

# DESIGNING USER-ORIENTED WEB PAGES

# ANATOMY OF A WEB SITE

## SERVER

Content (text, multimedia, attributes, ...)

Content structure

Page generator

## CLIENT

SEE

Visual design + content

INTERACT

Navigation

FORM

Queries

---

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Content (text, multimedia, attributes, ...)

**Content structure**

Page generator

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**SEE**

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**Visual design + content**

**Navigation**

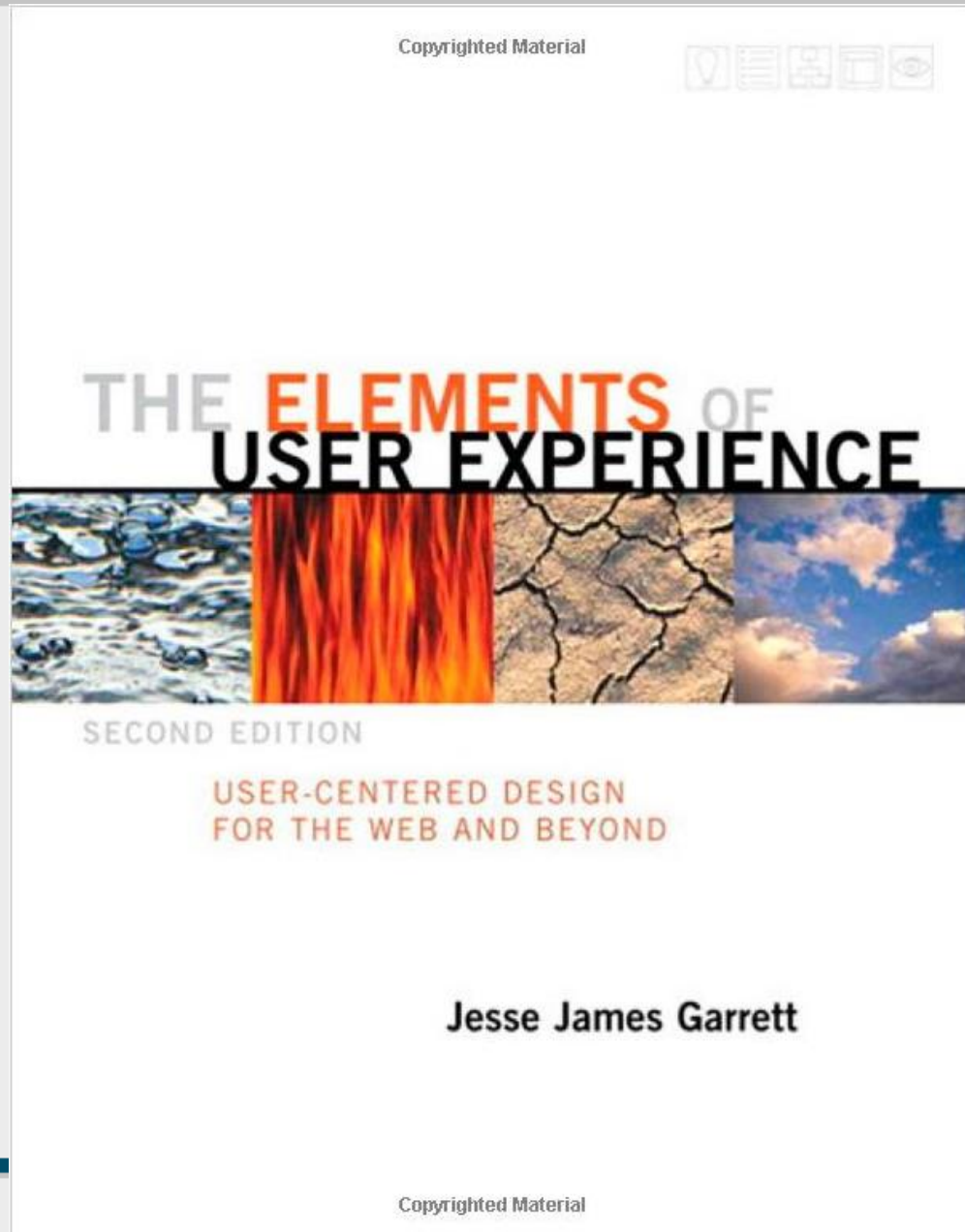
Queries

# REFERENCES:

JESSE JAMES  
GARRETT

THE ELEMENTS OF  
USER EXPERIENCE  
- USER-CENTERED  
DESIGN  
FOR THE WEB

[HTTP://WWW.JJG.NET](http://www.jjg.net)



# REFERENCES:

STEVE KRUG

DON'T MAKE  
ME THINK

- A COMMON SENSE  
APPROACH TO  
WEB USABILITY



A Common Sense Approach to Web Usability

**SECOND EDITION**

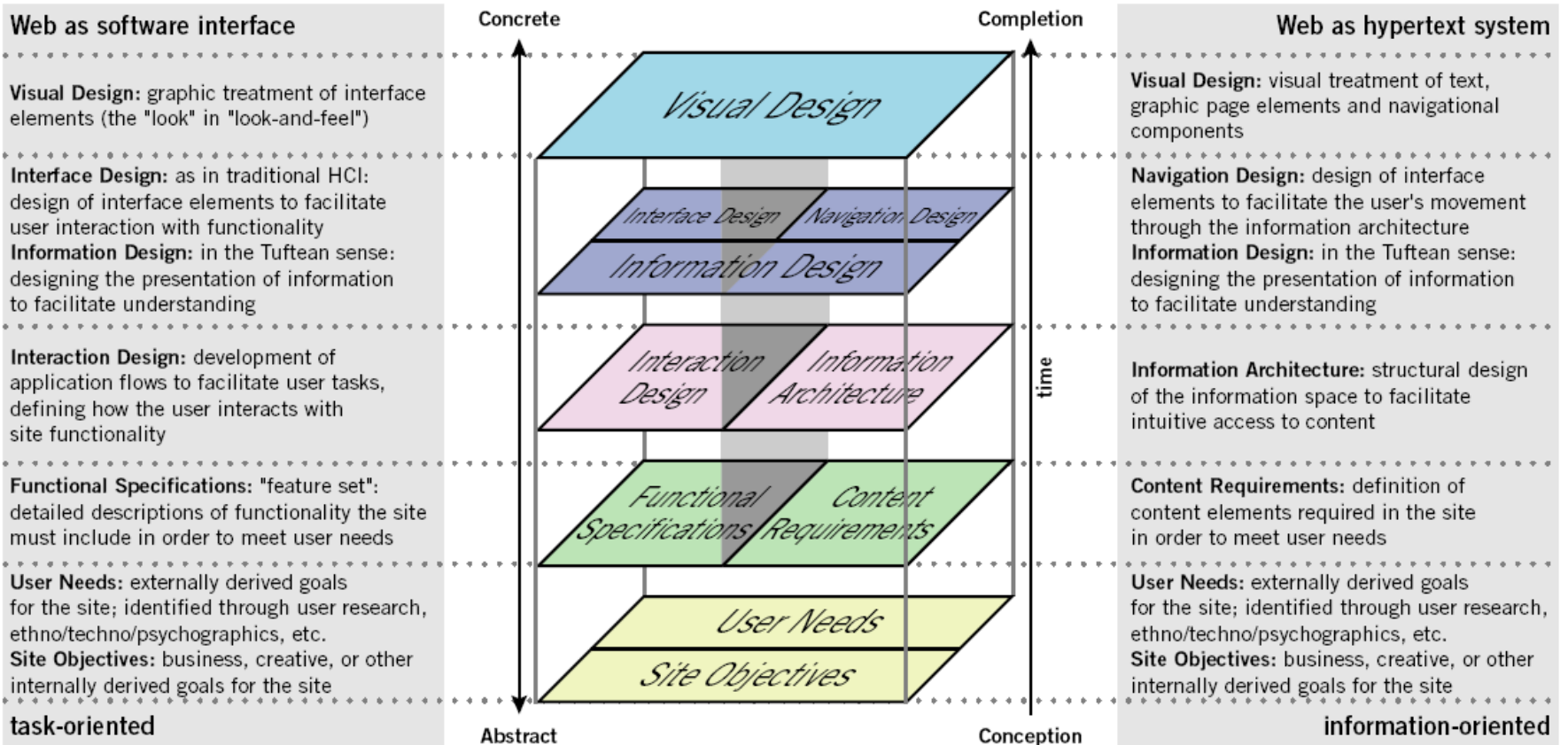
# JESSE JAMES GARRETT

## The Elements of User Experience

Jesse James Garrett  
jig@jig.net

30 March 2000

**A basic duality:** The Web was originally conceived as a hypertextual information space; but the development of increasingly sophisticated front- and back-end technologies has fostered its use as a remote software interface. This dual nature has led to much confusion, as user experience practitioners have attempted to adapt their terminology to cases beyond the scope of its original application. The goal of this document is to define some of these terms within their appropriate contexts, and to clarify the underlying relationships among these various elements.



# STAGE 1: USER NEEDS, SITE OBJECTIVES

# SITE OBJECTIVES

## WHO IS MY TARGET AUDIENCE?

e.g. elderly people

EXTERNAL MOTIVATION

## WHAT ARE MY GOALS?

e.g. teach the elderly to work with computers

INTERNAL MOTIVATION

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# WHO IS MY AUDIENCE?

PSYCHOLOGY,  
SOCIOLOGY,  
CULTURE,  
EDUCATION

Are they patient, motivated,  
experienced, shy, smug,  
picky, independent...?



TECHNICAL SPECIFICS

Bandwidth, display resolution, browser age, interaction options, ...

# WHO IS MY AUDIENCE?

## DIVIDE USERS INTO GROUPS IF NECESSARY

e.g.

- elderly students
- young teachers

Later on, this will become ... *user roles*

## ESTIMATE THEIR DESIRED ACTIONS

e.g.

- contact my teacher
- publish a new tutorial

Later on, this will become ... *user scenarios*

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# WHAT ARE MY GOALS?

## DEFAULT GOALS

e.g. attract (and keep) attention, search engine appreciation, content relevance

## SPECIFY OWN GOALS

e.g. teach old people to use computers

## ALSO SPECIFY EVALUATION CRITERIA

e.g. hit count, user conversion rate ...

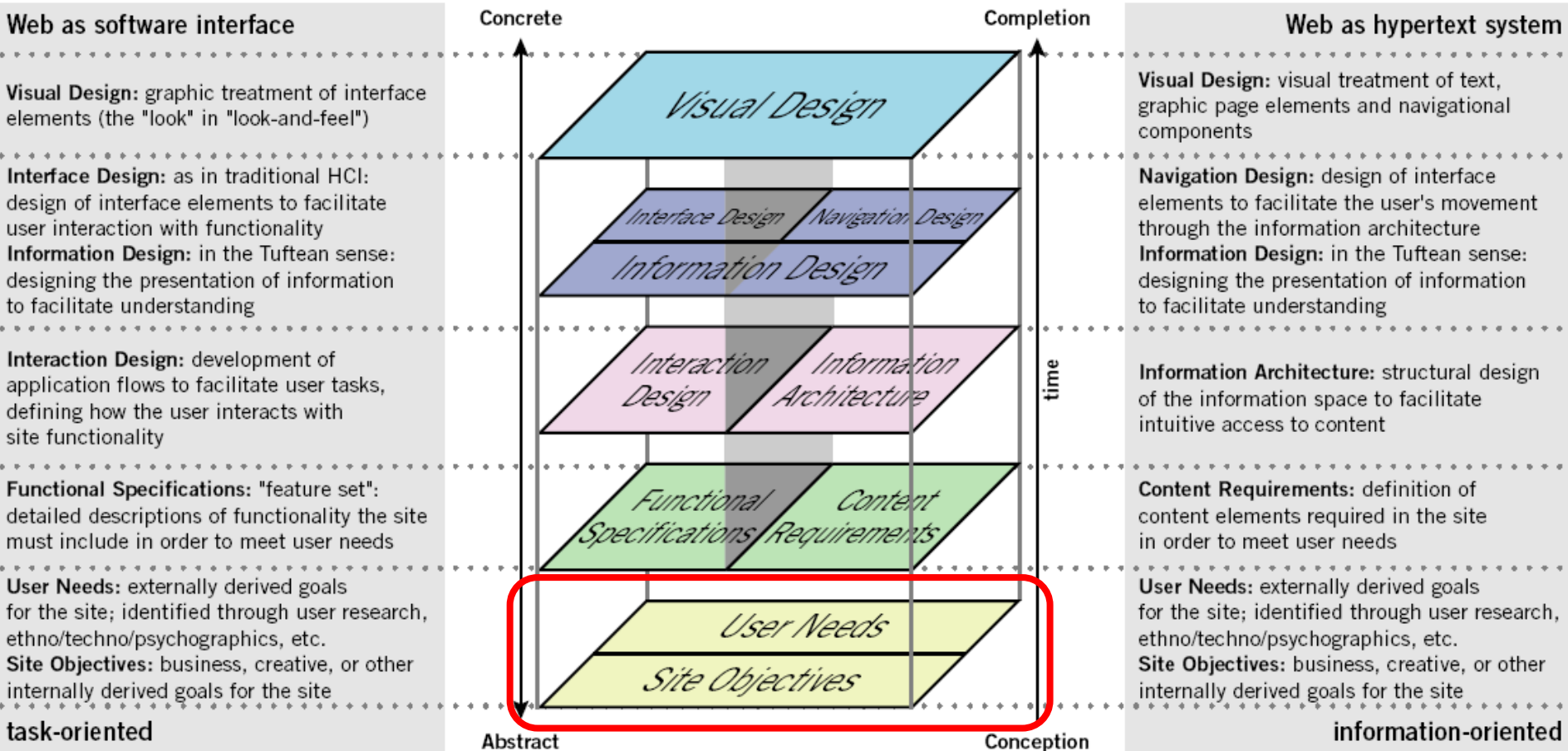
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# STAGE 2: CONTENT REQUIREMENTS

# CONTENT REQUIREMENTS

WHAT NEEDS TO BE SHOWN IN ORDER TO SUCCEED

CONTENT-ORIENTED POINT OF VIEW

e.g. tutorials, troubleshooting, user discussion

TECHNOLOGY-ORIENTED POINT OF VIEW

e.g. videos, screenshots, texts, online chat

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# FUNCTIONAL SPECIFICATION

”FEATURE SET” - DETAILED DESCRIPTIONS OF FUNCTIONALITY THE SITE MUST INCLUDE IN ORDER TO MEET USER NEEDS

e.g. find and display tutorials, start discussions and add to them, directly contact a teacher

MAKE SURE THE FUNCTIONS SATISFY YOUR GOALS

BE CAREFUL IF THEY DIVERT FROM YOUR GOALS

---

# OUTCOMES OF STAGES 1 & 2

DEFINITION OF WHAT THE PAGE WILL BE SHOWING, IN TERMS OF CONTENT AND TECHNOLOGY

LIST OF TASKS THE USERS WILL PURSUE  
External goals

DEFINITION OF MY SUCCESS  
Internal goals

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# FORMAL OUTCOMES

FUNCTIONAL SPECIFICATION

USER ROLES

SITE GOALS

EVALUATION CRITERIA

DISCUSS THIS WITH THE CLIENT

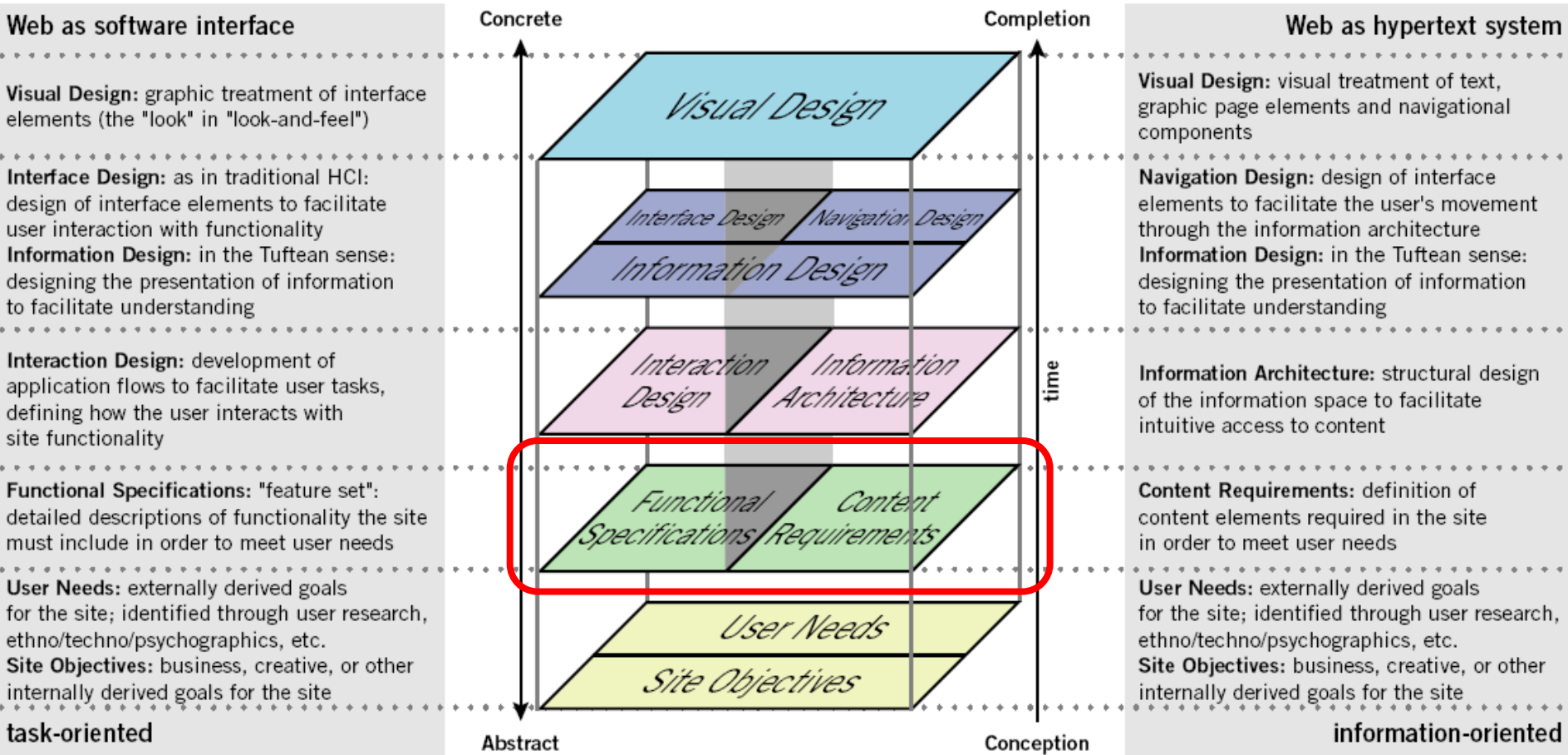
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# STAGE 3: INFORMATION ARCHITECTURE

# WHY STRUCTURE?

INFORMATION IS USELESS  
WHEN NOT ACCESSED

ACCESSING INFORMATION IS A PROCESS

THE SHORTER THE PROCESS,  
THE SAFER THE RESULT

NO STRUCTURE = ARDUOUS RETRIEVAL

---

# HOW TO STRUCTURE?

## BY USER ROLES

e.g. student, teacher, employee ...

## BY USER SCENARIOS

e.g. socialize, learn, express ...

## BY CONTENT SEMANTICS

e.g. textbook chapters

## BY TECHNICAL SPECIFICS

e.g. flash content / html content

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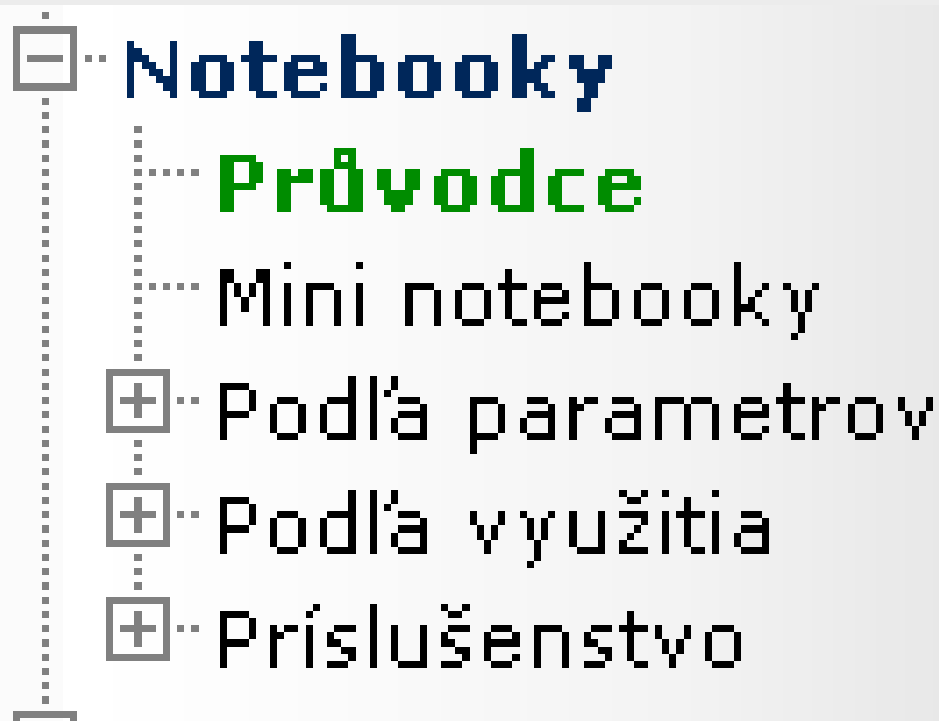
# BAD STRUCTURE

## ► Notebooky

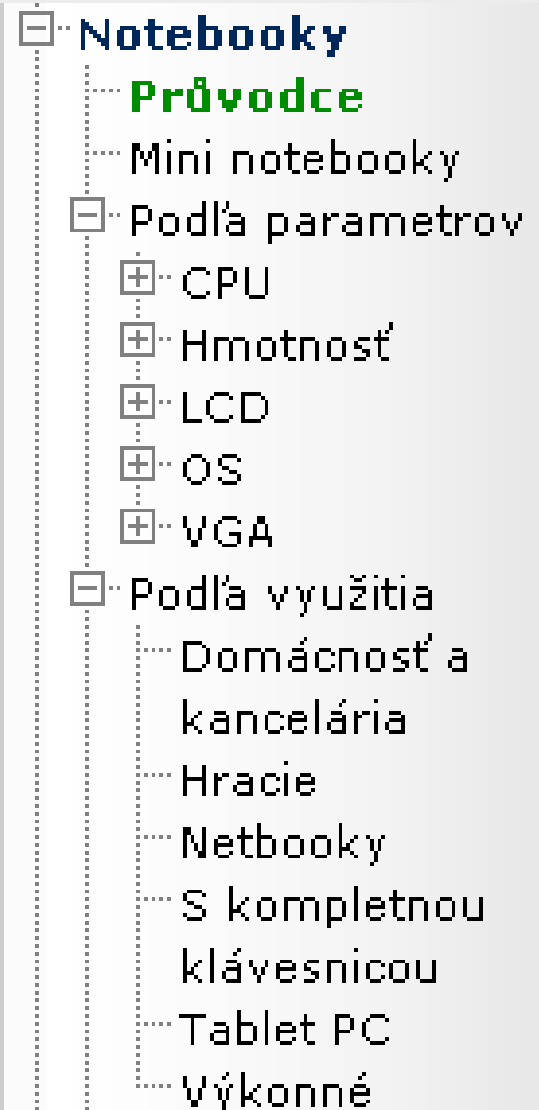
- Intel Atom (1)  
**ASUS**(1)
- Intel Celeron D (1)  
**ASUS**(1)
- Intel Celeron M (11)  
**ACER**(4), **EMACHINES**(5), **HP**(2)
- Intel Celeron Dual Core (8)  
**ACER**(3), **EMACHINES**(1), **HP**(4)
- Intel Single Core (26)  
**ACER**(23), **LENOVO**(3)
- Intel Dual Core (86)  
**ACER**(37), **ASUS**(12), **COMPAQ**(1), **EMACHINES**(5), **LENOVO**(4), **TOSHIBA**(27)
- Intel Core2 Duo (208)  
**ACER**(59), **APPLE**(1), **ASUS**(27), **BENQ**(1), **HP**(66), **LENOVO**(26), **SONY**(19), **TOSHIBA**(9)
- Intel Core2 Quad (7)  
**ASUS**(4), **HP**(1), **LENOVO**(1), **TOSHIBA**(1)

Structure by semantics  
but with wrong  
perspective.

# GOOD STRUCTURE EXAMPLE



Structure by semantics with variable perspective



# BAD STRUCTURE

- **Aktuálne:** Osoby, ktoré získali titul na UK, Promócie 2009
- **O univerzite:** Kontakt, Orgány univerzity, Súčasti univerzity, Rektorát, Legislatíva, Univerzitný časopis,
- **Štúdium:** AIS2 - Akademický informačný systém, Info o možnostiach štúdia, Organizácia štúdia na UK, I
- **Veda:** Centrá excelentnosti UK, Vedecké projekty a granty, Publikačná činnosť pracovníkov UK, ...
- **Služby:** Služby Akademickej knižnice UK, Študijná literatúra z produkcie VUK, Sociálne zabezpečenie, P diplomov a iných dokladov, ...
- **Medzinárodné vzťahy:** LLP/Erasmus, LLP/Erasmus Students' Application Form, Partnerské univerzity v
- **Linky:** Významné pre vysoké školy, Cestovné poriadky

STRUCTURE BY .... GOD KNOWS WHAT.  
Semantics? If yes, then what perspective?



# GOOD STRUCTURE EXAMPLE



## STRUCTURE BY USER ROLES

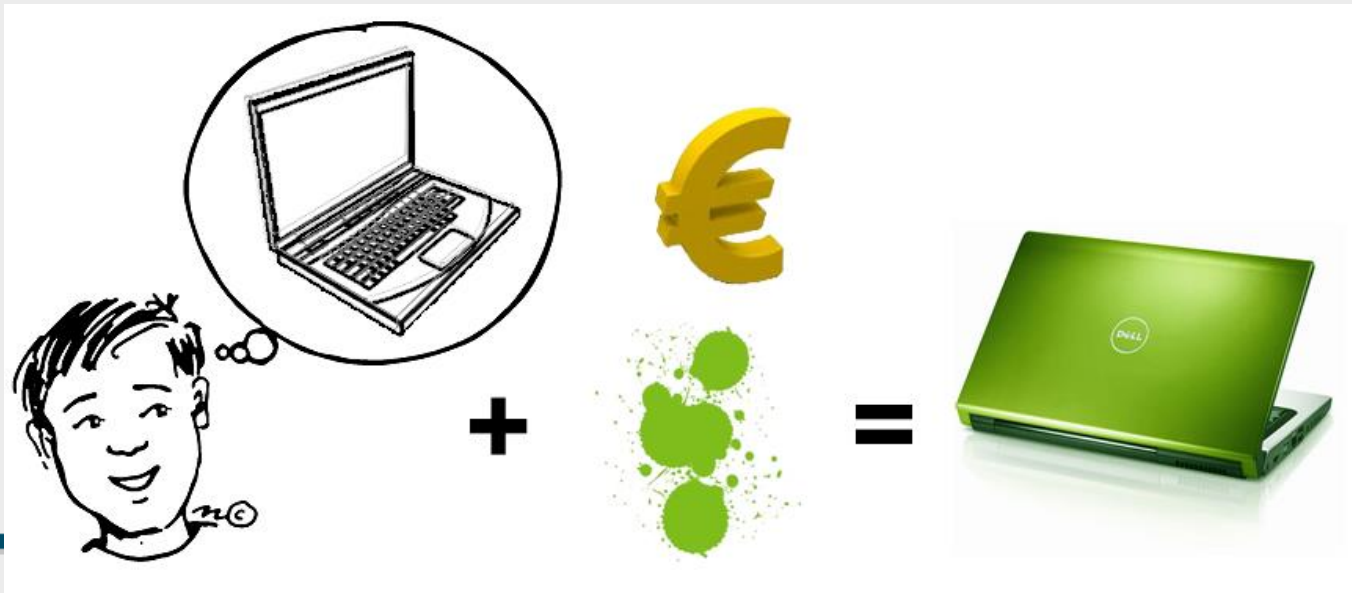
Warning: not always a good idea  
Can you think of such cases?

# INFORMATION ARCHITECTURE

BRINGS ORDER INTO CHAOS

CONTENT ORGANIZATION

SUPPORTS INFORMATION RETRIEVAL BY  
PROVIDING INTUITIVE ACCESS TO INFORMATION



# MEANS OF STRUCTURING

## HIERARCHY

Trees, forests

## GROUPS

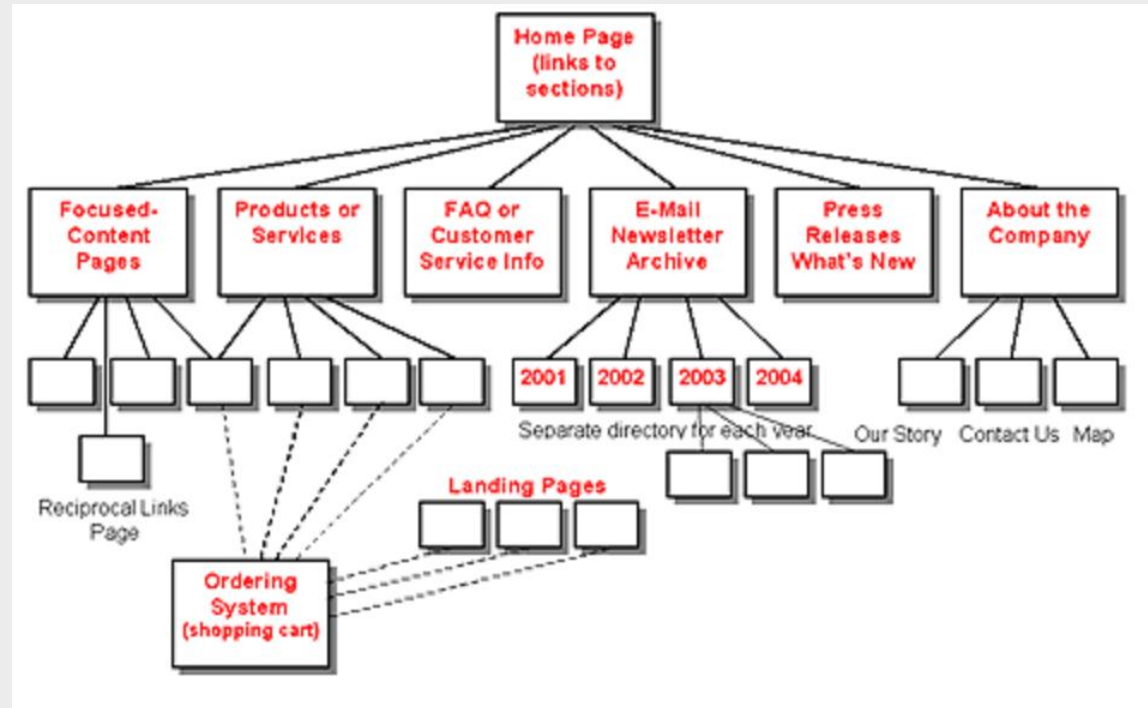
Tags, labels

## MATRIX

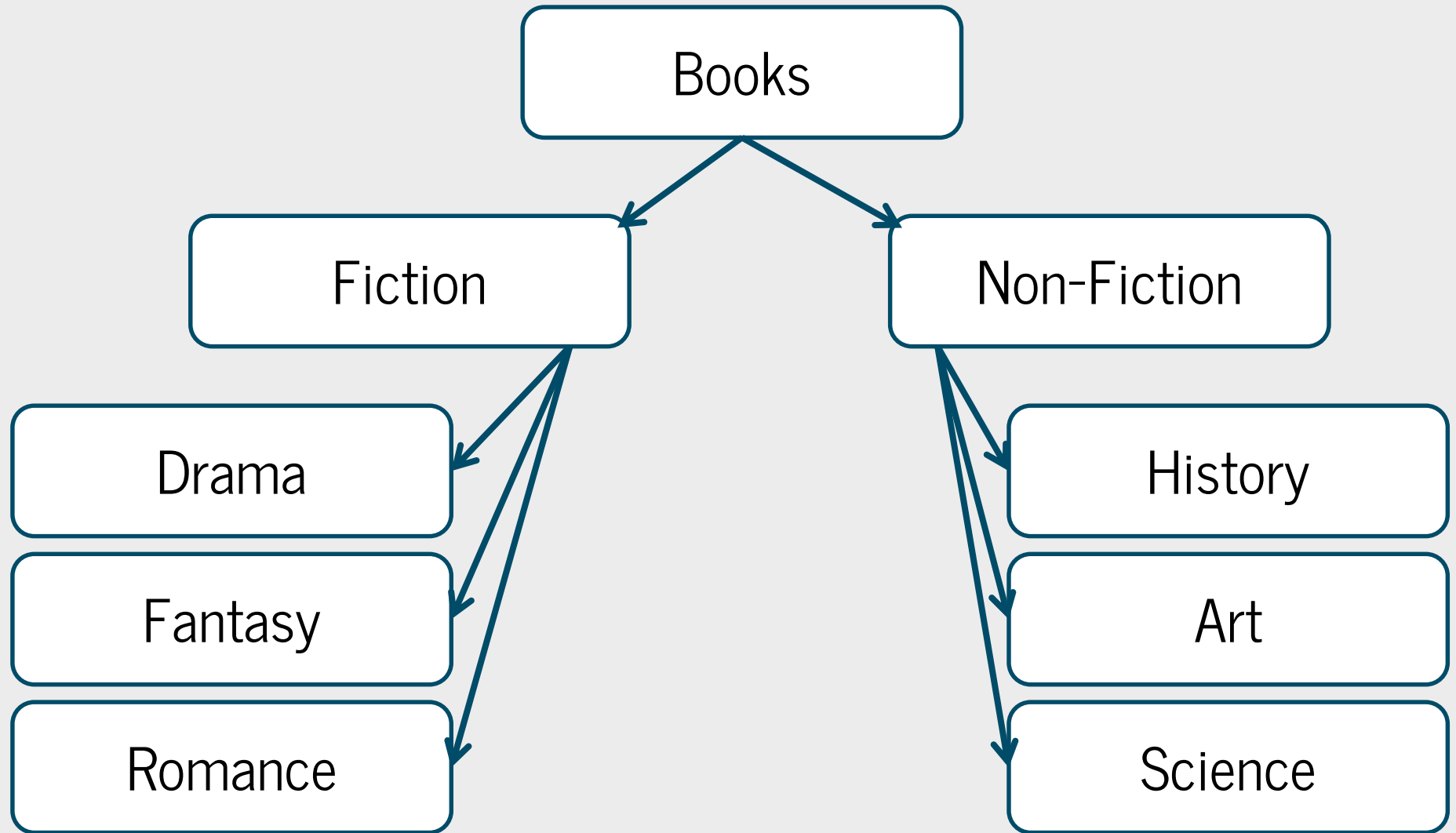
Orthogonal criteria

## SEQUENCE

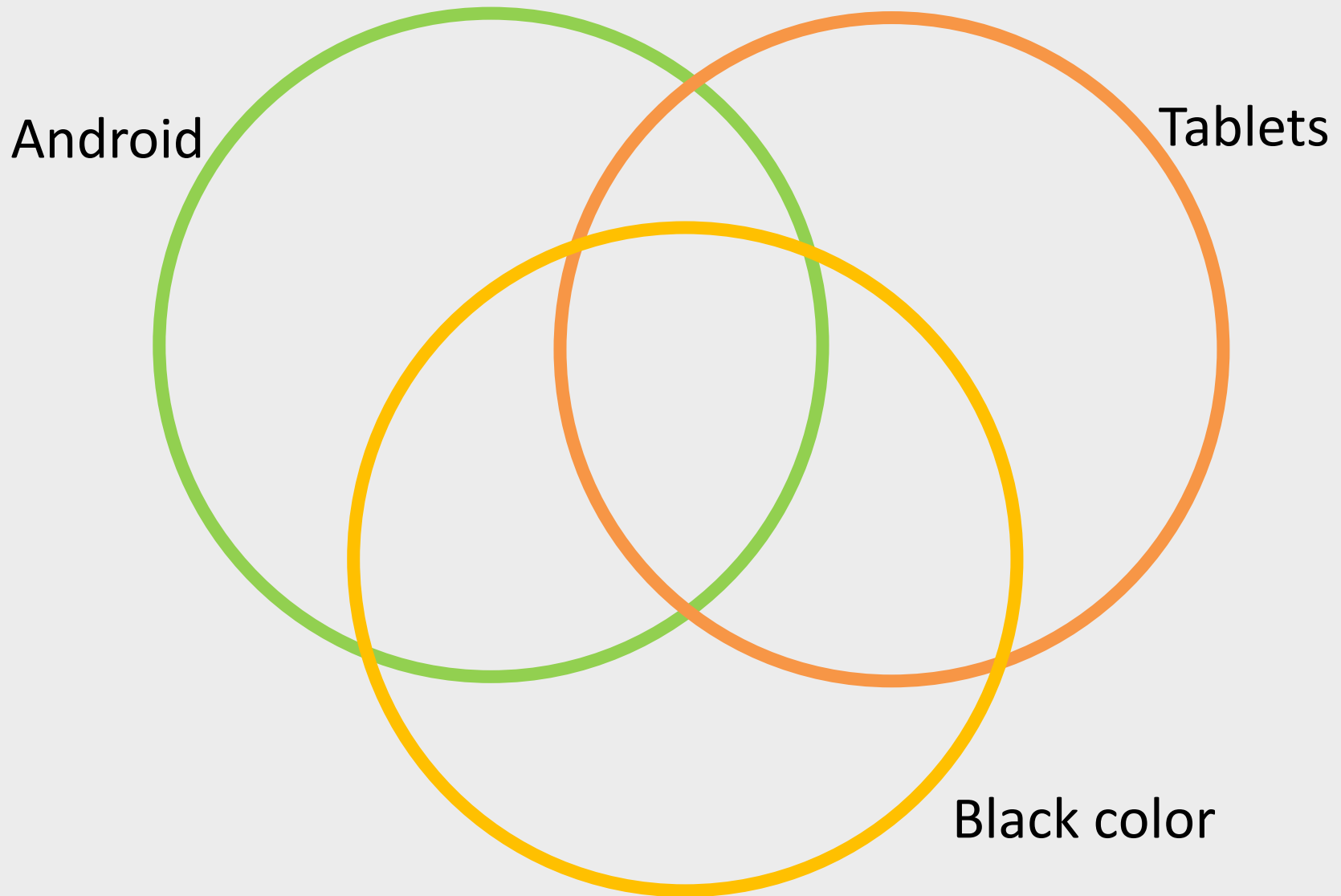
Time



# HIERARCHY



# GROUPS, TAGS



# MATRIX

## Eiffel Tower

## Statue of Liberty

## Petronas towers

### Photos



### Text

The *Eiffel Tower* is an iron lattice tower located on the Champ de Mars in Paris, named after the engineer Gustave Eiffel, whose company designed and built the ...

The Statue of Liberty (Liberty Enlightening the World; French: La Liberté éclairant le monde) is a colossal neoclassical sculpture on Liberty Island in New York ...

The *Petronas Towers*, also known as the Petronas Twin Towers (Malay: Menara Petronas, or Menara Berkembar Petronas) are twin skyscrapers in Kuala ...

### Technical data

Height	
Antenna spire	324.00 m (1,063 ft)
Roof	300.65 m (986 ft)
Top floor	273.00 m (896 ft)
Technical details	
Floor count	3
Elevators	9

<b>Height</b>	151 feet 1 inch (46 meters)
	Ground to torch: 305 feet 1 inch (93 meters)

Height	
Architectural	451.9 m (1,483 ft) <sup>[1]</sup>
Roof	378.6 m (1,242 ft)
Top floor	375 m (1,230 ft) <sup>[1]</sup>
Technical details	
Floor count	88 (+5 basement floors) <sup>[1]</sup>
Floor area	395,000 m <sup>2</sup> (4,252,000 sq ft)
Elevators	78

# (MULTI-)SEQUENCE

John's blog post #1



John's blog post #2



John's blog post #3



John's blog post #4



John's blog post #5

Mary's blog post #1



Mary's blog post #2



Mary's blog post #3



Mary's blog post #4

# STRUCTURE IMPLIES INTERACTION

INFORMATION RETRIEVAL BY USER QUERIES

TOWARDS INTERACTION DESIGN

Application flow

How the user will accomplish his/her tasks

How the user will interact with site functionality

WHAT ACTIONS HAVE TO BE AVAILABLE IN ORDER TO NAVIGATE THE STRUCTURE?

E.g. hierarchical structure implies navigation by picking, tags imply text search ...

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# OUTCOMES OF STAGE 3:

DEFINITION OF CONTENT STRUCTURE

POSSIBLE LIMITS OF STRUCTURE DEPTH/WIDTH

ATTRIBUTES OF CONTENT ITEMS

MEANS OF ACCESSING THE CONTENT

DISCUSS THIS WITH DATABASE DESIGNERS AND PROGRAMMERS

---

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## Web as software interface

**Visual Design:** graphic treatment of interface elements (the "look" in "look-and-feel")

**Interface Design:** as in traditional HCI: design of interface elements to facilitate user interaction with functionality

**Information Design:** in the Tuftean sense: designing the presentation of information to facilitate understanding

**Interaction Design:** development of application flows to facilitate user tasks, defining how the user interacts with site functionality

**Functional Specifications:** "feature set": detailed descriptions of functionality the site must include in order to meet user needs

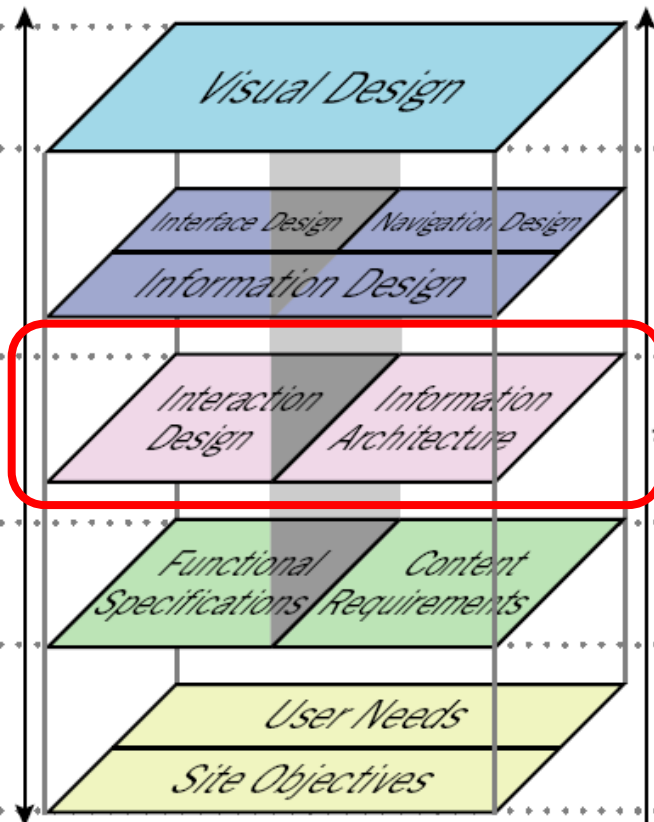
**User Needs:** externally derived goals for the site; identified through user research, ethno/techno/psychographics, etc.

**Site Objectives:** business, creative, or other internally derived goals for the site

task-oriented

Concrete

Completion



Abstract

Conception

## Web as hypertext system

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# STAGE 4: INTERFACE AND NAVIGATION

# INTERFACE

CONNECT THE USER TO THE CONTENT

DEFINE HOW THE CONTENT IS DISPLAYED

Content interface

CONNECT THE USER TO THE FUNCTIONALITY

WHICH INTERACTION OPTIONS ARE PROVIDED

DEFINE THE LOGIC OF THE INTERACTION

Navigation

---

# CONTENT INTERFACE

## WHAT CONTENT ELEMENTS ARE SHOWN

e.g.

article headline + teaser image,  
full article + feature pictures.

## OTHER CONTENT ELEMENTS

e.g.

links to related articles,  
recent content...

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# NAVIGATION - HIERARCHIES

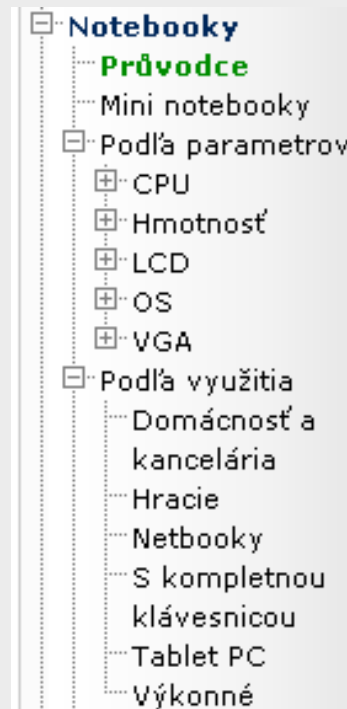
PULL-DOWN MENUS

TREE MENUS

TABS

MEGA DROPDOWN

SHOW ALL



**Top Služby**

- Autobazár
- Autoviny
- Baby-web
- Byvanie
- Cestovanie
- Cest. poriadky
- Detský web
- Dievča dňa
- E-mail
- Feminity
- Financie
- Mapy
- Obchody
- Online Hry
- ožene
- Práca
- Reality
- Slovník
- Spravodajstvo
- Šport
- Telefónny zoznam
- Urob si sám
- Video, foto<sup>beta</sup>
- Web zadarmo

**Topky** | **Domáce** | **Zahraničné** | **Prominenti** | **Šport** | **ožene**

**Klaus podpísal a dodal: Česko nie je suverénne**

- Pri výstavbe R1 objavili 300 hrobov!
- Pedofílovi odtnú hlavu a ukrížuju ho
- VIDEO Fico: prognózy, Mikloš: neschopnosť

**Hemingwayova pravnučka: Ukázala prsník!**

- Assimakopoulos si najsčor užíval s Cibulkovou a teraz... Zapíja syna!
- Juraj Mokry: Zhrabol lukratívny moderátorský kšeft!
- Speváčka Jamelia: Rozvod po 17 mesiacoch!

**Drogbove góly Chelsea stačili iba na remízu**

- Medzi prvými postupujúcimi aj Chelsea s ManU
- SP: Dunajská Streda vyhrala nad Moldavou 3:0
- Hokejisti Slovenska v príprave na Nemecký pohár

Vyhraj 500 € | FERRARI 612 | DVD Bathory

**Katalóg** | Pridaj firmu zadarmo | Pridaj stránku

A B C D E F G H I J K L M N O P R S T U V Z

**Auto-moto, preprava, logistika**  
Bazáre, Autodoplnky, Servisy, ND, Pneumatiky, disky, Preprava

**Cestovanie, ubytovanie, turizmus**  
Cestopisy, Krajiny, Ubytovanie

**Domácnosť, záhrada, kancelária**  
Biele technika, Kancelária, Nábytok, Záhradkárstvo

**Financie, právo, podnikanie**  
Advokáti, Banky, Dane, Poistovne,

**Reštaurácie, stravovanie**  
Donáška, Potraviny, Reštaurácie

**Služby a remeslá**  
Kvetinárstva, Práca, Pre dospelých, Umelecké remeslá

**Spoločnosť, veda, príroda**  
EU, Náboženstvo, Politika

**Spravodajstvo, informácie**  
Časopisy, Denná tlač, Inzercia

**Stavba, dom, dielňa**

Home | **Product Info** | Samples | Purchase | Contact Us

Ajax dhtml  
It saves ou  
Move you p  
You will se

Features  
Installation  
Parameters Info  
Dynamic Functions  
Supported Browsers

How To Setup  
Description of Files  
ITO "Samples" items.  
while the sub menu is loading from the server.

from the server "on-the-fly".  
when you use big menus.

Supported browsers:  
Windows OS: IE5+, Firefox, Mozilla, Netscape 7+, Opera 8+  
MAC OS: Firefox, Safari

# NAVIGATION – TAGGED GROUPS

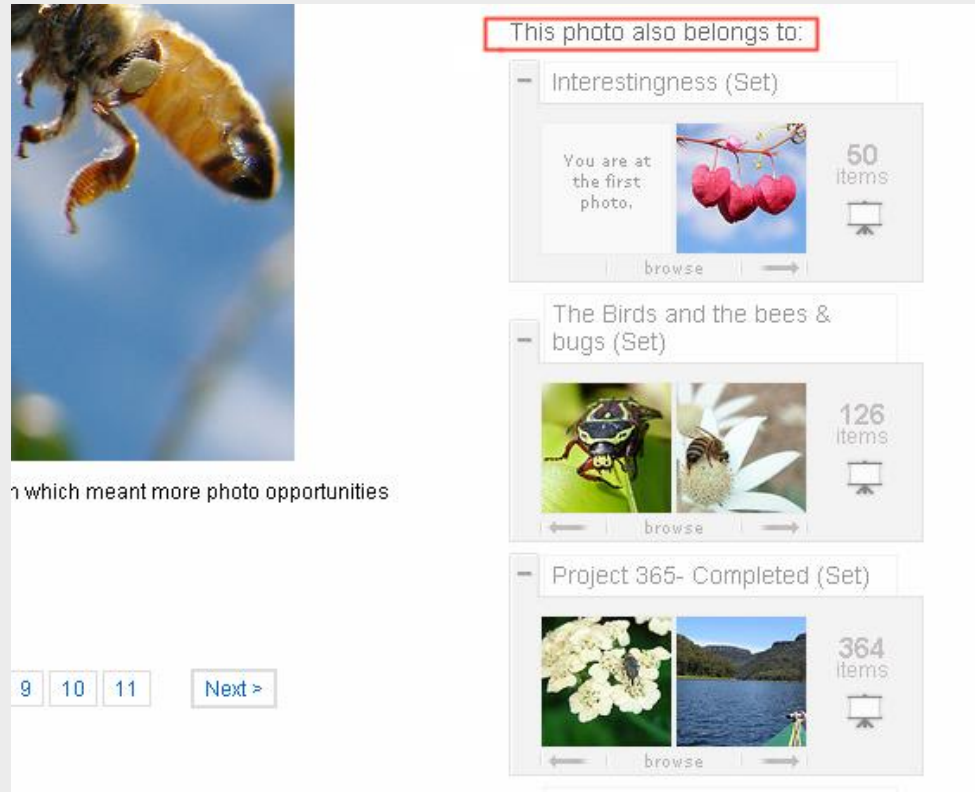
## FLOW NAVIGATION

Start with one content item

Continue to others in the same group

Groups may overlap

Content decomposition into non-disjoint groups



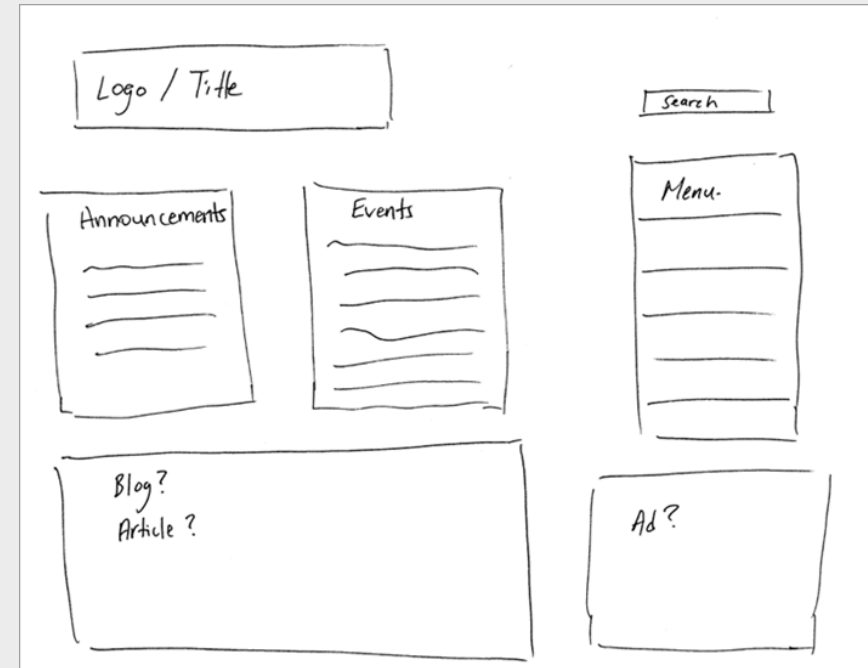
The screenshot displays a photo gallery interface. On the left, a large photo of a bee is shown. Below it, the text "which meant more photo opportunities" is visible. At the bottom left, there are navigation buttons for pages 9, 10, and 11, with "10" selected, and a "Next >" button. On the right, a red-bordered box highlights the text "This photo also belongs to:". Below this, three overlapping "Set" cards are shown, each with a "browse" button and a "next" arrow. The first card is titled "Interestingness (Set)" and contains a photo of red cherries, with the text "You are at the first photo." and "50 items". The second card is titled "The Birds and the bees & bugs (Set)" and contains two photos: a beetle and a bee on a flower, with "126 items". The third card is titled "Project 365- Completed (Set)" and contains two photos: white flowers and a lake, with "364 items".

# OUTCOMES OF STAGE 4:

WHAT IS SHOWN

HOW IT'S ACCESSED

WEB PAGE WIREFRAME



DON'T BOTHER WITH  
THE VISUAL APPEARANCE NOW

DISCUSS THIS WITH TEST SUBJECTS



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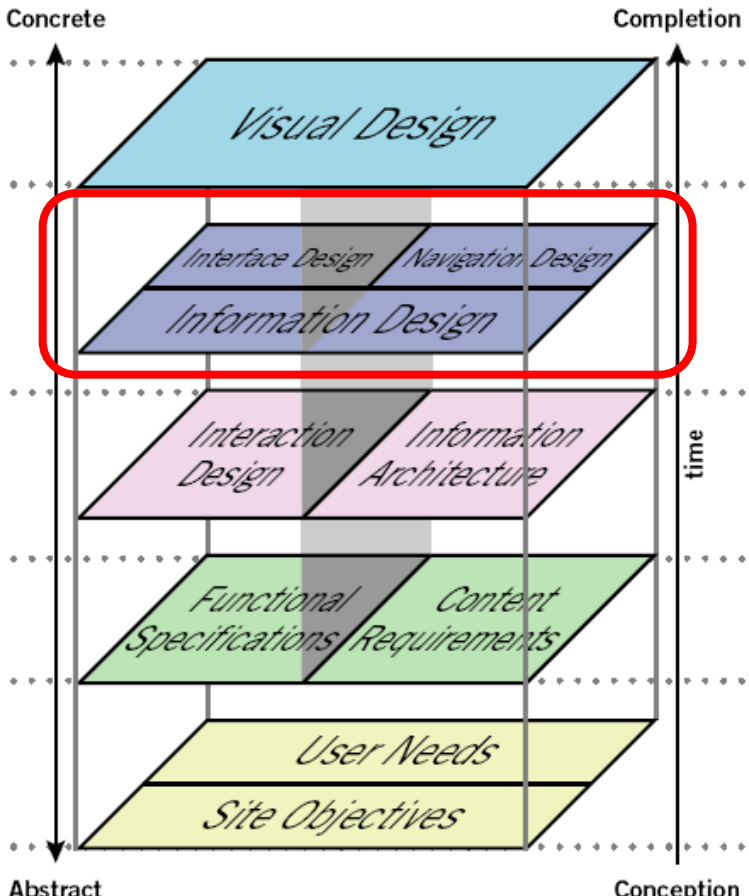
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# **STAGE 5: VISUAL DESIGN**

# LOOK AND FEEL OF THE SITE

LAYOUT

TYPOGRAPHY

COLORS

MODIFICATIONS

Subpages, low-res version, mobile version, etc..

MORE ON THIS NEXT TIME

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# OUTCOMES OF STAGE 5

## GRAPHICAL DESIGN

Sketches, previews, slices, implemented design

DISCUSS THIS WITH TEST SUBJECTS

DISCUSS THIS WITH THE CLIENT

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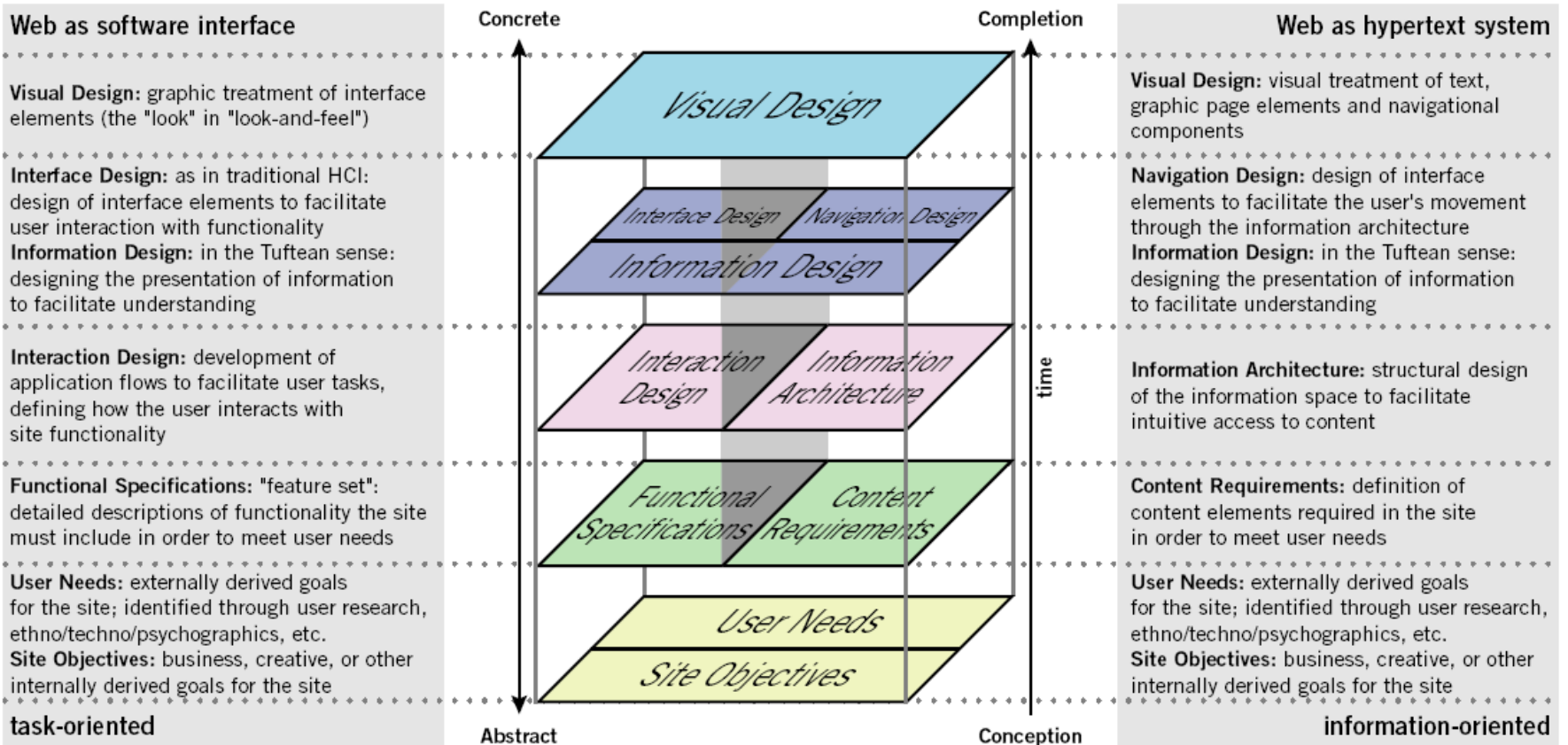
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# WHY NOT THE OTHER WAY ROUND

## STARTING WITH VISUAL DESIGN?

restrictions on user interface

restrictions on information architecture

## STARTING WITH INFORMATION ARCHITECTURE?

some goals/tasks might turn out impossible

## STARTING WITH FUNCTIONAL SPECIFICATION

might not match information architecture

---

# TAKE HOME MESSAGES

USER'S NEEDS AND OWNER'S GOALS  
COME FIRST

BUILD THE WEBPAGE  
FROM ABSTRACT TOWARDS CONCRETE

KEEP THE USER NEEDS AND SITE GOALS  
IN MIND AT ALL TIME

DISCUSS WITH OTHER PROJECT PARTICIPANTS

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