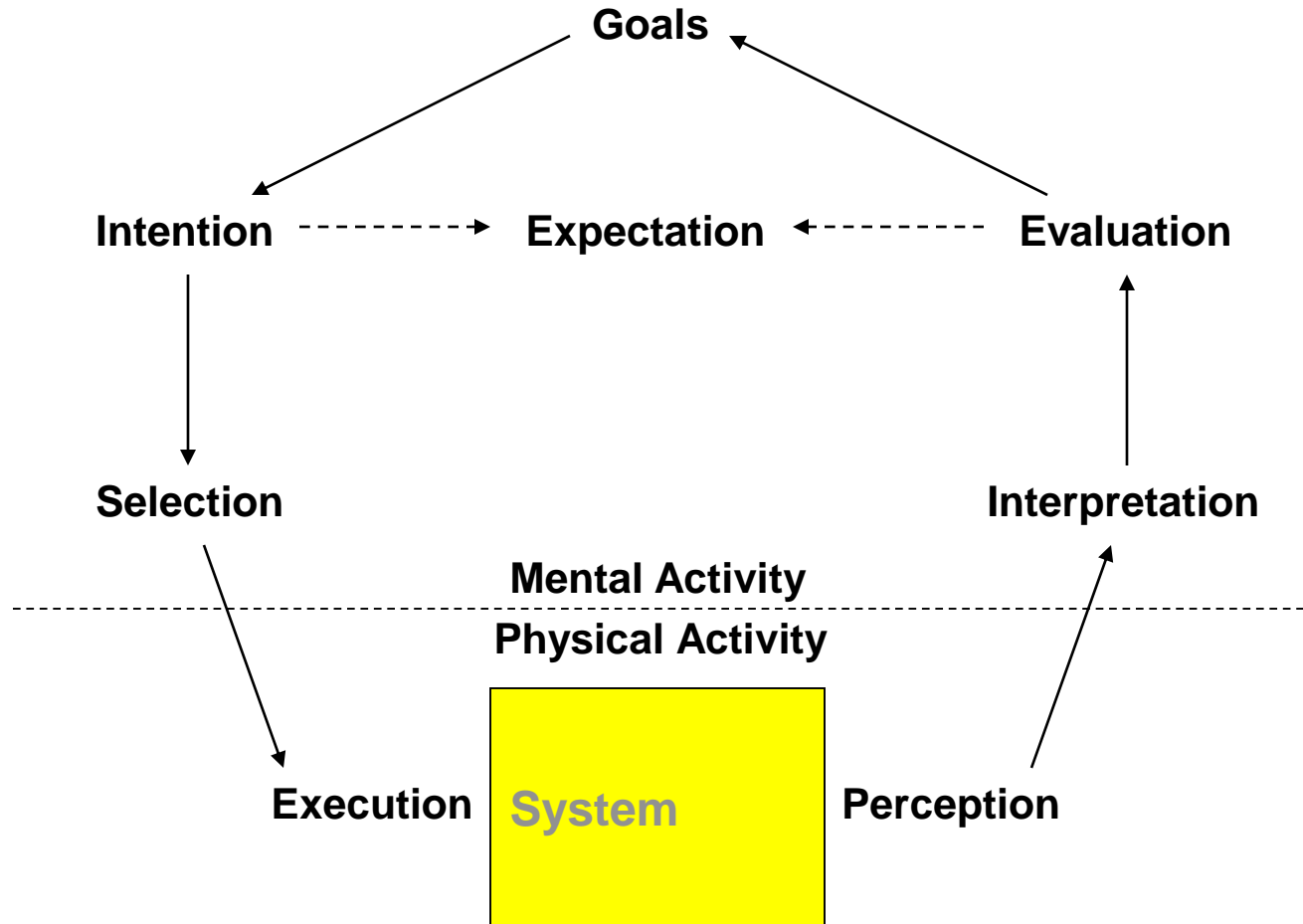
# Synergy

- Humans do what they are good at
- Computers do what they are good at
- Strengths of one cover weakness of the other

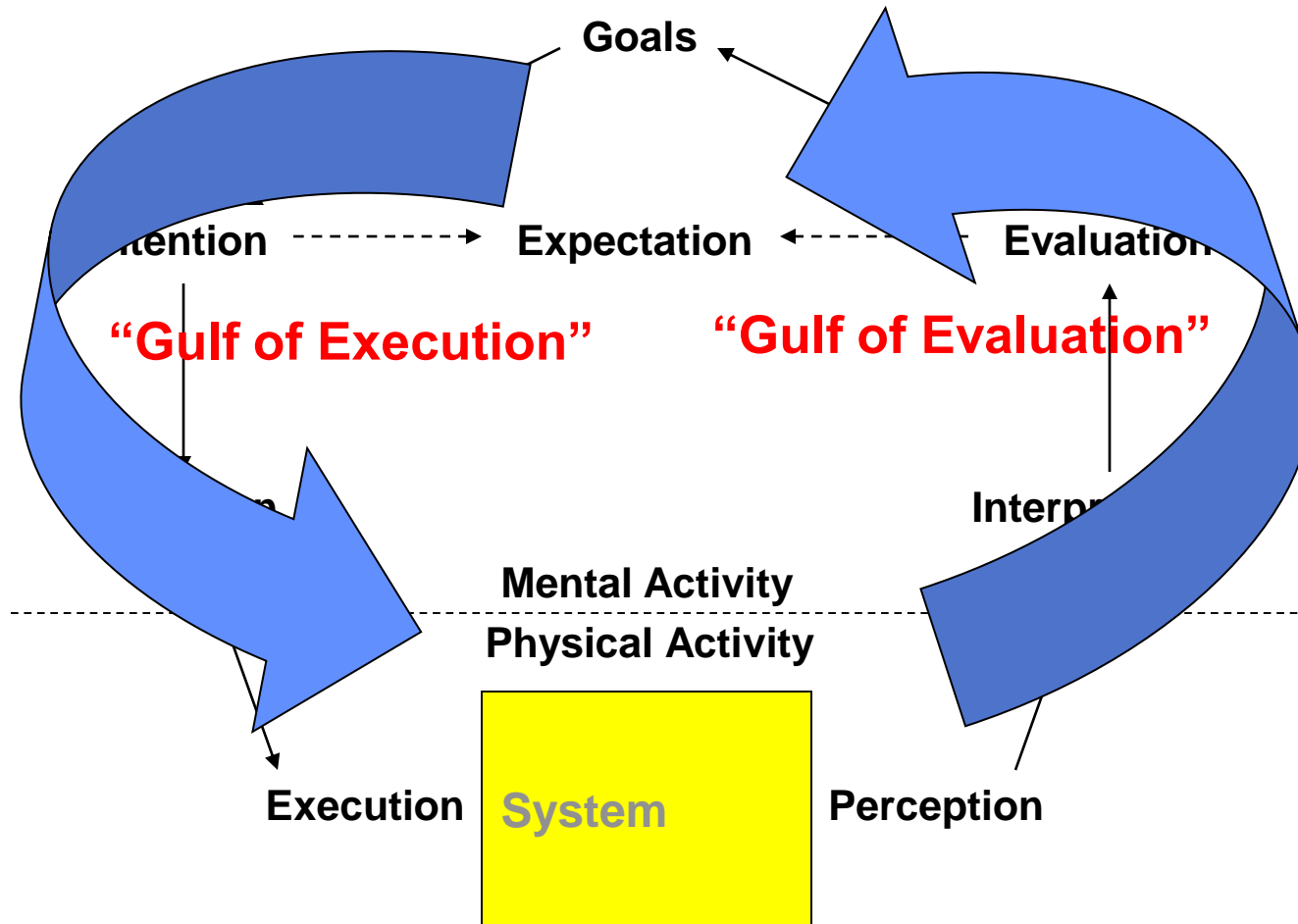
# Interaction

- Forming an intention
  - Internal mental characterization of a goal
- Selection of an action
  - Review possible actions, select most appropriate
- Execution of the action
  - Carry out appropriate actions with the system
- Evaluation of the outcome
  - Compare results with expectations

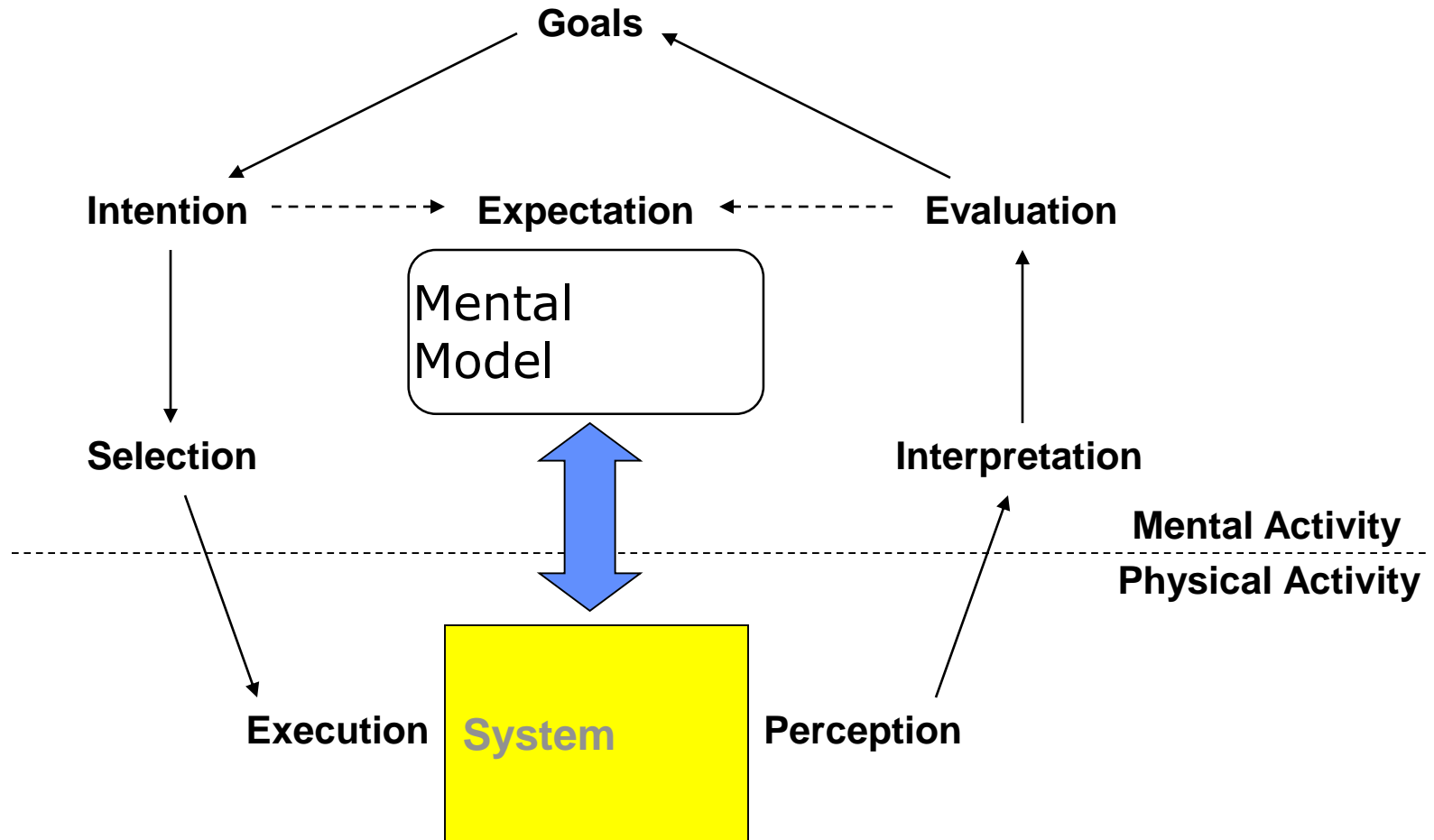
# Stages of Interaction



# Challenges of HCI



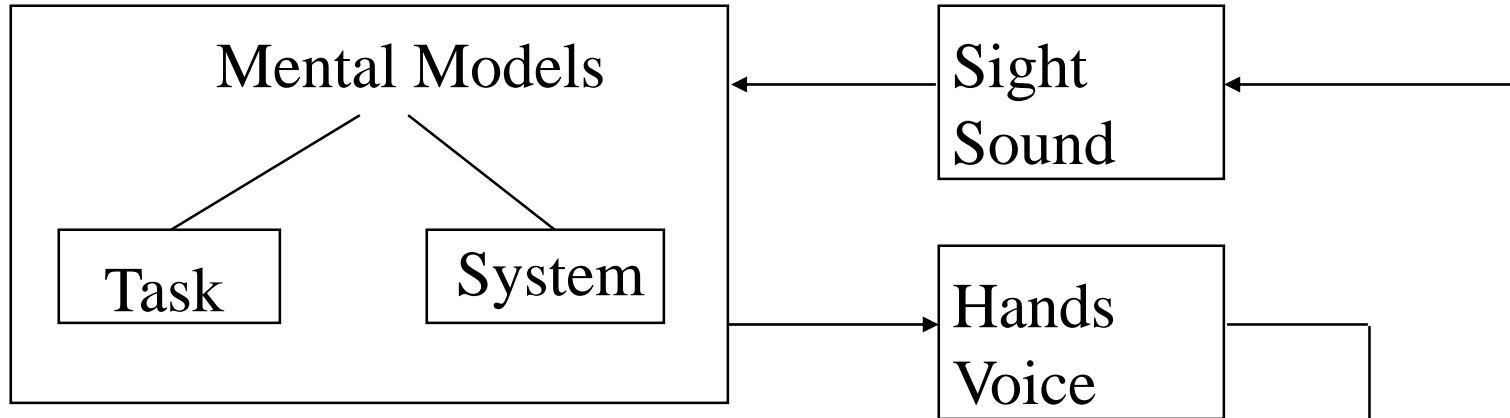
# What is good design?



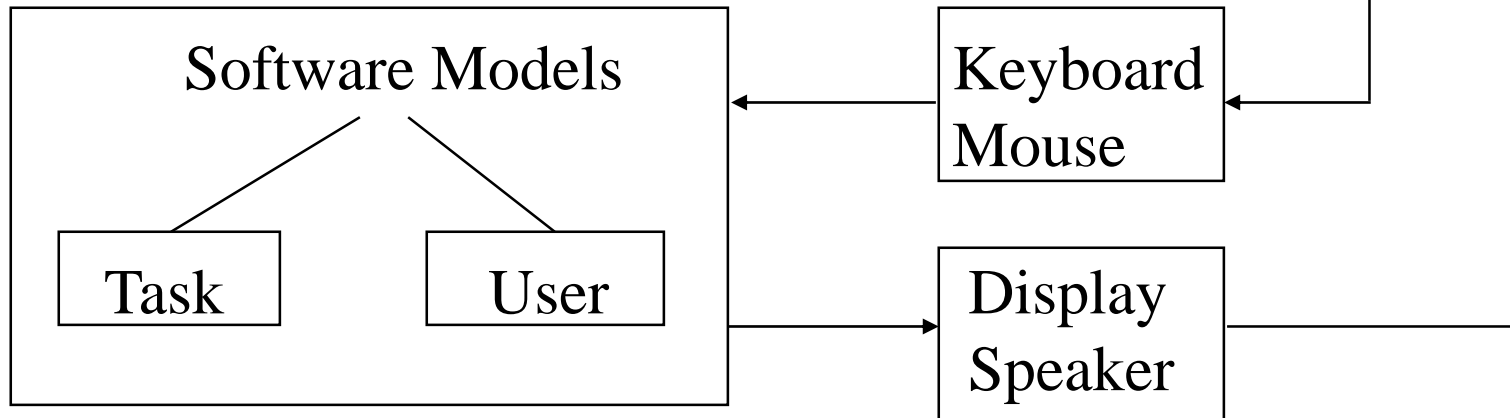


# Modeling Interaction

Human



Software Models



Computer

# Mental Models

- How the user thinks the machine works
  - What actions can be taken?
  - What results are expected from an action?
  - How should system output be interpreted?
- Mental models exist at many levels
  - Hardware, operating system, and network
  - Application programs
  - Information resources

# Static Design

- Organizing principles
  - Logical: e.g., chronological, alphabetical
  - Functional: by task
  - Demographic: by user
- Metaphors
  - Organizational: e.g., e-government
  - Physical: e.g., online grocery store
  - Functional: e.g., cut, paste
  - Visual: e.g., octagon for stop

# Before You Go

On a sheet of paper, answer the following (ungraded) question (no names, please):

What was the muddiest point in this semester?