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

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 readss database, generates HTML
- (X)HTML conveys the user experience
- User-side scripting enhances interactivity
  - JavaScript may be used for form validation

Client Hardware (PC)

Web Browser (IE, Firefox)

Client-side Programming (JavaScript)

Interchange Language (HTML, XML)

Server-side Programming (PHP)

Database (MySQL)

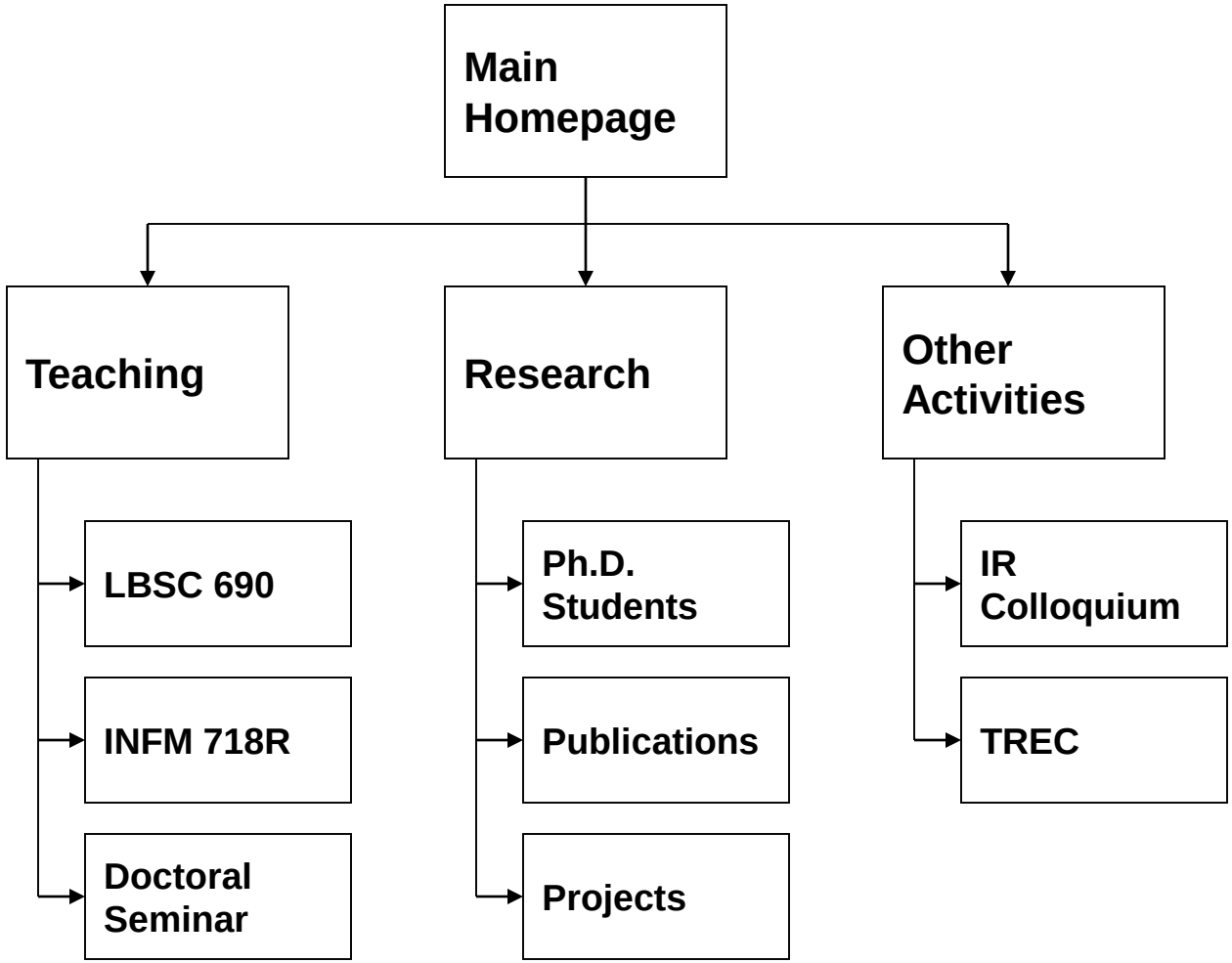
Server Hardware (PC, Unix)

Interface Design

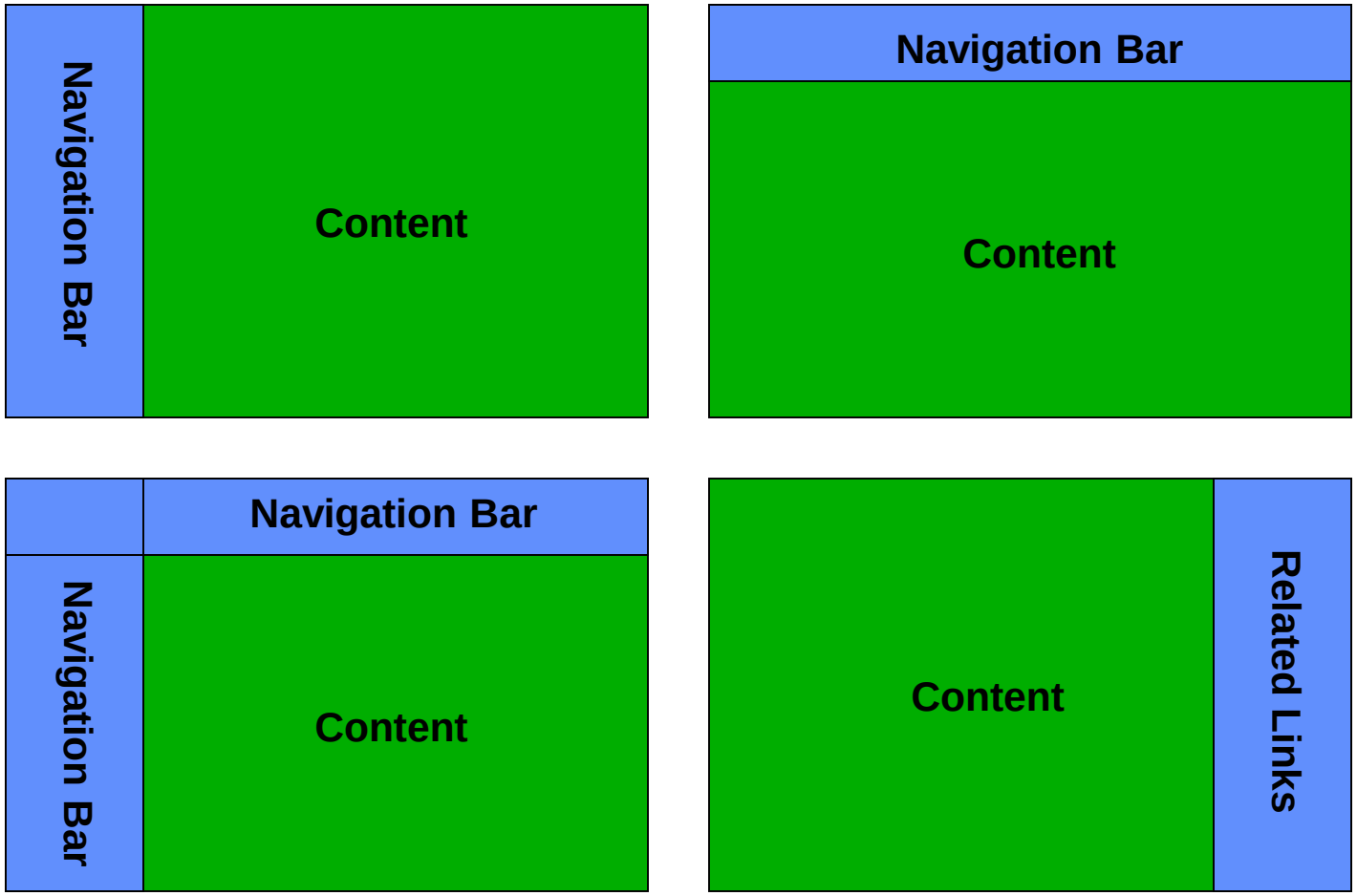
Interaction Design

Business rules

“Site Blueprint”

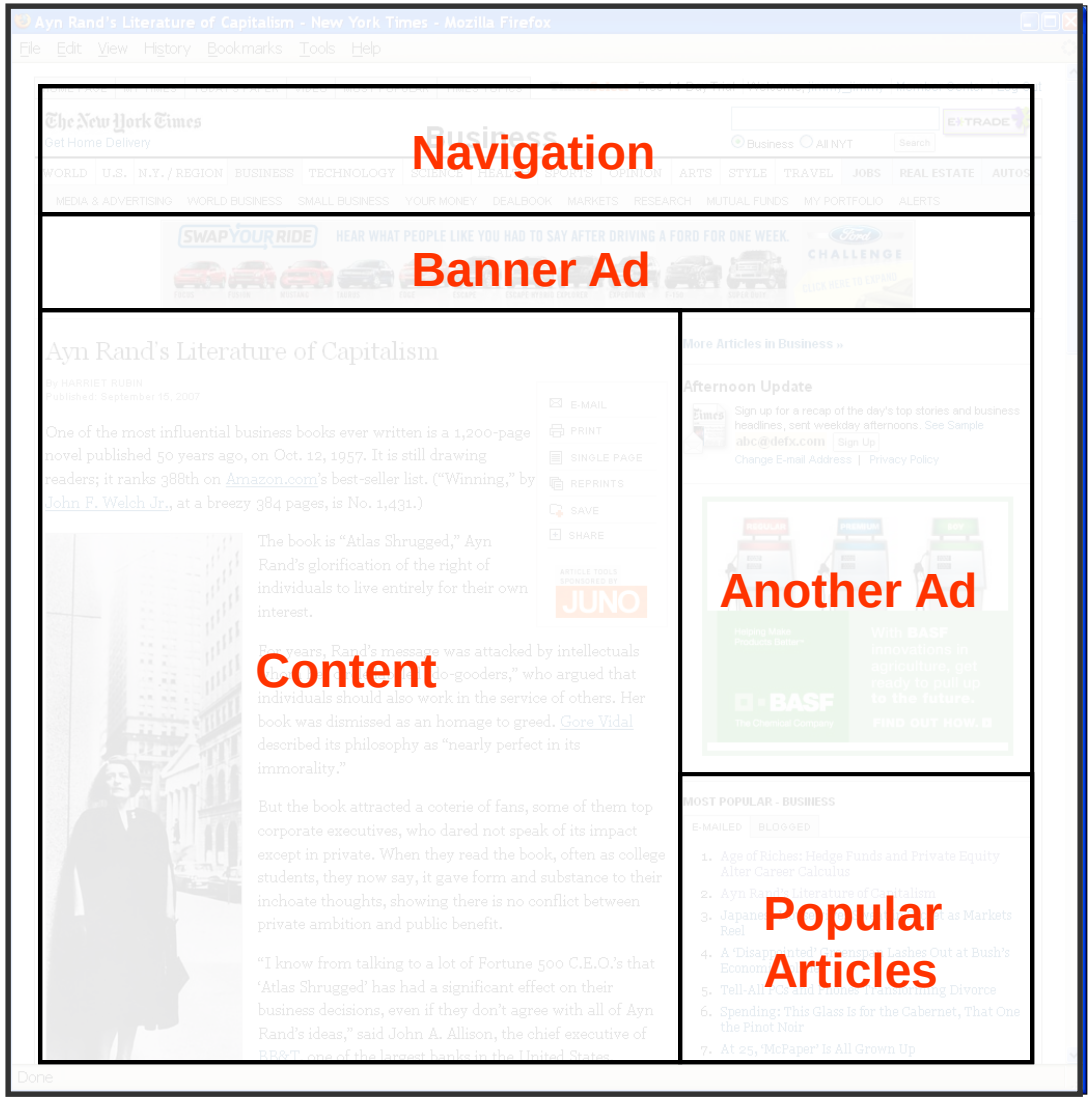


Grid Layouts

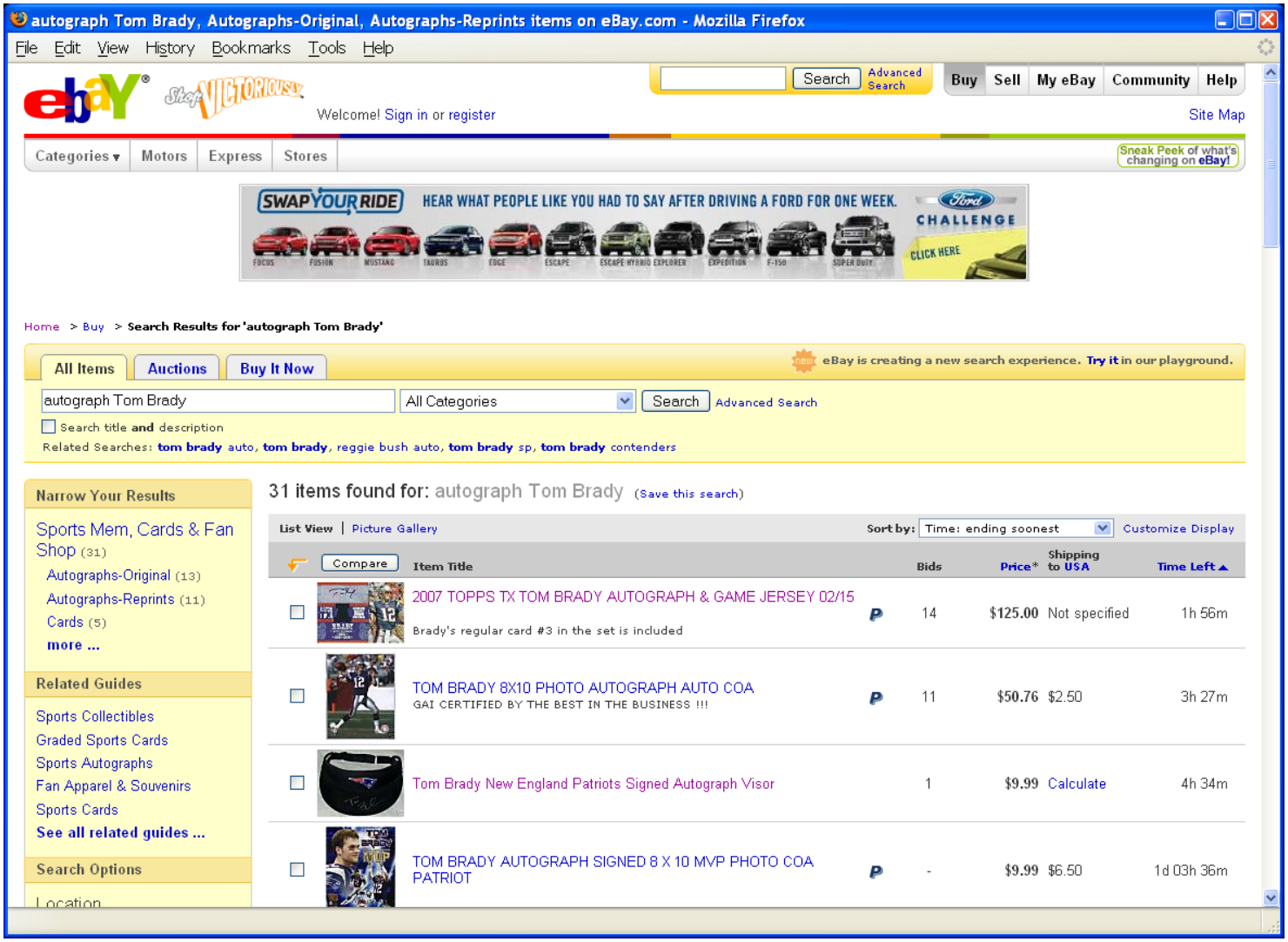


Grid Layout: NY Times

Grid Layout: NY Times



Grid Layout: ebay



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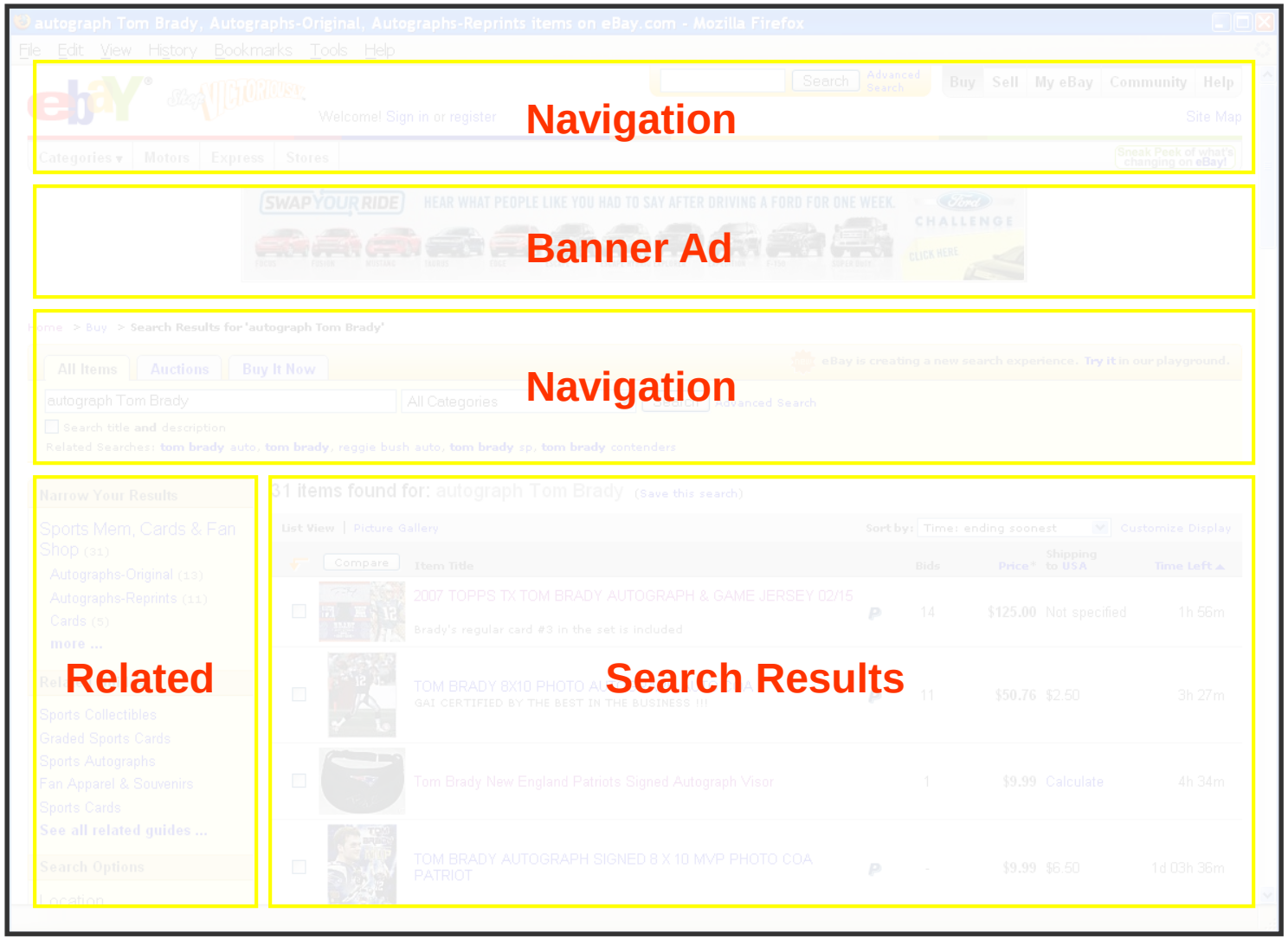

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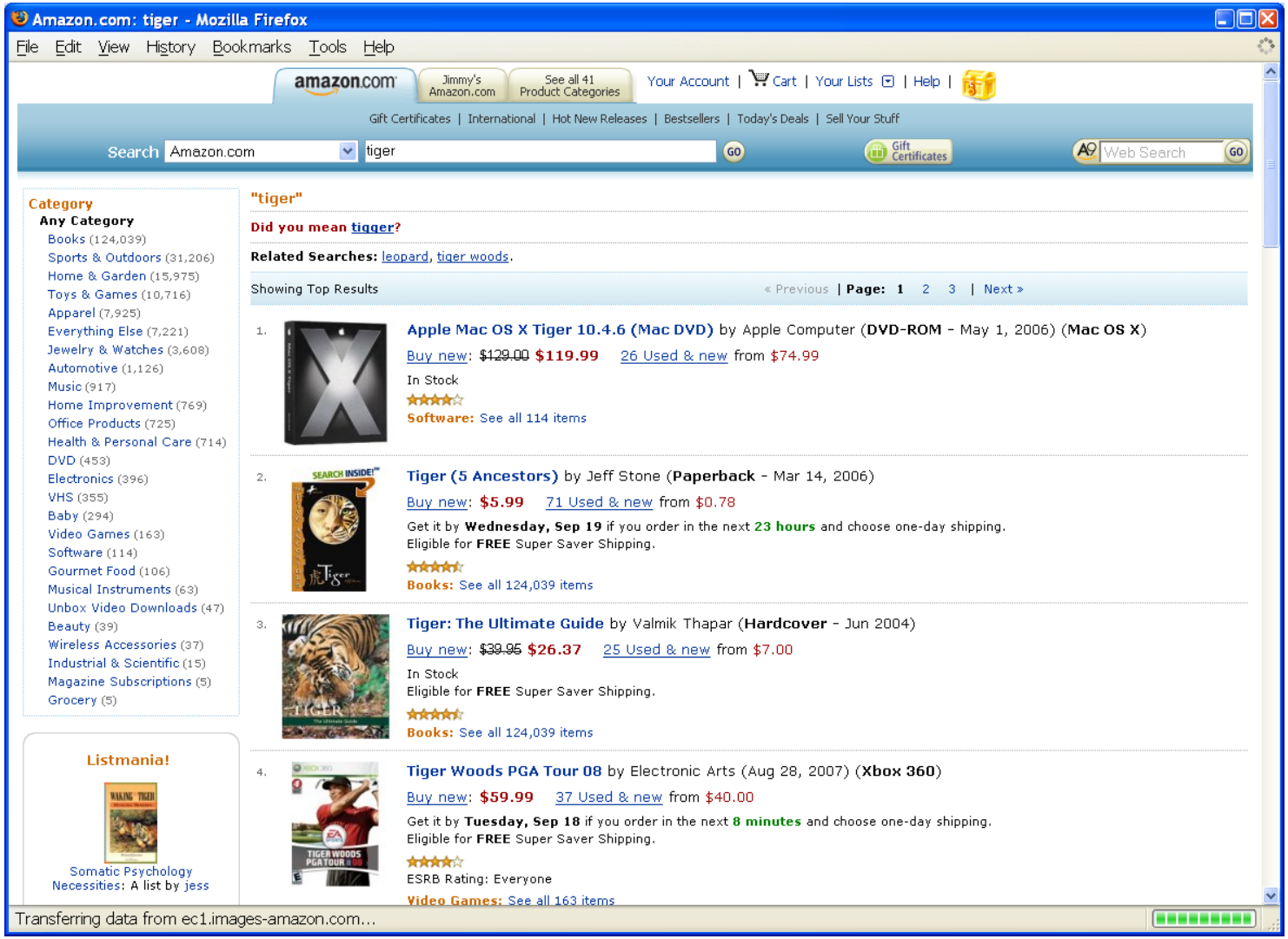
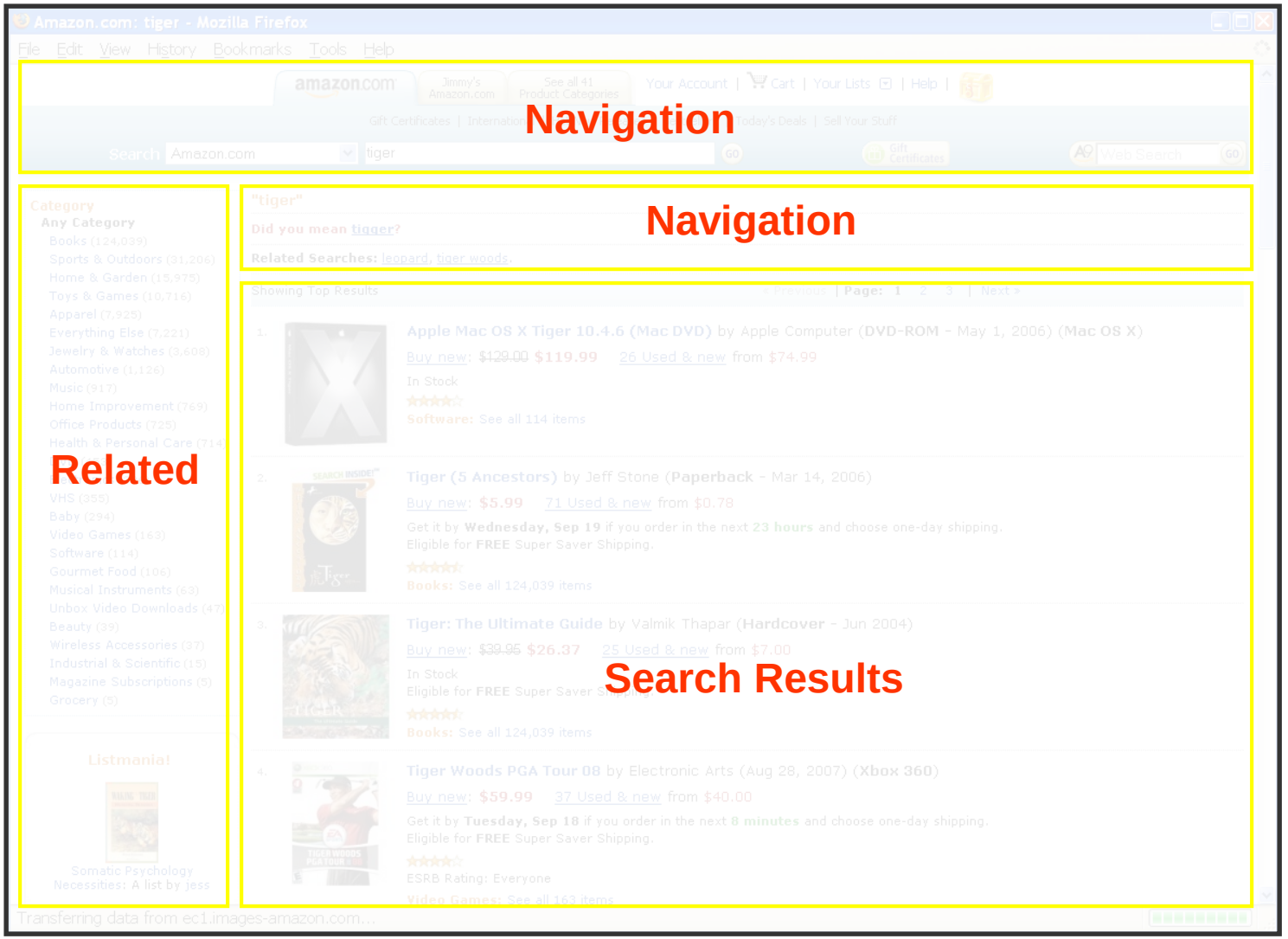


Grid Layout: Amazon



Some Layout Guidelines

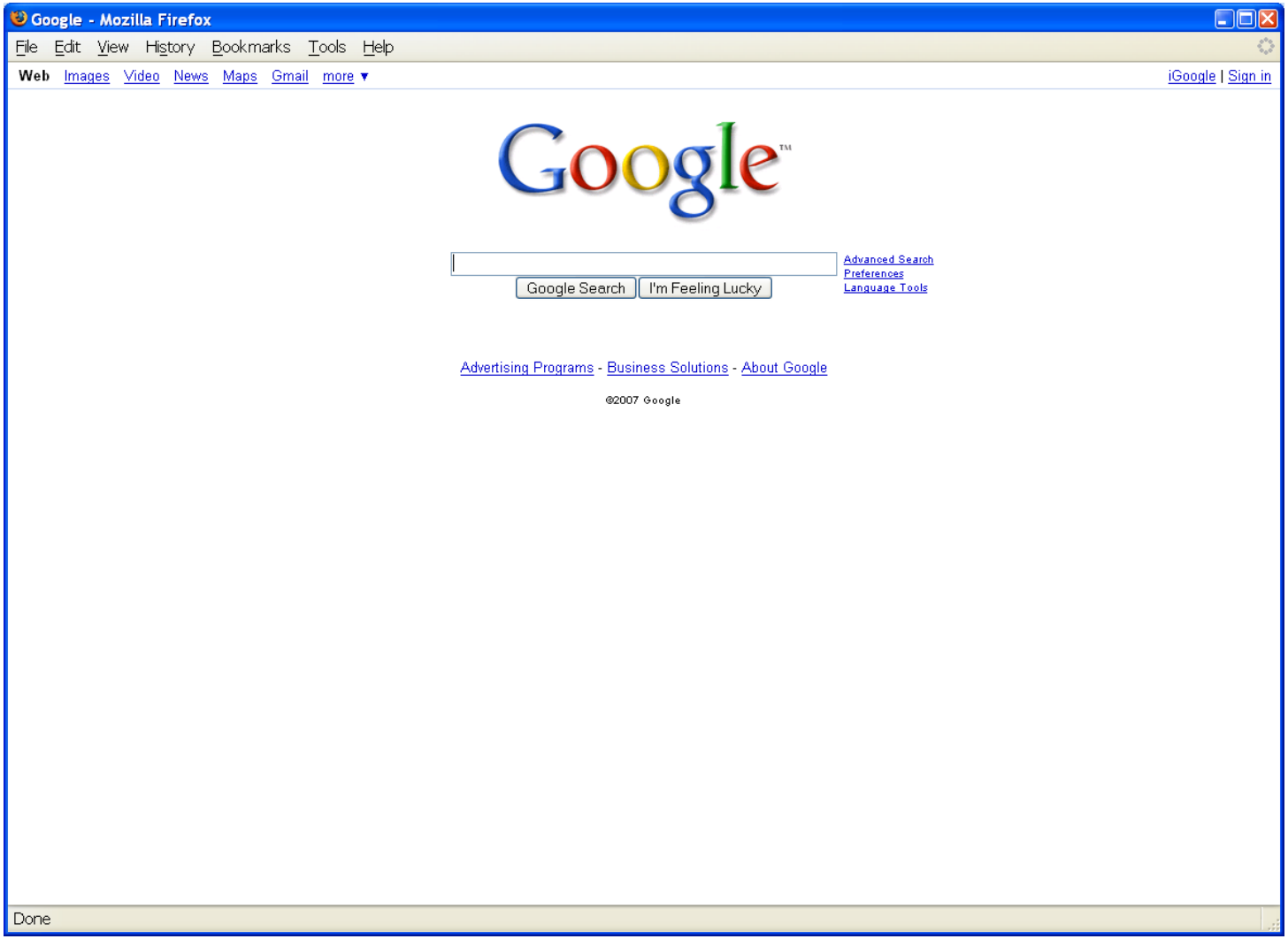
- **C**ontrast: make different things different
  - to bring out dominant elements
  - to create dynamism
- **R**epetition: reuse design throughout the interface
  - to achieve consistency
- **A**lignment: visually connect elements
  - to create flow
- **P**roximity: make effective use of spacing
  - to group related and separate unrelated elements

Interaction Design

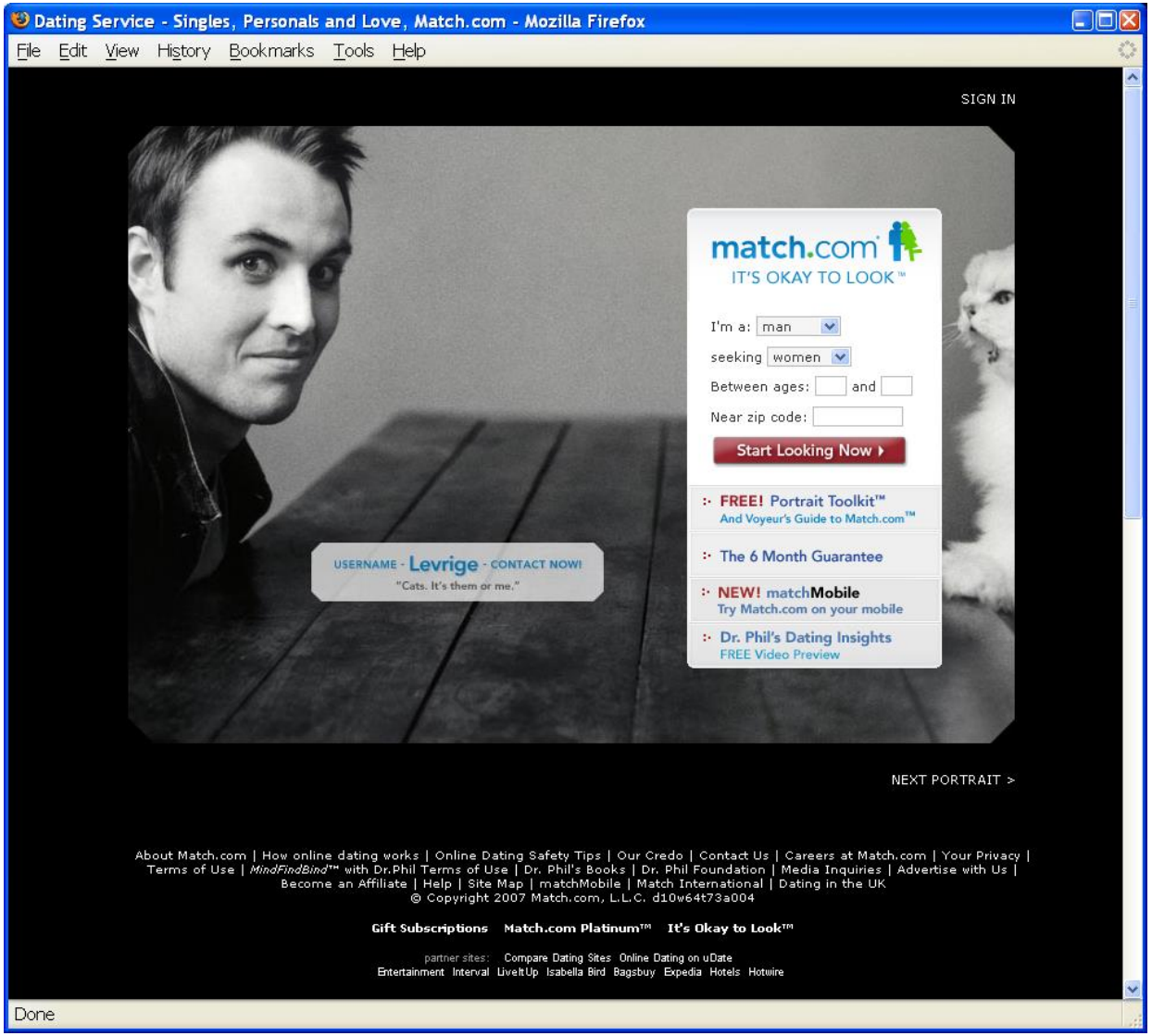
- Chess analogy: a few simple rules that disguise an infinitely complex game
- The three-part structure
  - Openings: many strategies, lots of books about this
  - End game: well-defined, well-understood
  - Middle game: nebulous, hard to describe
- Information navigation has a similar structure!
  -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

From Hearst, Smalley, & Chandler (CHI 2006)

Opening Moves

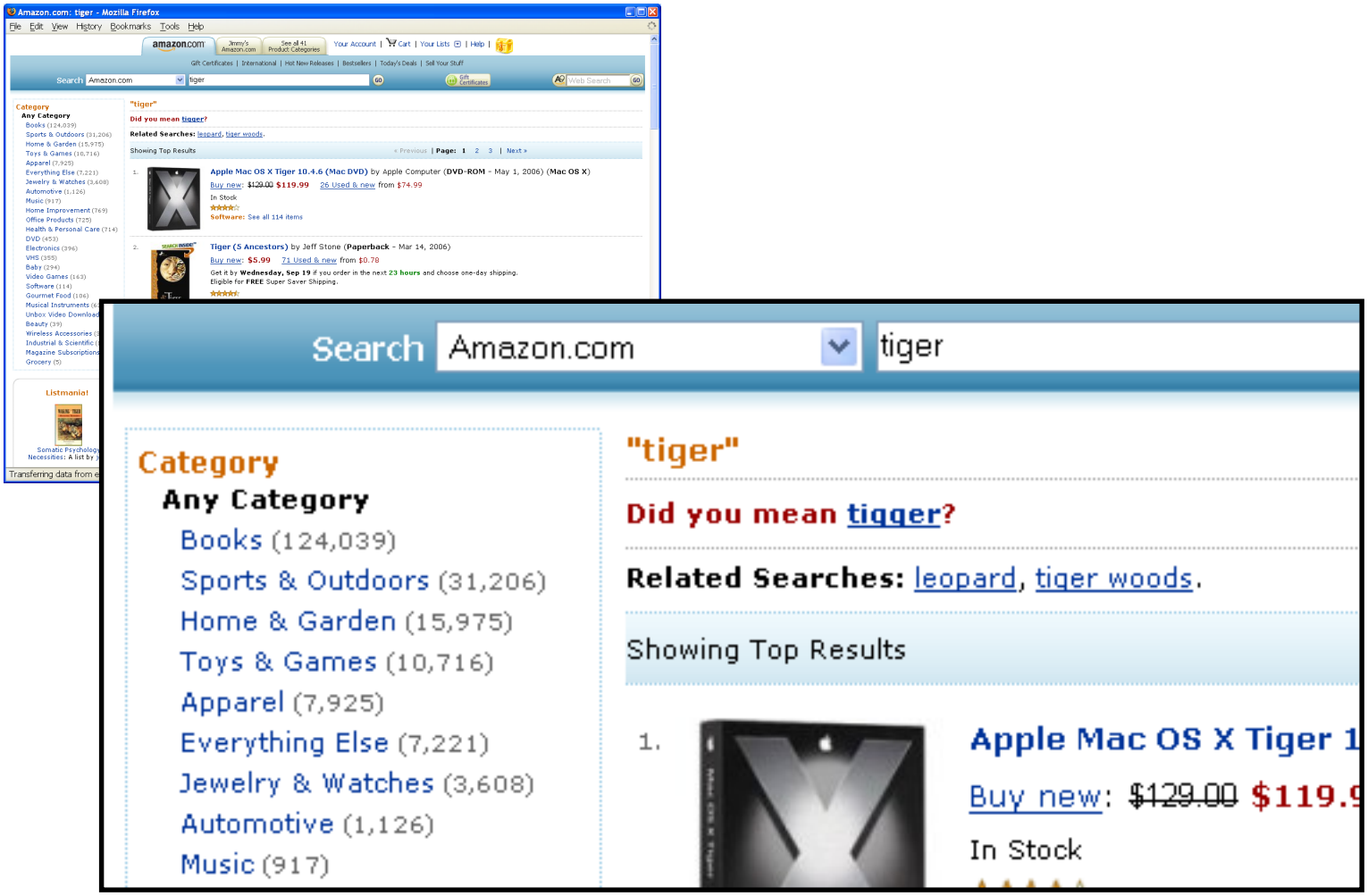


Opening Moves



Opening Moves

Middle Game


Amazon.com: tiger - Mozilla Firefox
Search
Amazon.com
tiger
Category
Any Category
Books (124,039)
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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
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Apple Mac OS X Tiger 1
Buy new: $129.00 $119.9
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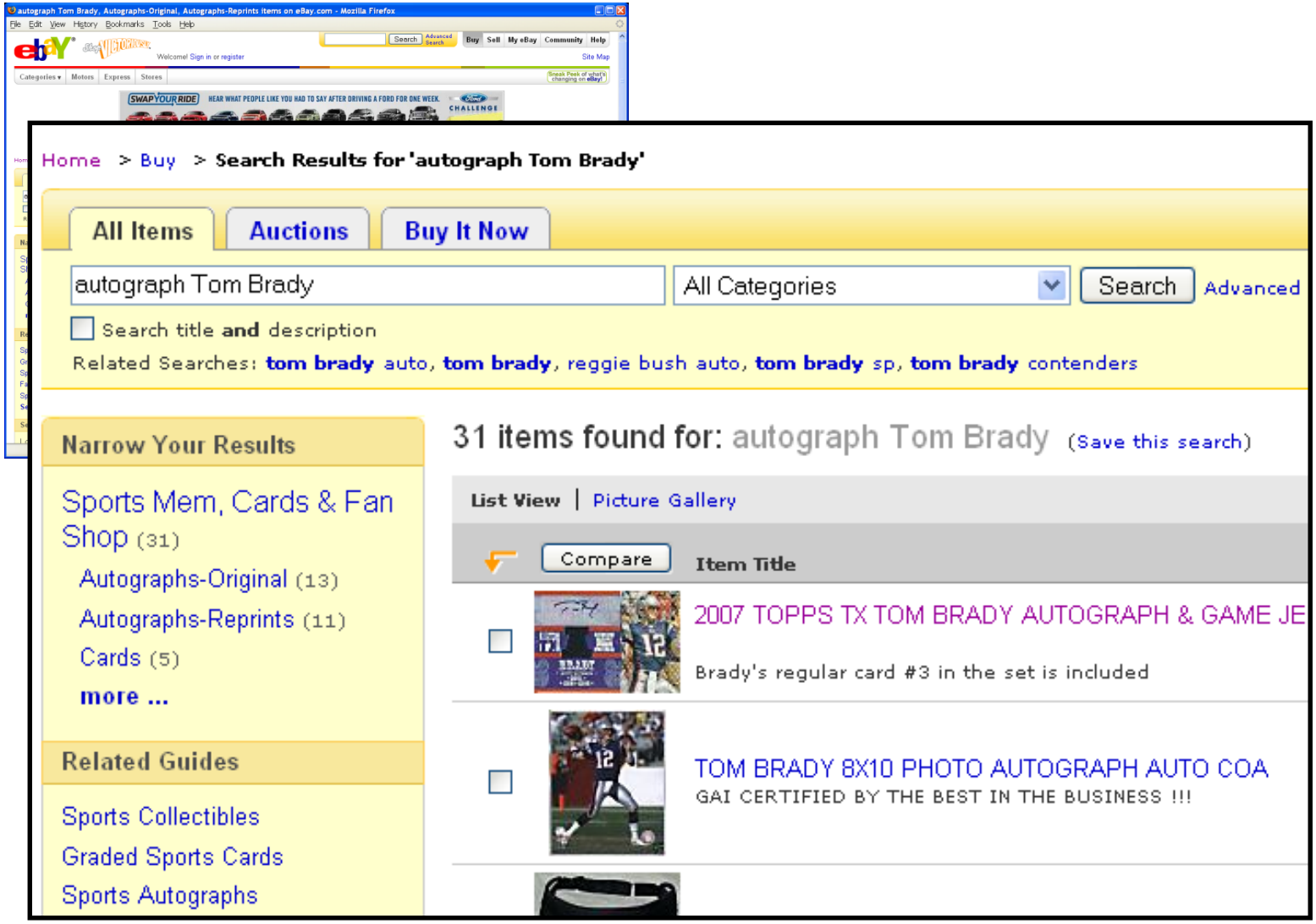
Middle Game


autograph Tom Brady, Autographs-Original, Autographs-Reprints items on eBay.com - Mozilla Firefox
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All Categories
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Autographs-Original (13)
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Related Guides
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Sports Autographs
31 items found for: autograph Tom Brady
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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, …


logo
search
navigation
banner
top center
left
content
right
breadcrumbs
footer

Joomla Hosting

- Your own computer
  - Useful as a way to try things out
  - Not easily accessable to others
- Demo account (for 30 days) at 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

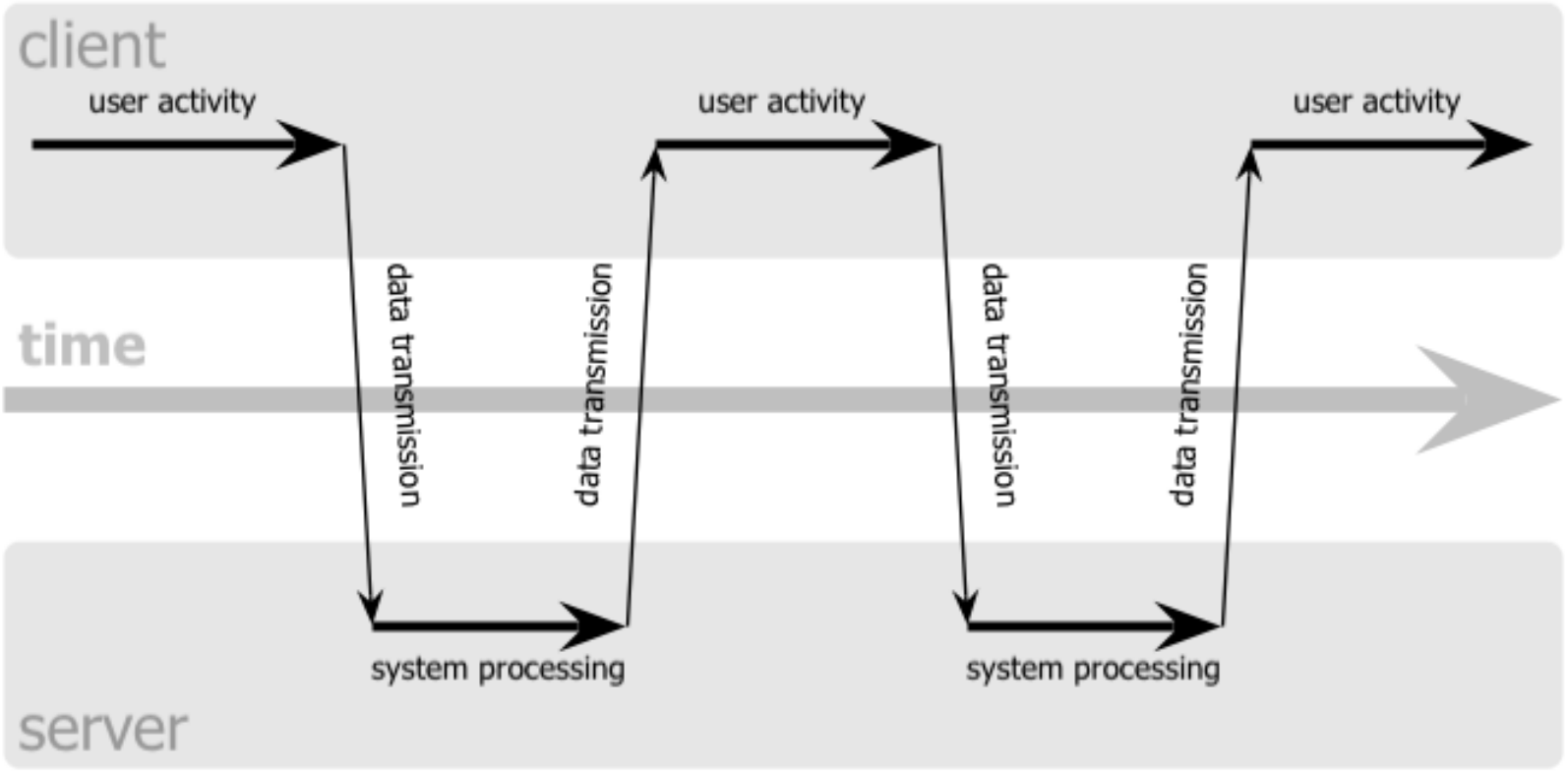
Joomla First Steps

- 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

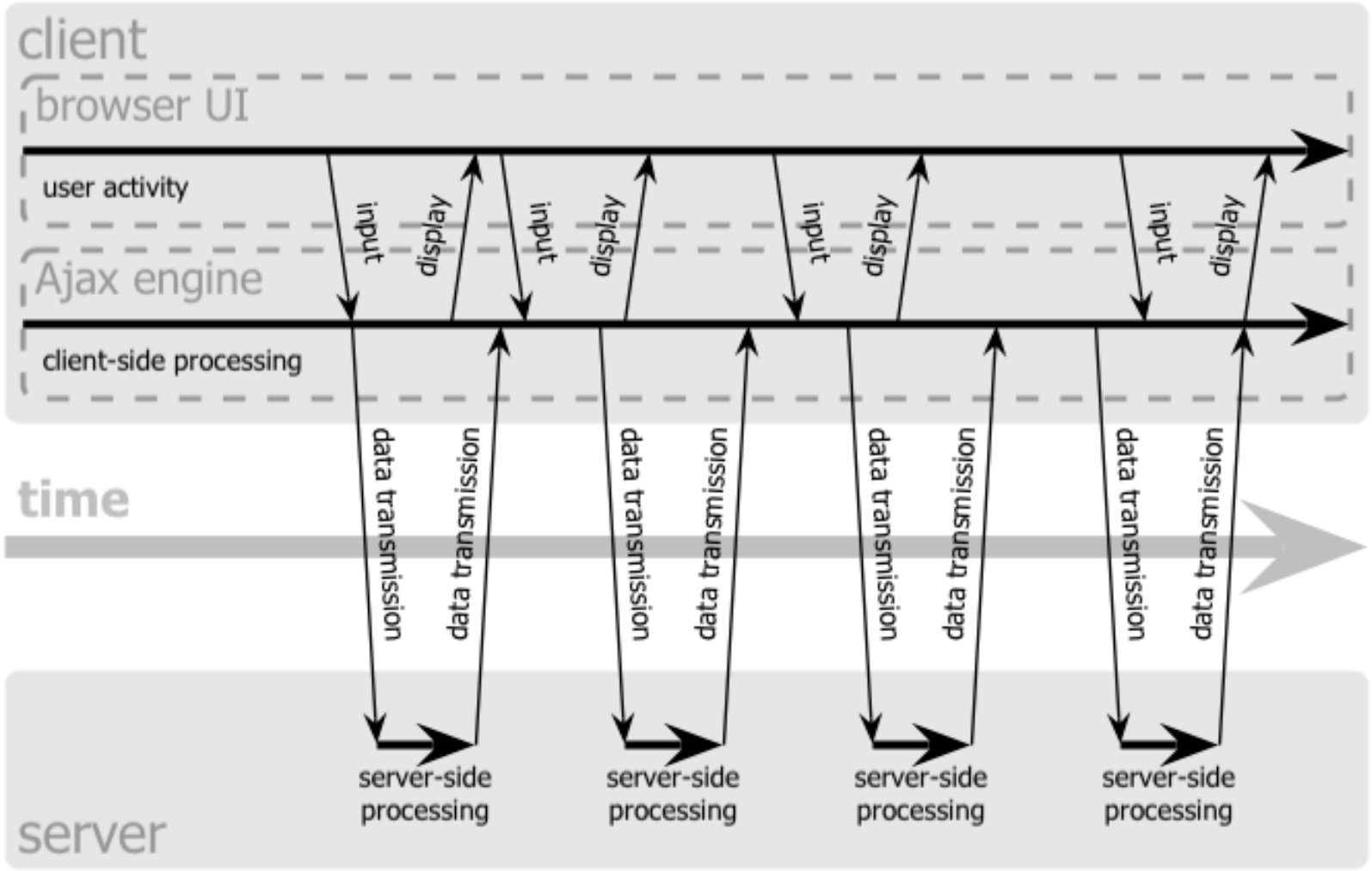
Ajax Applications

- 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

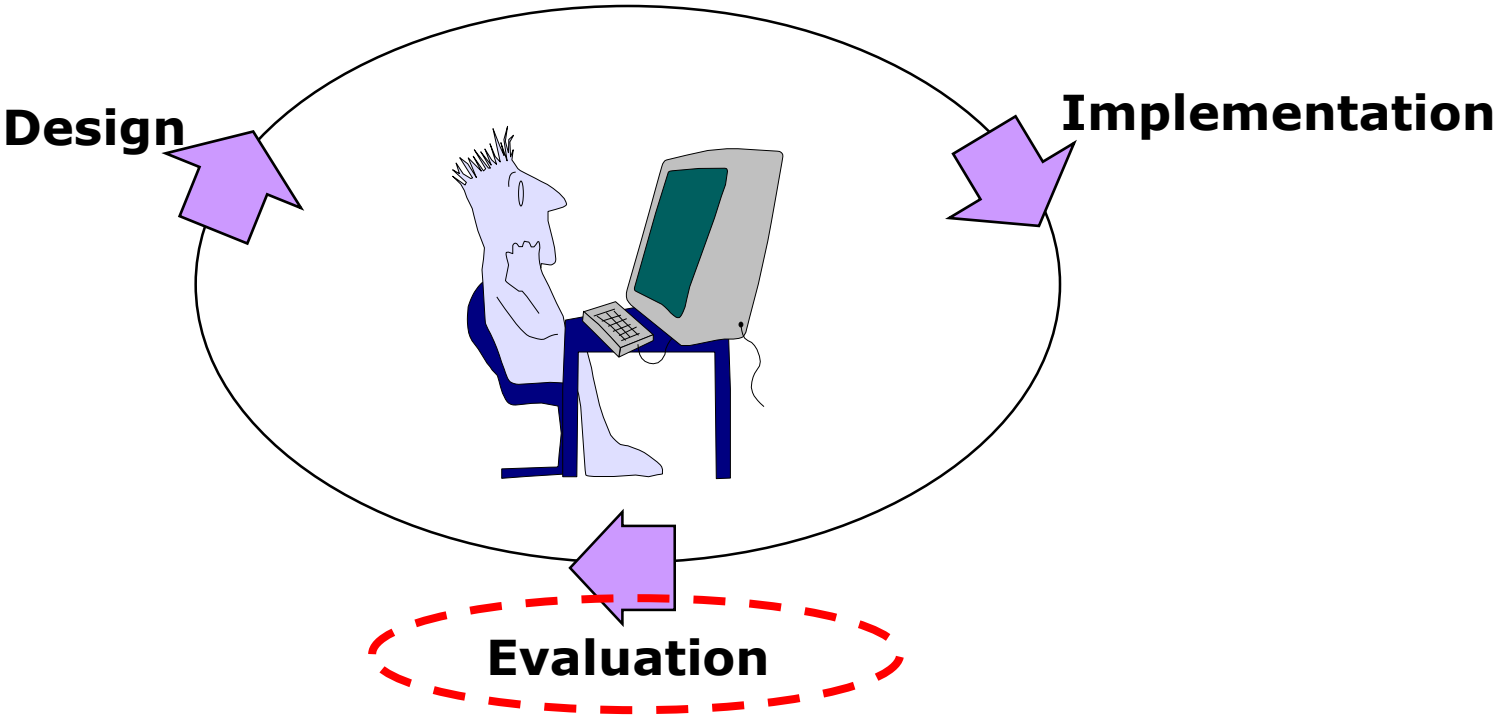
Evaluation Examples

- 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

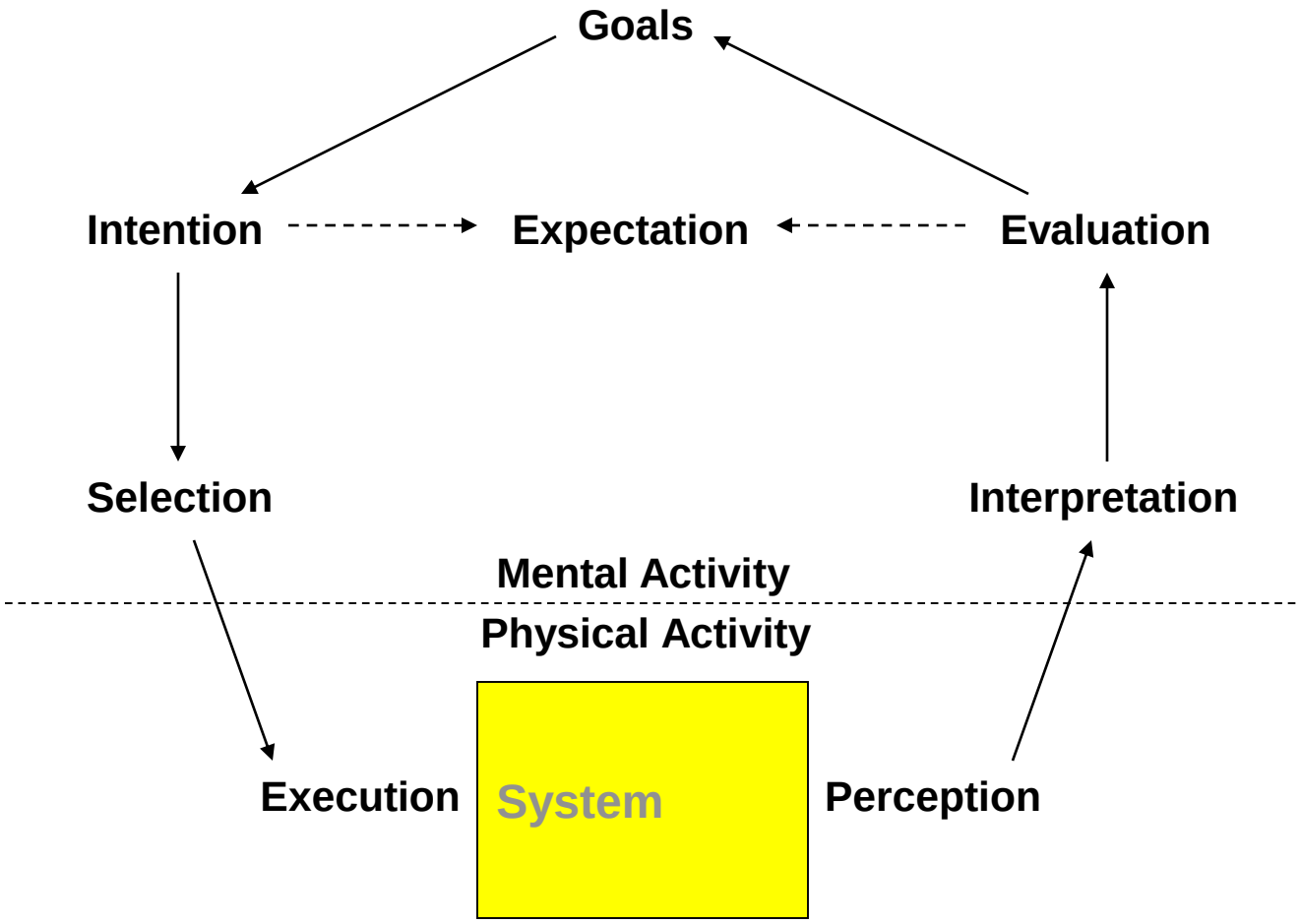
Synergy

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

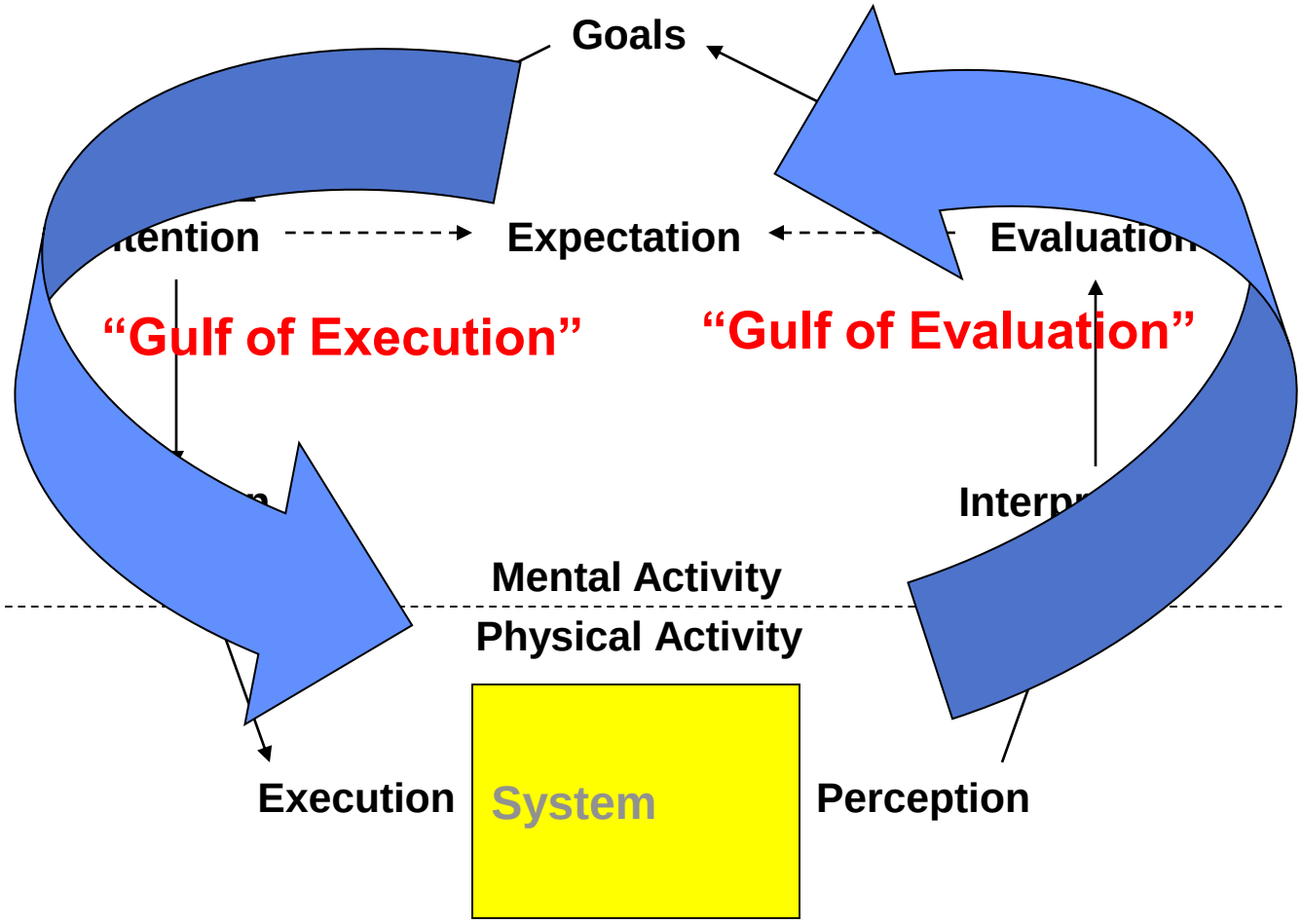
Interaction

- 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

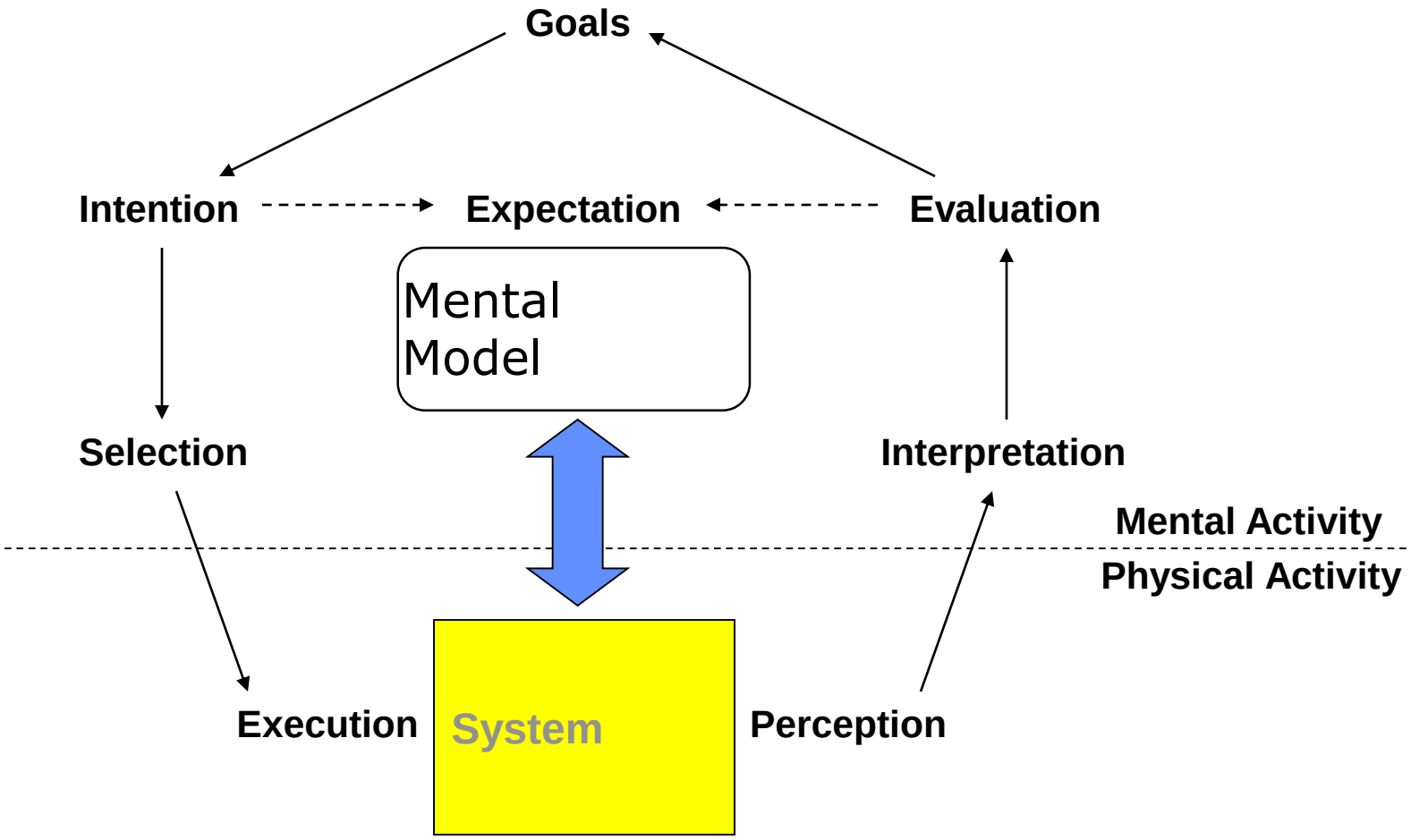
Stages of Interaction



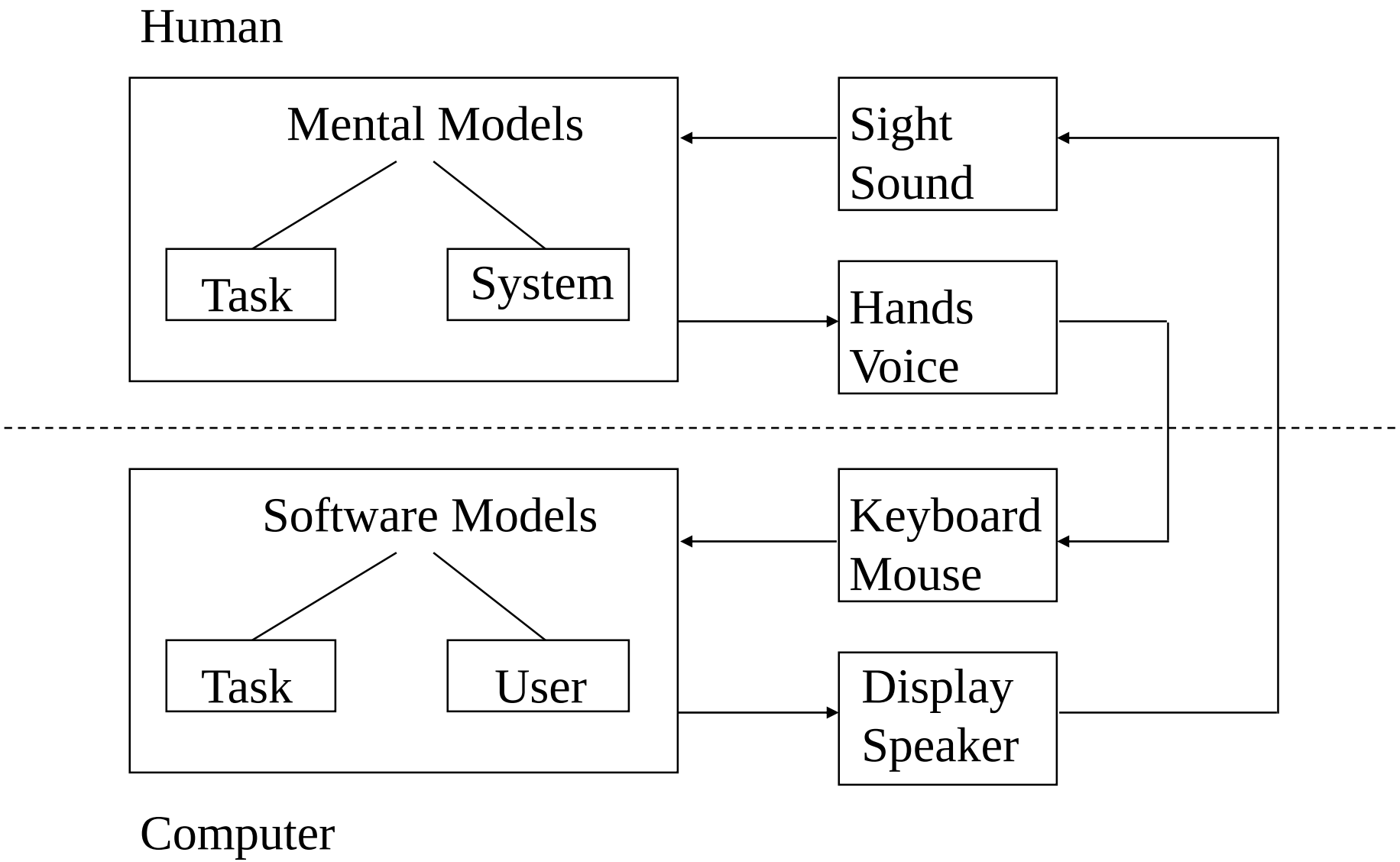
Challenges of HCI



What is good design?



Modeling Interaction



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?