New ICT Technologies

Digital User Experience

Prof. ssa Romina Eramo
Università degli Studi di Teramo
Dipartimento di Scienze della Comunicazione
reramo@unite.it

What is User Experience?

» *Definition:* **User experience (UX) is the relationship between users and the things they interact with, starting from a human-first point of view.**

- UX is concerned with making things intuitive, easy, relevant and enjoyable to use.
- It also seeks to understand the psychological, cognitive and contextual factors that influence that outcome.
- UX designers work to help the things we use make sense to us and maximise their usefulness and usability in our lives.

https://www.qualtrics.com/uk/experience-management/customer/user-experience

What is User Experience?

» The Interaction Design Foundation describes user experience design in terms of the What, Why and How of product use.

- Why? What does the user want from the product? What are their motivations for engaging with it? What tasks do they want to accomplish, and what outcomes are they working towards?
- What? What should the functionality of the product be? What features will it include?
- How? How will the product's features and functions be designed so that it's aesthetically pleasing and accessible to its user?

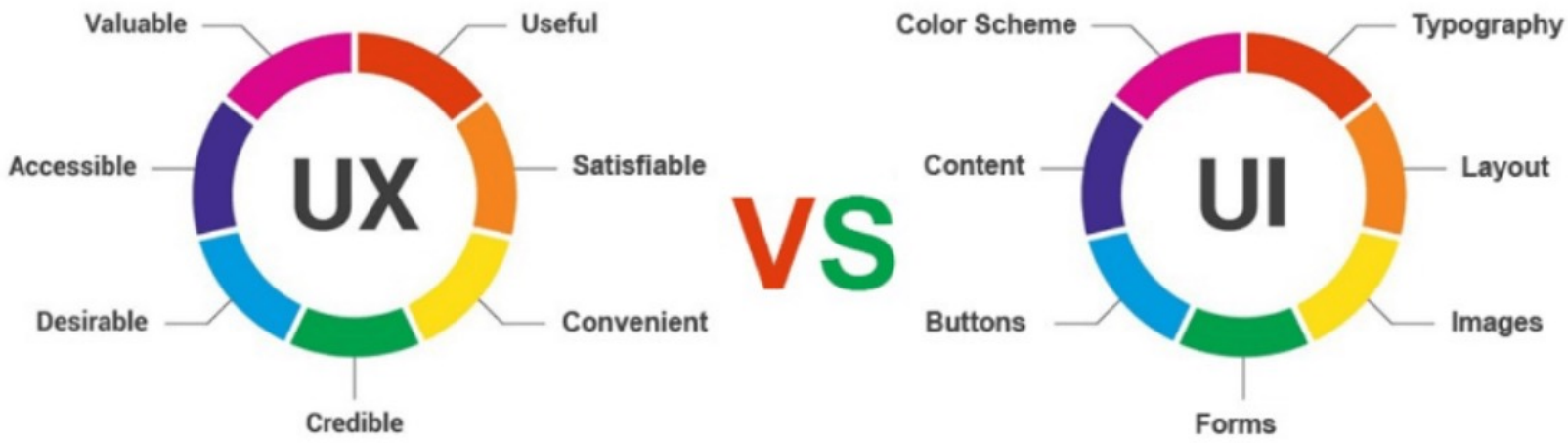
https://www.interaction-design.org/literature/topics/ux-design

What's the difference between UI and UX?

» User experience (UX) covers users' entire interactions with a brand, as well as its products and services.

» User interface (UI) encompasses how a user might specifically interact with software, computer systems or apps through buttons, screens, and other visual elements.

→ UI design changes can impact (and improve) UX!!



What is digital UX?

» While UX isn't exclusively concerned with technology, digital UX is a huge part of the field and also the arena in which UX design has, for the most part, been developed and pioneered.

» UX can be considered a truly digital-first industry, since it has developed in tandem with the internet and the digital landscape where we now live and work.

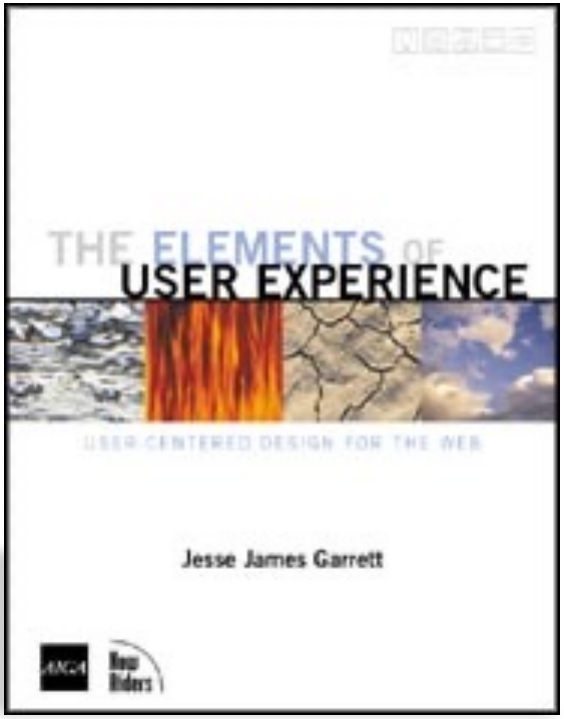
» Digital UX concerns with optimising online experiences and the human interfaces of digital technologies – the places where humans and machines meet.

What is digital UX?

» Because of the investment in and focus on UX work in digital fields, it's a job that's often broken down into a number of roles and responsibilities within a team:

- **UX researchers** are experts in defining user needs and carrying out user research
- **UX designers** define requirements, create personas, and develop wireframes and prototypes
- **UX writers** focus on using language to improve user experiences
- **UI designers** create the look and feel of websites and apps using visual design
- **Interaction designers** help businesses create user-focused experiences on a product or service level
- **Service designers** carry out high-level analysis and planning of end-to-end user journeys, taking into account people, technologies, processes, and business strategies

References



http://jjg.net/ia/visvocab

Outline

» Elements of User Experience

» Navigation Model

» Wireframes

Everyday Miseries (1)

» You wake up to sunlight streaming in your window and wonder why your alarm clock hasn't gone off yet. You look over to see that your clock thinks it's 3:43 a.m. You stumble out of bed to find another clock, which tells you that you can still make it to work on time—if you leave in 10 minutes

» You turn on the coffeemaker and hustle to get dressed, but when you go to retrieve your dose of life-sustaining caffeine, there's no coffee in the pot. No time to figure out why—you've got to get to work!

Everyday Miseries (2)

» You get about a block from your house when you realize that the car needs gas. At the gas station, you try to use the one pump that takes credit cards, but this time it won't accept yours. So you have to go inside and pay the cashier, but first you have to wait in line while the cashier very slowly helps everyone in front of you!

» You have to take a detour because of a traffic accident, so the drive takes longer than you expected. It's official: Despite all your efforts, you are now late for work. Finally, you make it to your desk. You're agitated, harried, weary, and irritable — and your day hasn't even really started yet. And you still haven't had any coffee

Events

» **Accident**: driver took his eyes off the road for a moment to turn the radio down

» **Register**: the cash register was complex and confusing

» **Pump**: nothing on the pump indicated which way the card should be turned

» **Coffeemaker**: didn't make coffee because you didn't push down the power button all the way

» **Clock**: The time was wrong because your cat stepped on the clock in the middle of the night and reset it for you

User Experience (1)

» The experience the product creates for the people who use it in the real world

» When a product is being developed, people pay a great deal of attention to **what** it does

» User experience is the other, often overlooked, side of the equation— **how** it works — that can often make the difference between a successful product and a failure

» UX is about how it works on the outside, where a person comes into contact with it

User Experience (2)

» From Wikipedia

» It refers to a person's emotions and attitudes about using a particular product, system or service. It includes the practical, experiential, affective, meaningful and valuable aspects of human–computer interaction and product ownership. Additionally, it includes a person’s perceptions of system aspects such as utility, ease of use and efficiency.

User Experience (3)

» From Wikipedia (ita)

» Per esperienza d'uso s'intende ciò che una persona prova quando utilizza un prodotto, un sistema o un servizio. L'esperienza d'uso concerne gli aspetti esperienziali, affettivi, l'attribuzione di senso e di valore collegati al possesso di un prodotto e all'interazione con esso, ma include anche le percezioni personali su aspetti quali l'utilità, la semplicità d'utilizzo e l'efficienza del sistema.

» L'esperienza d'uso ha una natura soggettiva perché riguarda i pensieri e le sensazioni di un individuo nei confronti di un sistema; inoltre è dinamica dal momento che si modifica nel tempo al variare delle circostanze

User Centered Design

» The practice of creating engaging, efficient user experiences is called user-centered design

» The concept of user-centered design is very simple

» Take the user into account every step of the way as you develop your product

DESIGN??

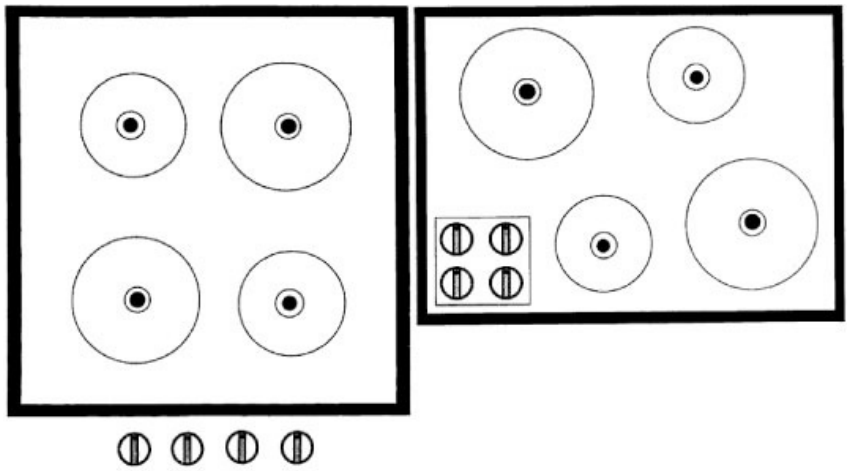
» The etymology of design goes back to the Latin

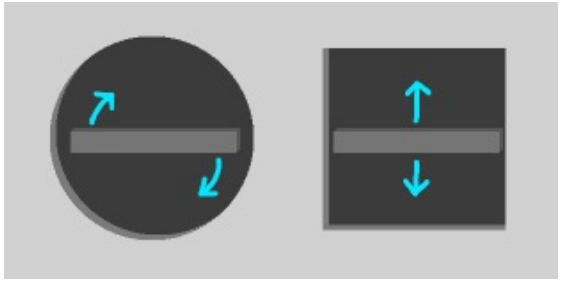
DE + SIGNARE

» to do something, to distinguish it with a sign, give it meaning, designate it in relation to other things, owners, users

» Based on this original meaning, you can say, design is making sense (of things)
Klaus Krippendorff, 1989

DESIGN is universal





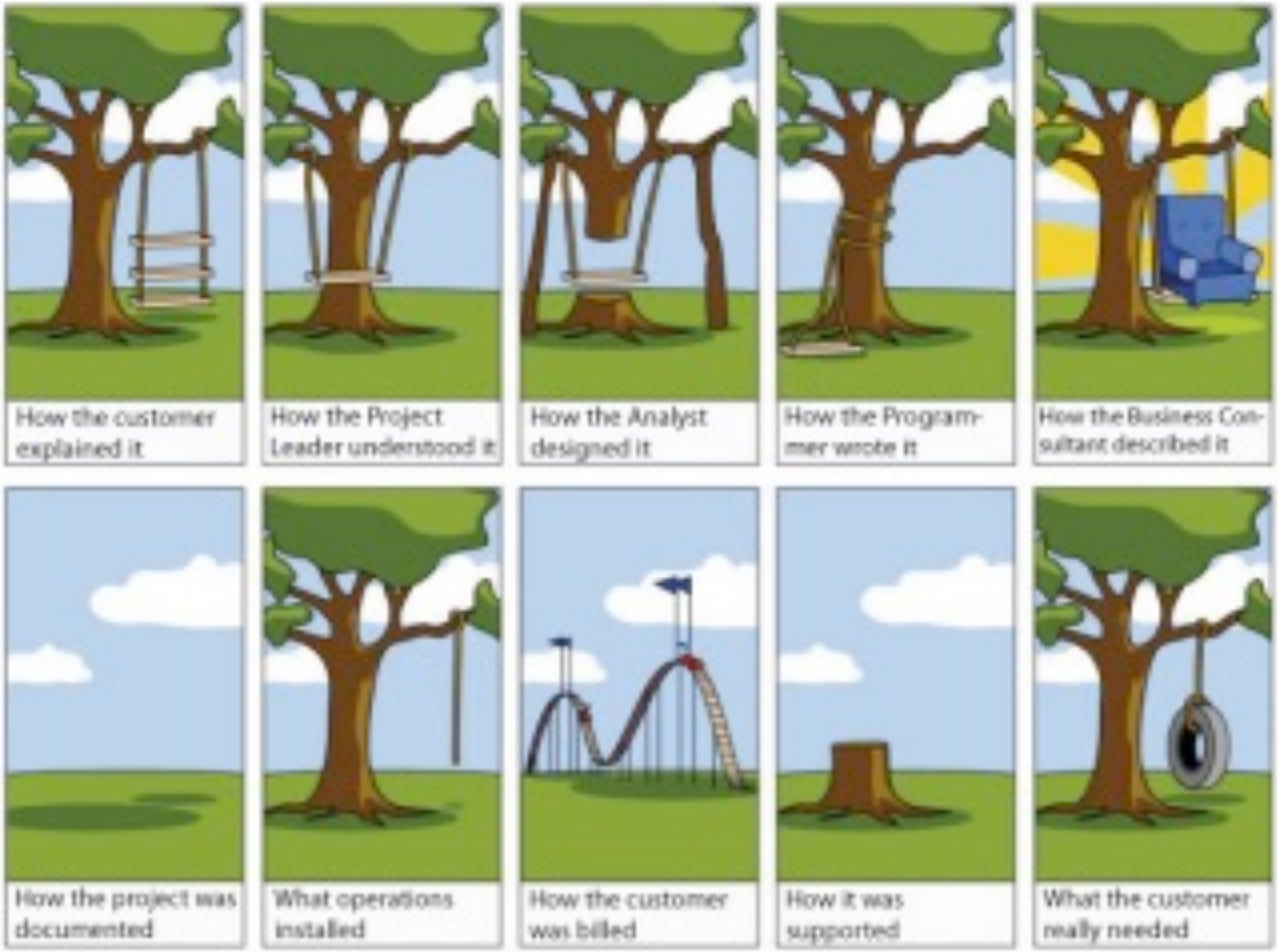
Good design?

» The visual part of a design is only the tip of the iceberg

» Foundation of a successful design
- user-centered design
- Process (UCD)

http://paznow.s3.amazonaws.com/User-Centred-Design.pdf

A World without User-Centered Design…



Definition of UCD (from Wikipedia)

» User Centered-Design (UCD) is …

“a design philosophy and a process in which the needs, wants, and limitations of the end user of an interface or document are given extensive attention at each stage of the design process”

More formally…

» UCD is a **development cycle** which takes into consideration what users really need and makes **adjustments** by exploring, testing and tuning the design until these needs are satisfied

» The result of this is a **high level of usability**

UCD is Universal

» UCD can be applied to all design practices that have the aim to provide a good user experience

» Example

- websites
- architecture
- magazines
- graphics
- …

UCD is a process

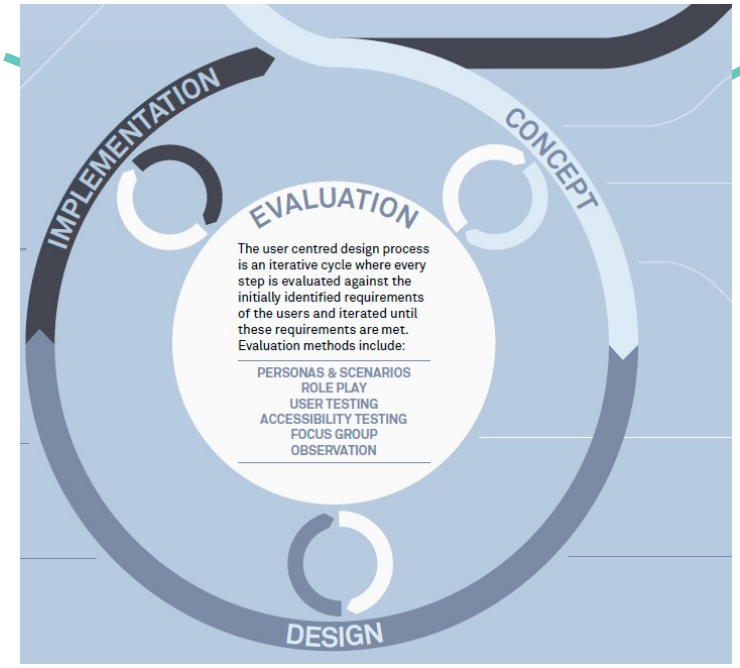
» Designers have to

- **analyze** and **foresee** how users are likely to use an interface
- **test** the validity of their assumptions in real world tests with actual users

UCD Process

Analysis & Planning

Launch

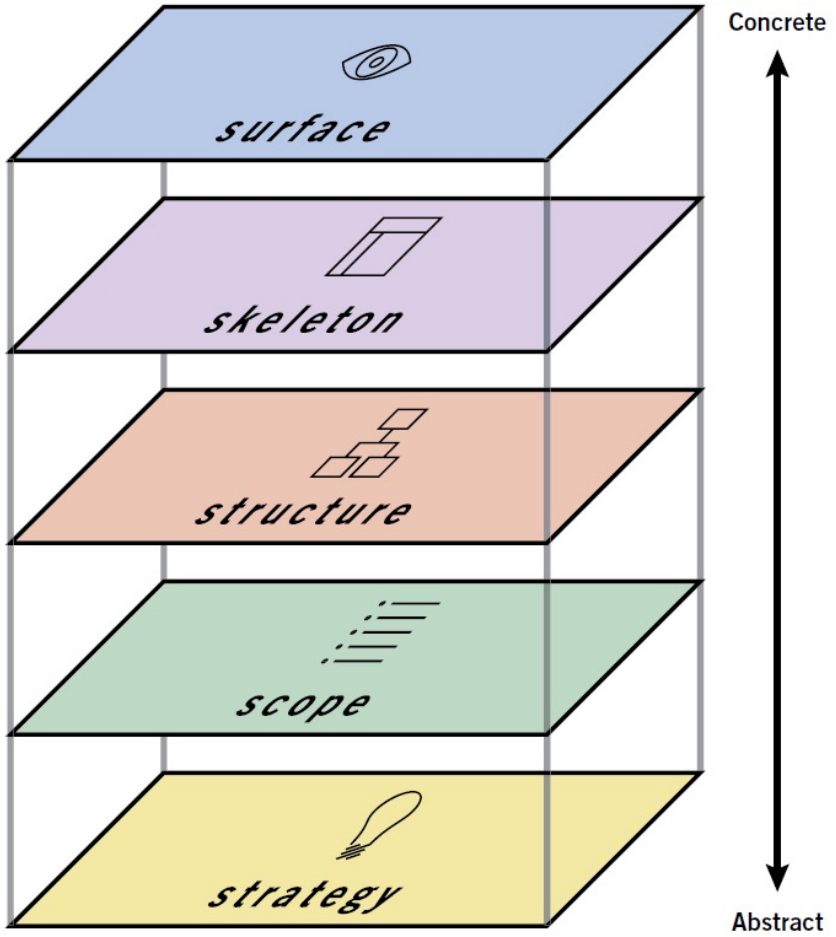


http://paznow.s3.amazonaws.com/User-Centred-Design.pdf

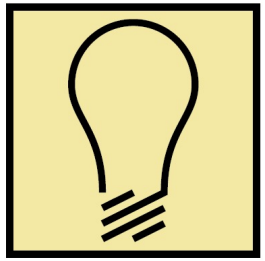
User Experience 5 planes (layers)

design

concept



Strategy



» Planning out the objectives and goals of the project

» Product objectives: *what do we want to get out of this product?*

- Business goals
- Product overview (sketch product features)
- Competitors

» User needs: *what do our users want to get out of it?*

- User research
- Needs & goals
- Segmentation
- No context
- PERSONAS

Lab

» To desing the strategy for a website for find houses for rent or sales

GOAL:

- The website goal is to support users to find houses for rent or sales

TASKS:

* To show available houses (list + details)

* To search houses based of specific characteristics/needs

* To share the owner contact with interested users

USER NEEDS:

-

-

-

Personas

» Invent fictional characters with their own story

Frank

"This stuff is all new to me. I want a site that will explain everything."

Frank is interested in learning how he can turn his hobby of making furniture into a business.

Age: 37
Occupation: School bus driver
Family: Married, one child
Household income: $60,000/year

Technical profile: Somewhat uncomfortable with technology; Apple iMac (about two years old); DSL Internet connection; 8-10 hours/week online
Internet use: 100% at home; entertainment, shopping

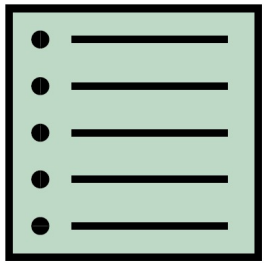
Favorite sites:

ESPN.com

moviefone.com

eBay.com

Scope



» Definition of requirements, functional specifications, data sources, scenarios

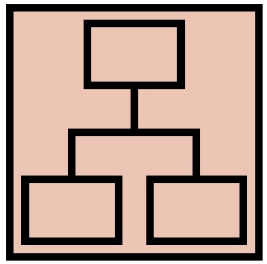
» Features of the app
  - What does it do

» Prioritized Requirements
  - Constraints, rules, etc.

» Type of managed content
  - How does it manage text, video, audio
  - Data provenance (external API, web service, DB …)

» Scenarios (using personas)
  - Describe how personas may interact with the app

Structure



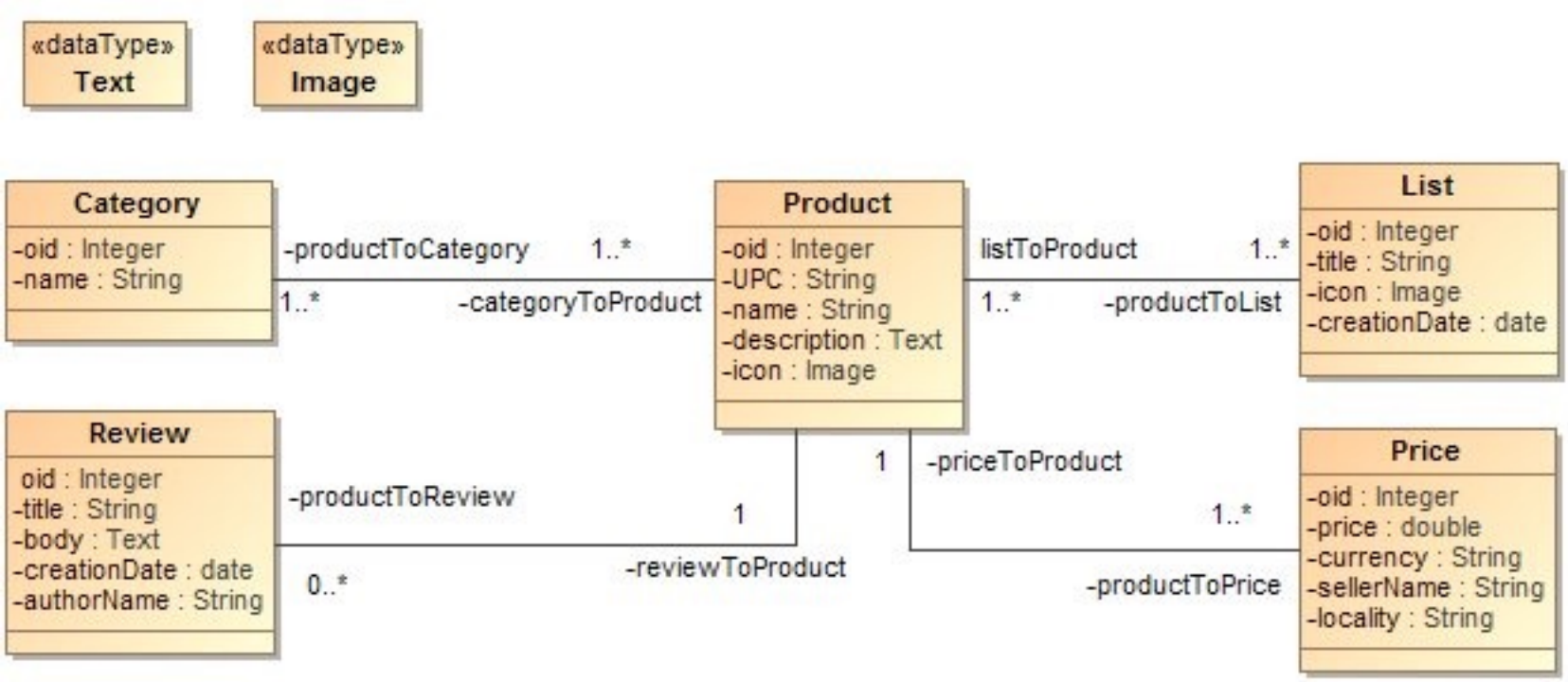
» Structural design of the information space

» how the user moves through and makes sense of tasks and information

- Information architecture
- Views definition and **CONTENT NOMENCLATURE**
- Interaction design
- Navigation among views via a **NAVIGATION MODEL**

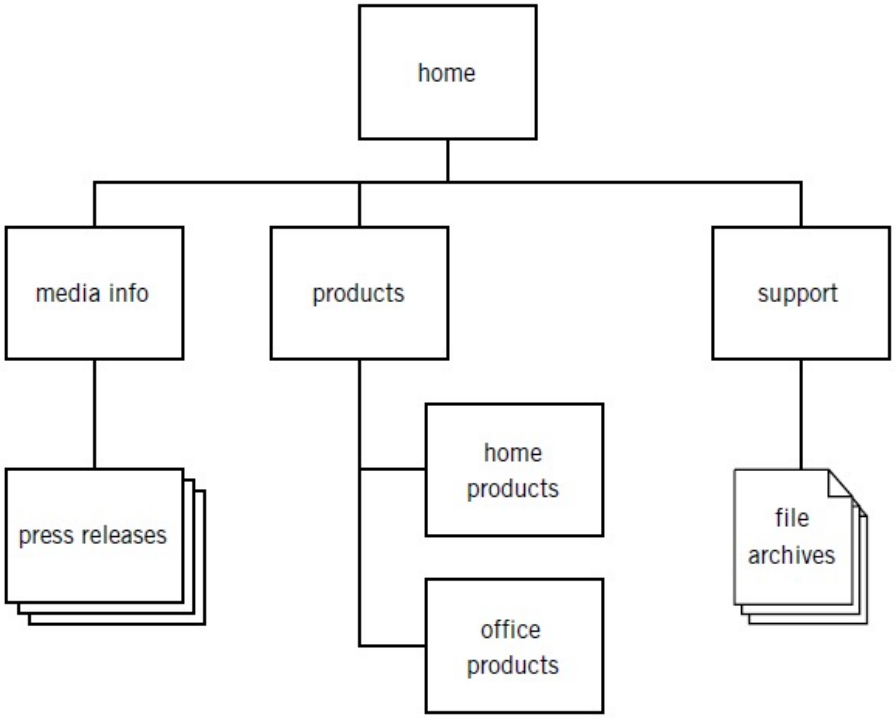
Domain models

» **Conceptual model** of the domain that incorporates both behavior and data.



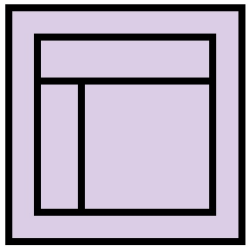
Navigation models

» They represent
  - **relationship** of content to other content and
  - how the user **travels** through the information space



For more details:
http://www.jjg.net/ia/visvocab/

Skeleton



» Designing how information is presented to facilitate understanding

» Interface design
  - Buttons, checkboxes, lists, etc.

» Detailed navigation design
  - How the user travels among views

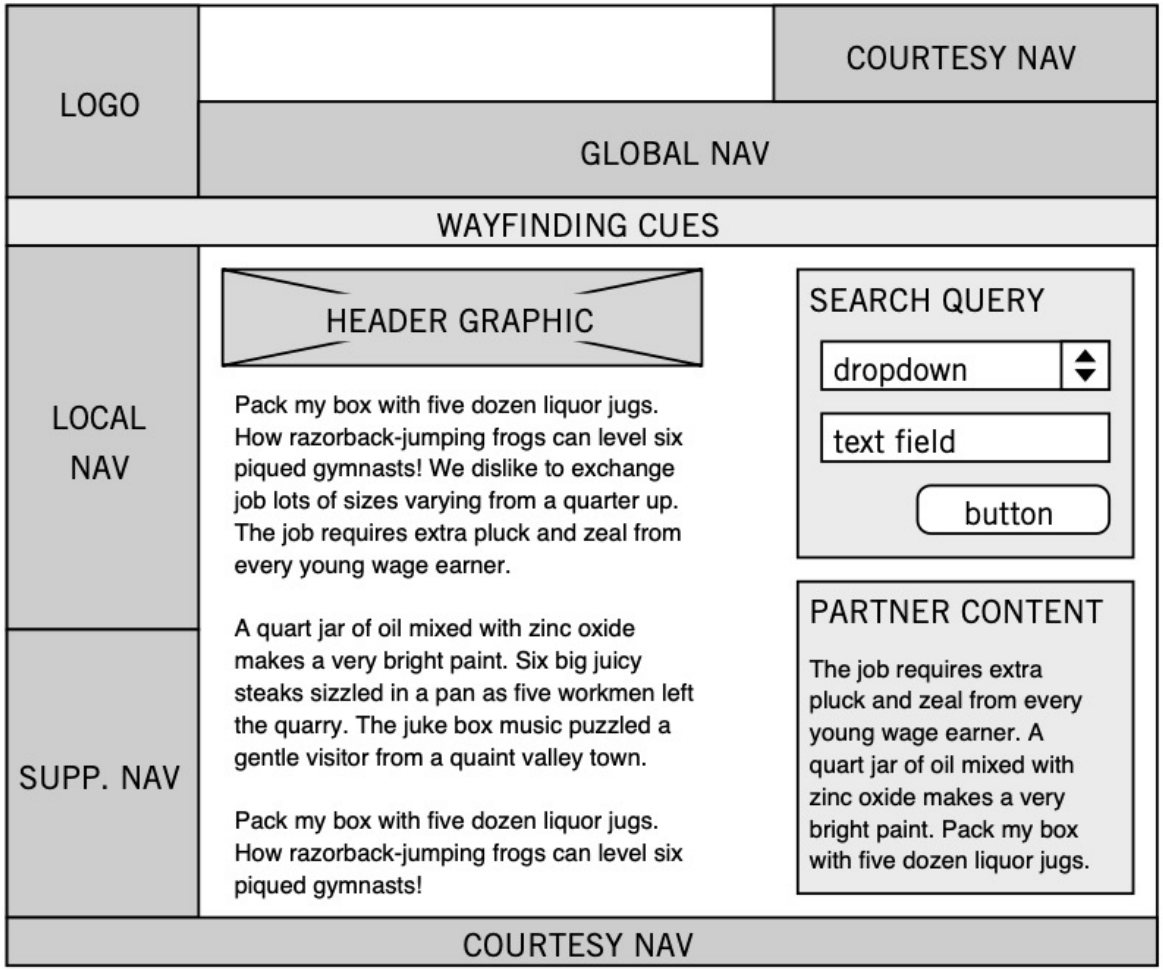
» Information design
  - How to arrange and group info + wayfinding

» LO-FI WIREFRAMES
  - Low fidelity for preventing confusion of visual design concepts with information design concepts

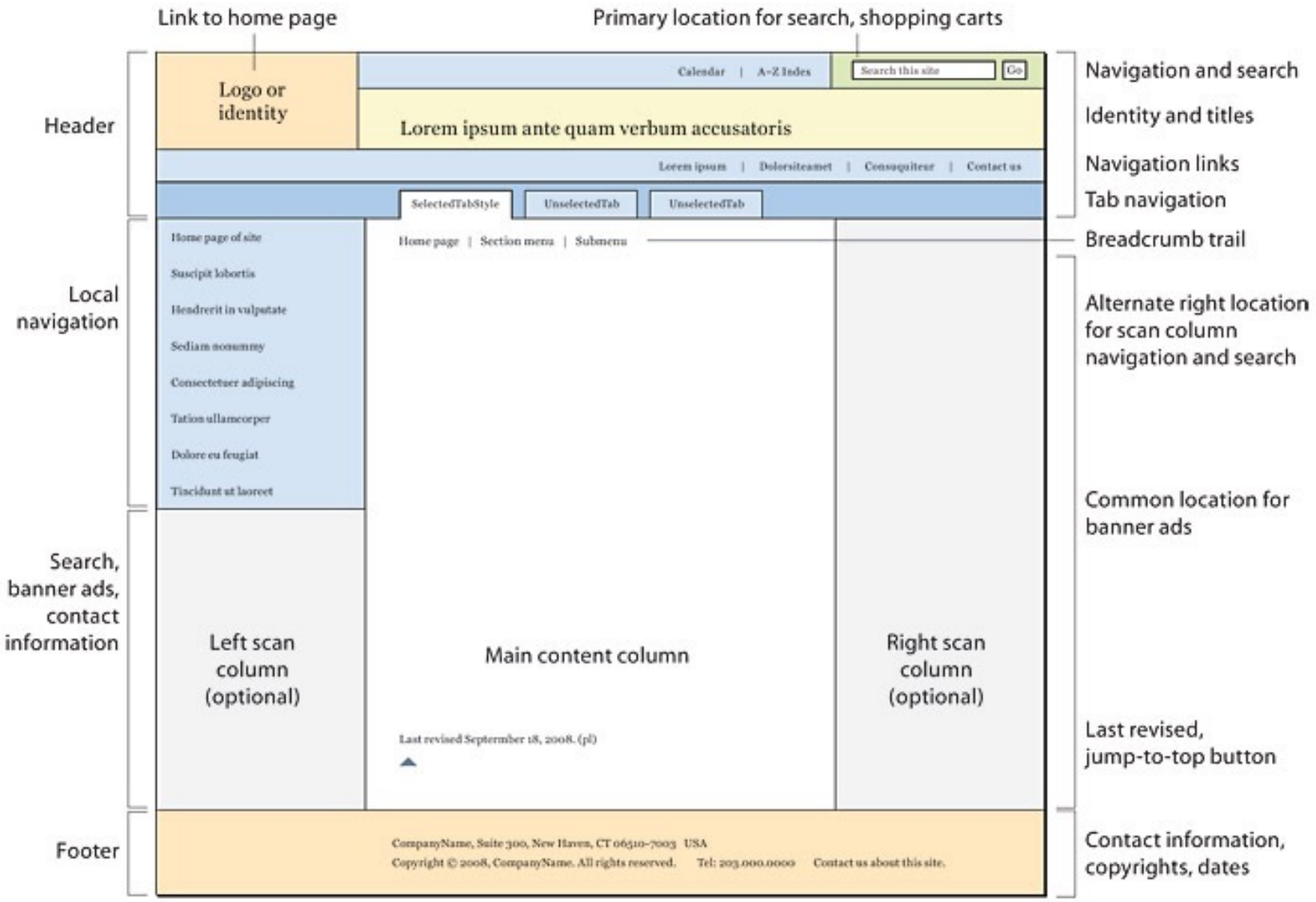
Wireframes

» Views + user interaction + navigation
  – a **refinement** of navigation models

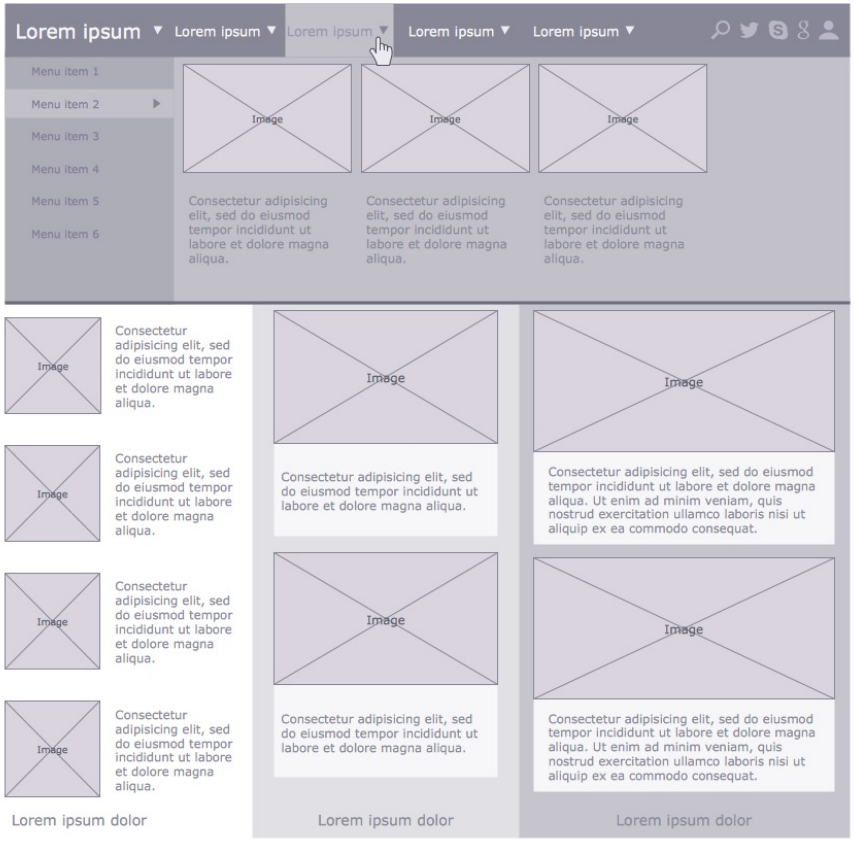
Wireframes capture all the skeleton decisions in a single document that serves as a reference for visual design work and site implementation. Wireframes can contain varying levels of detail—this one is pretty light.

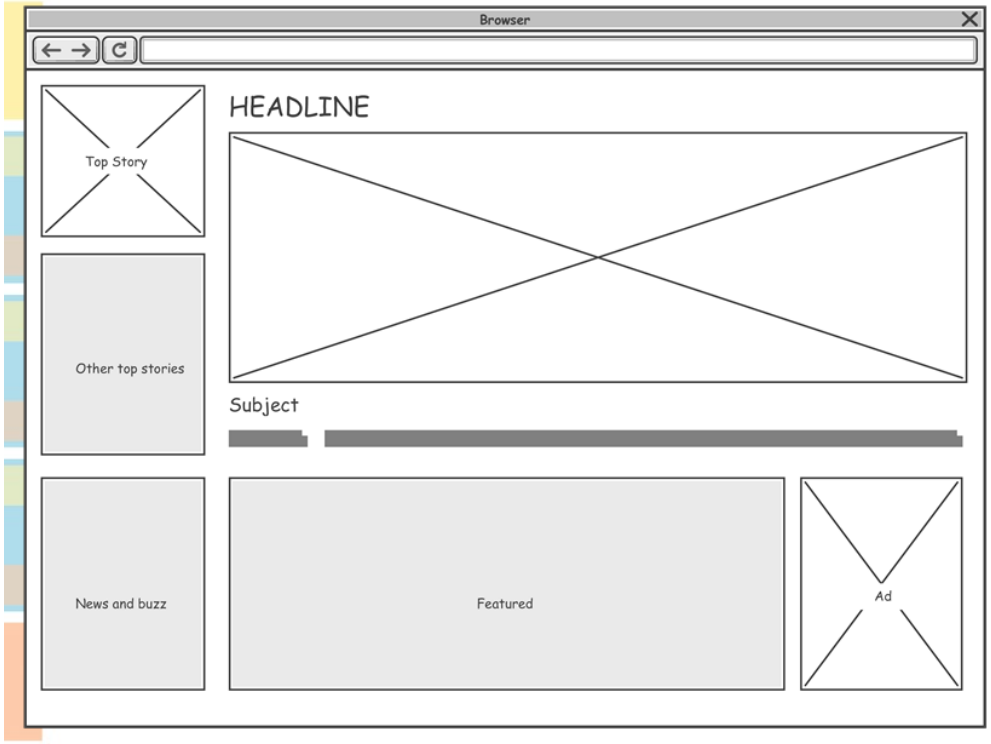


Examples


Link to home page
Primary location for search, shopping carts
Header
Logo or identity
Calendar | A-Z Index
Search this site
Go
Lorem ipsum ante quam verbum accusatoris
Lorem ipsum | Dolorsiteamet | Consequiteur | Contact us
SelectedTabStyle
UnselectedTab
UnselectedTab
Local navigation
Home page of site
Suscipit lobortis
Hendrerit in vulputate
Sediam nonummy
Consectetuer adipiscing
Tation ullamcorper
Dolore eu feugiat
Tincidunt ut laoreet
Home page | Section menu | Submenu
Search, banner ads, contact information
Left scan column (optional)
Main content column
Right scan column (optional)
Last revised September 18, 2008. (pl)
Footer
CompanyName, Suite 300, New Haven, CT 06510-7003 USA
Copyright © 2008, CompanyName. All rights reserved. Tel: 203.000.0000 Contact us about this site.
Navigation and search
Identity and titles
Navigation links
Tab navigation
Breadcrumb trail
Alternate right location for scan column navigation and search
Common location for banner ads
Last revised, jump-to-top button
Contact information, copyrights, dates

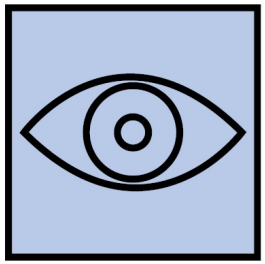
Examples





- https://www.edrawsoft.com/website-wirefram-examples.html
- https://www.lucidchart.com/pages/wireframe

Surface



» The look and feel of the product
» Typography, colour palette, alignment, texture, etc.
» Design comps and style guides
» Prototypes

Design comps

» The most direct analog to the wireframe for the realm of visual design is the visual mock-up or design comp

» *Comp* is short for composite, that is:

- a visualization of the finished product built up from the components that have been chosen

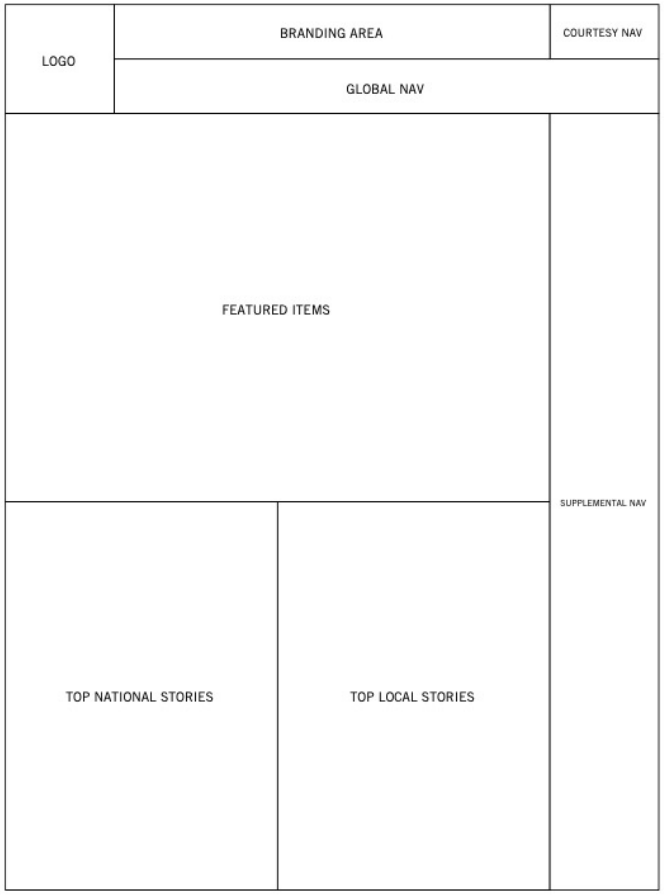
» The comp shows how all the pieces work together to form a cohesive whole

- or, if they don't, it shows where the breakdown is happening and demonstrates constraints that any solution will have to account for

» You should be able to see a simple one-to-one correlation between components of the wireframe and components of the design comp

Design comps

» The visual design doesn't have to match the wireframe precisely—it only has to account for the relative importance and grouping of elements presented in the wireframe



Style guide

» The definitive documentation of the design decisions is the style guide.

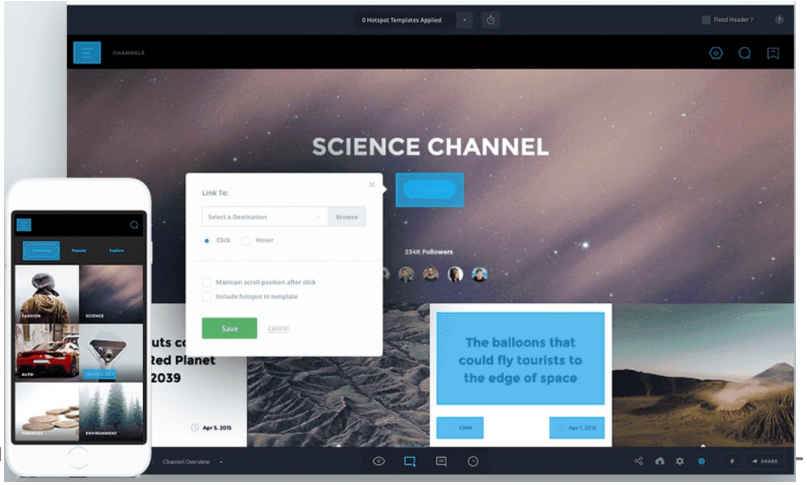
- This compendium defines every aspect of the visual design, from the largest scale to the smallest.
- Global standards affecting every part of the product—such as design grids, color palettes, typography standards, or logo treatment guidelines— are usually the first things to go into a style guide.
- The style guide will also include standards specific to a particular section or function of a product. In some cases, the standards documented in the style guide will go all the way down to the level of individual interface and navigation elements.

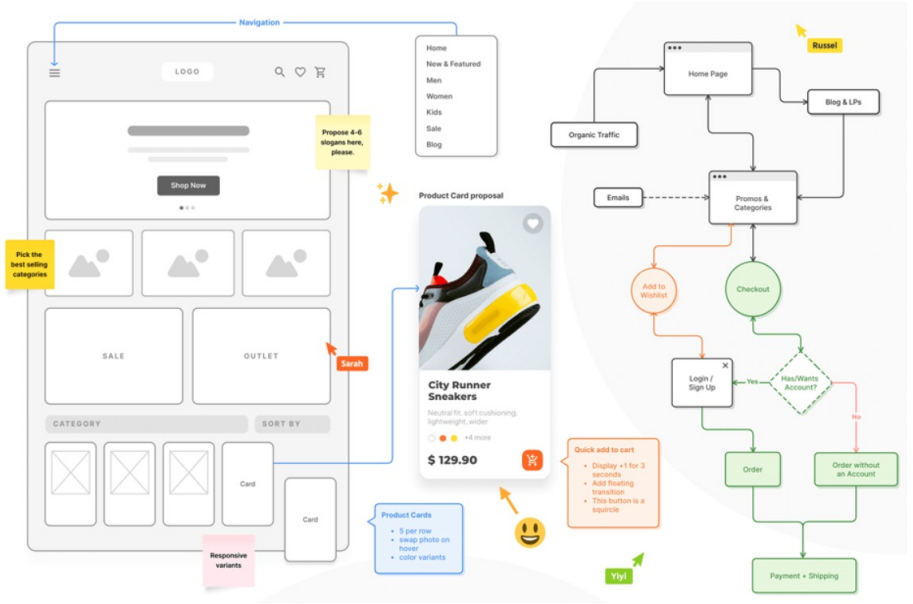
» The overall goal of the style guide is to provide enough detail to help people make smart decisions in the future—because most of the thinking has already been done for them.

Prototypes

» The prototype is the original model or the first example of an artefact, compared to a sequence of equal or similar subsequent creations.

» Different kinds of prototype
  - Paper prototype
  - Context prototype
  - HTML prototype





Mockup, Wireframe, UI prototyping

Summary

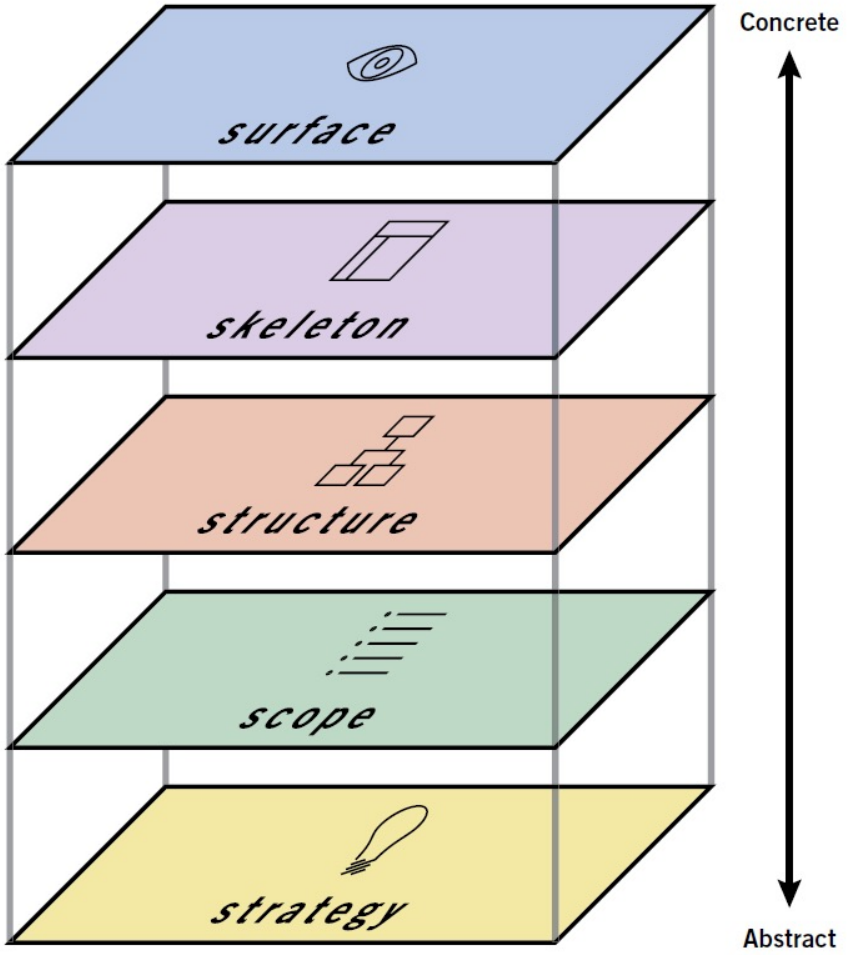
Hi-fi wireframes + prototypes (if needed)

Lo-fi wireframes + wayfinding info

Navigation model + data model

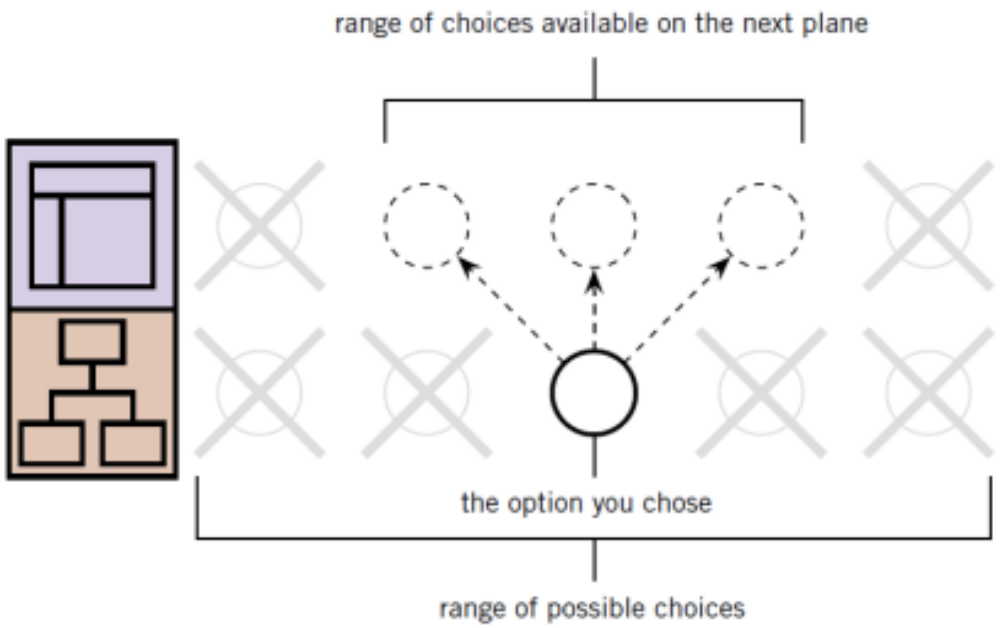
Scenarios (with ctx) + functionalities

Product overview + objectives
+ Personas + competitors



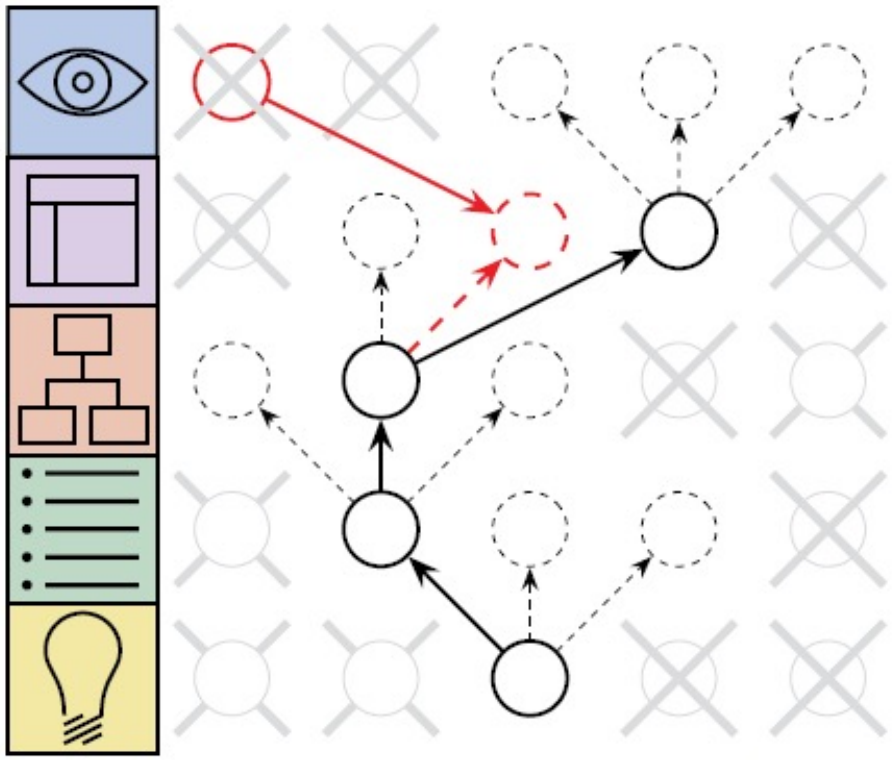
Planes dependencies (1)

» The choices you make on each plane affect the choices available to you on the next plane above it

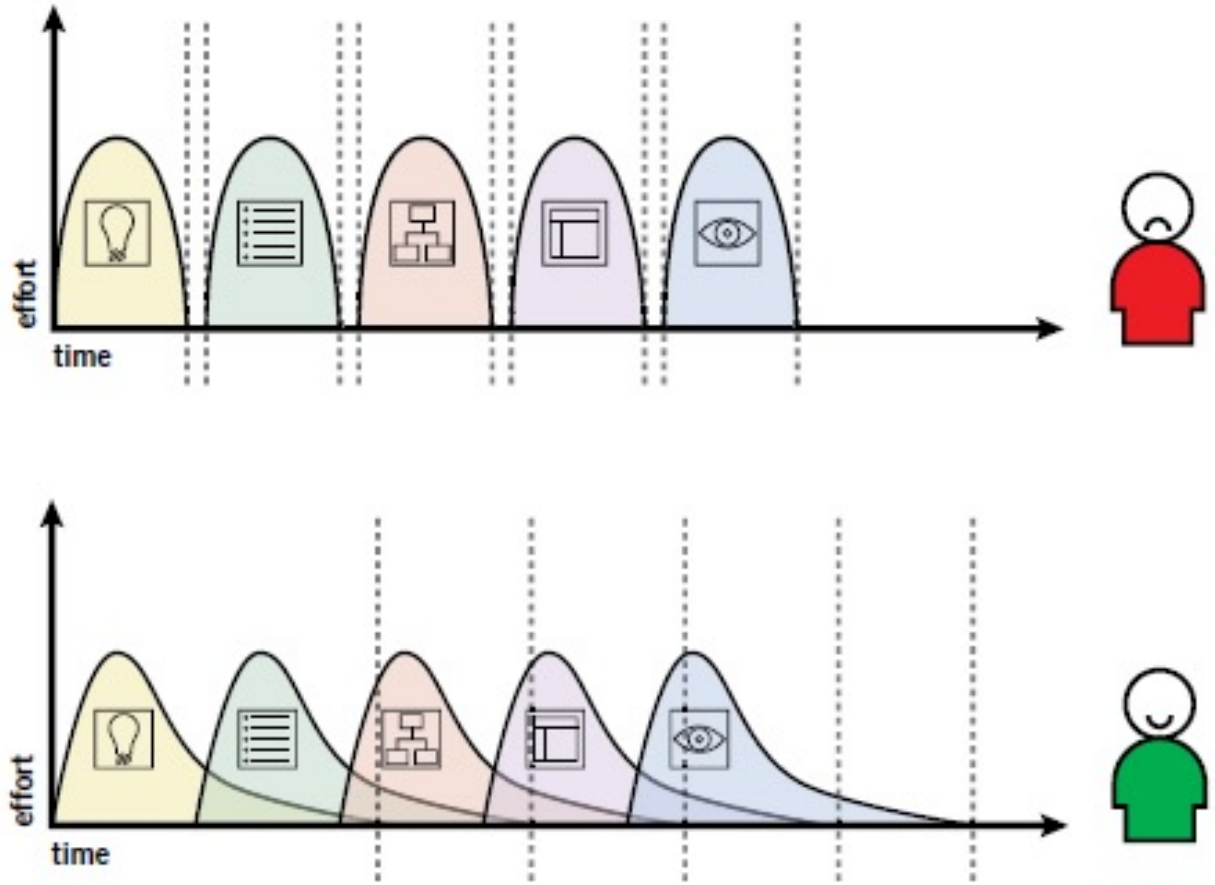


Planes dependencies (2)

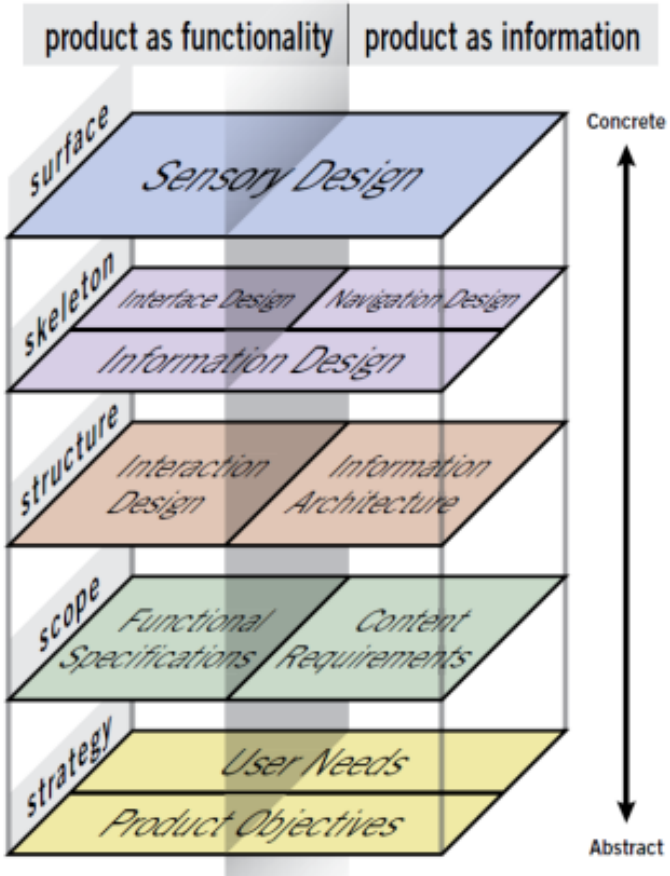
» **Ripple effect**: If you choose an option out-of-bounds, you have to rethink lower options



Be elastic



Basic dually



Outline

» Elements of User Experience

» **Navigation Model**

» Wireframes

Roadmap

» Introduction to the Navigation Model
» Navigation Model Elements
  - Pages
  - Files
  - Connectors & Arrows
  - Concurrent Sets
  - Continuation Points
  - Areas
  - Iterative Areas
  - Flow Area
  - Decision Point
  - Conditional Connector
  - Conditional Branch
  - Conditional Selector
  - Cluster

Symbology

» We will use a basic symbology
  - for diagramming information architecture
  - and interaction design concepts

» Proposed by **Jesse James Garrett**
  - he coined the term Ajax, by the way

Information Architecture

» It is about
  - Conceptual structure
  - Organization of content

» It is **NOT** about navigation among views

Interaction Design

» It is about
  - navigation among views
  - how the user flows through defined tasks

» It is **NOT** about navigation details
  - buttons, checkboxes, pictures, etc… are not defined here, they are part of wireframes

Goal of the sitemap symbology

» To describe at a high level the **structure** and **flow** of the user experience of a website or app
  - Features
  - Simple
  - Tool-independent
  - Small
  - Self-contained

» Focus is on the macro-structure

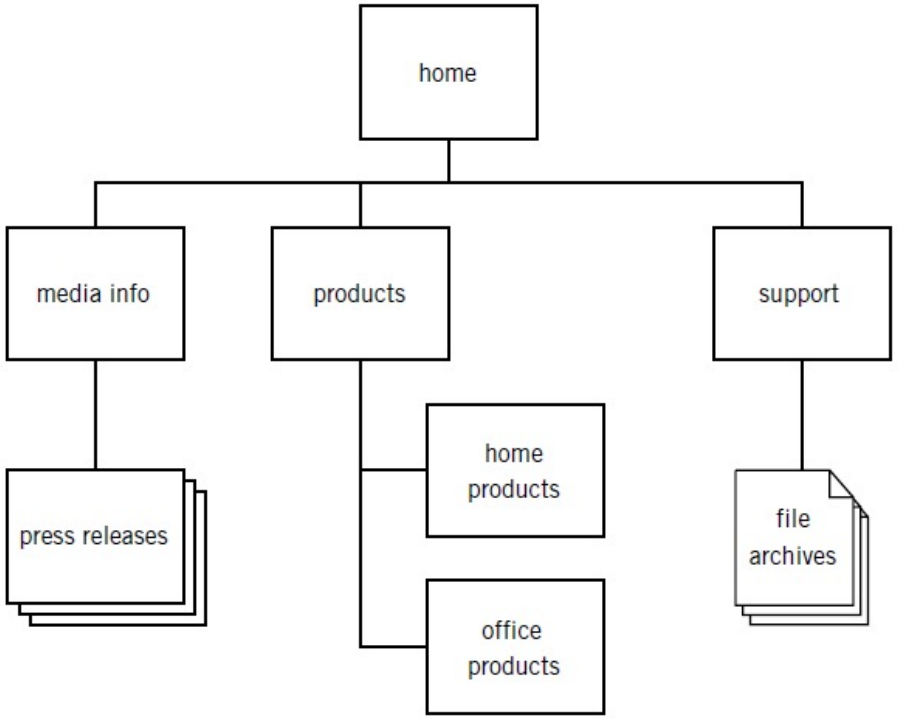
» A visual vocabulary for describing information architecture and interaction design: http://jjg.net/ia/visvocab

Audience

- Project managers and sponsors
  - to get a general sense of the project
- Content producers
  - to derive content requirements
- Interface designers
  - to derive interface design requirements
- Technologists
  - to derive functional requirements
- Information architects
  - to derive navigational and interface requirements

Sitemaps

» Focus on
  - Relationship of content to other content and
  - How the user travels through the information space

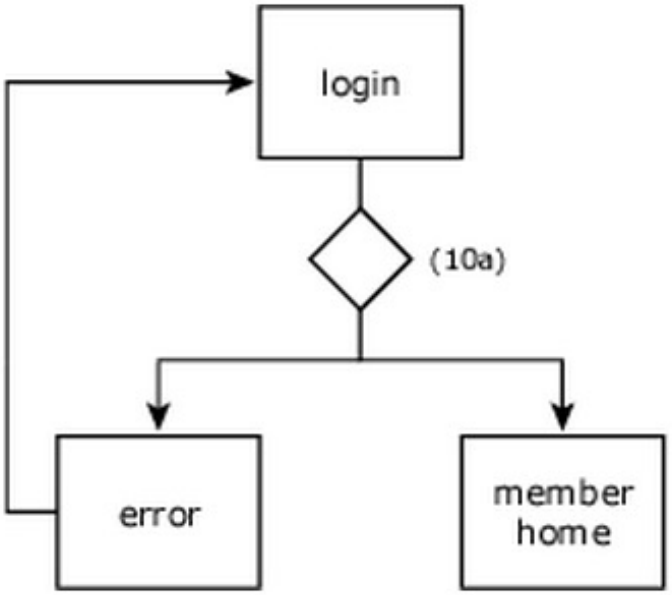


Conceptual model

» The system presents the user with **paths**

» The user moves along these paths **through actions**

» These actions then cause the system to **generate results**



Pages (Views)

- Pages are the fundamental unit of presentation
- They are also called views
- Not (necessarily) a unit of implementation
- One page in your diagram may correspond to multiple files
- Pages can be organized into a page stack
- Page stack: functionally identical pages with identical navigational treatment

Files

» Files are parcels of data without navigational properties
» They are delivered to the user for use outside the app
» Files can be organized into a file stack

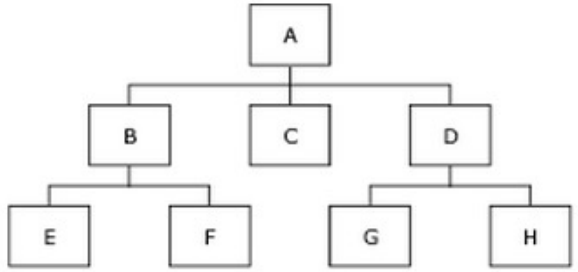
Connectors & Arrows (1)

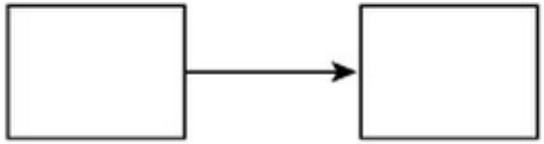
» Relationships between elements are depicted with simple lines

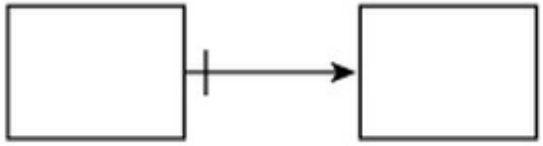
» Arrows to convey directionality

- they indicate how the user will move through the system

» A crossbar on the opposite end of the arrow is used to prohibit upstream movement



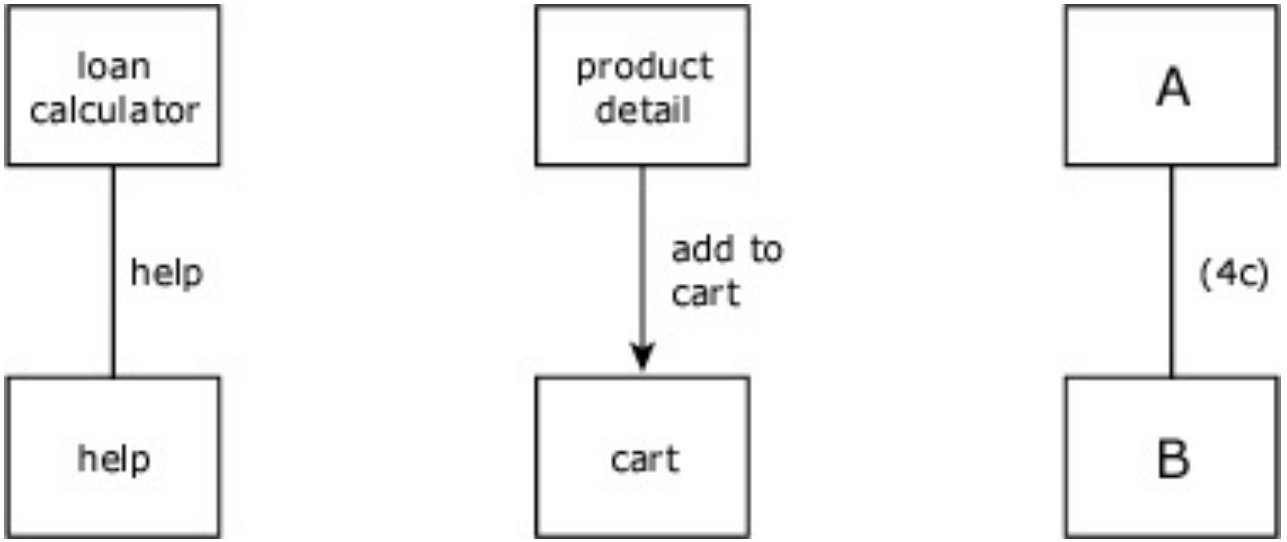




Connectors & Arrows (2)

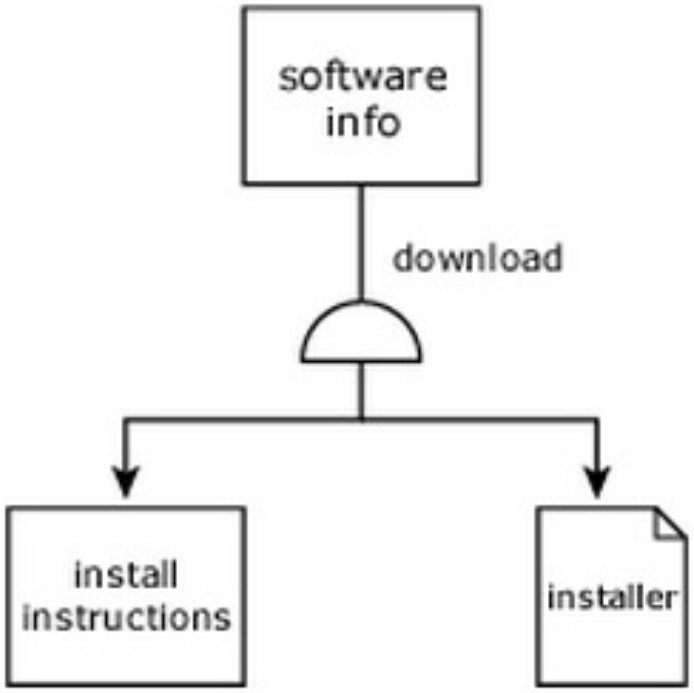
» Connectors and arrows can also be labeled

» If the labels become long, point the reader toward a footnote or appendix entry



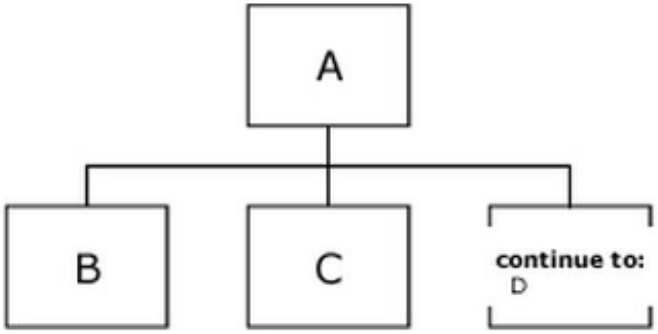
Concurrent Set

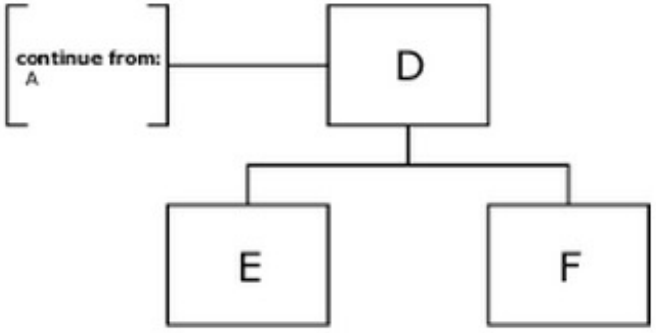
» It is used when a user action generates multiple simultaneous results



Continuation Points

» Continuation points allow us to split our diagrams

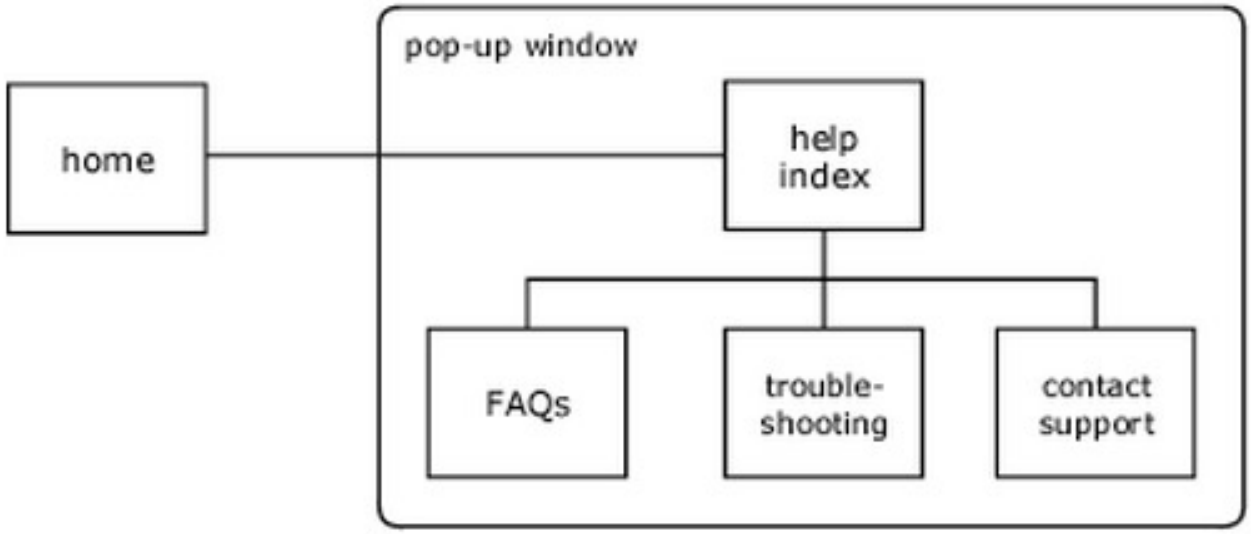




Areas

» They are used to identify a group of pages that share one or more common attributes

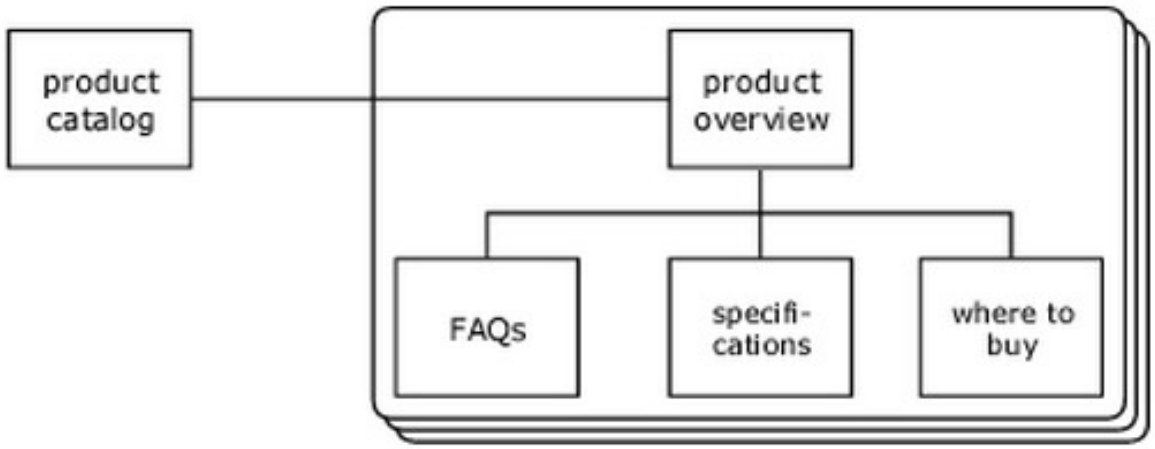
» Example: appearing in a pop-up window having some unique design treatment



Iterative Areas

» They are used to represent architectures that involve repeating the same basic structure as it is applied to a number of functionally identical information elements

» Example: a product catalog in which each product has a number of associated pages

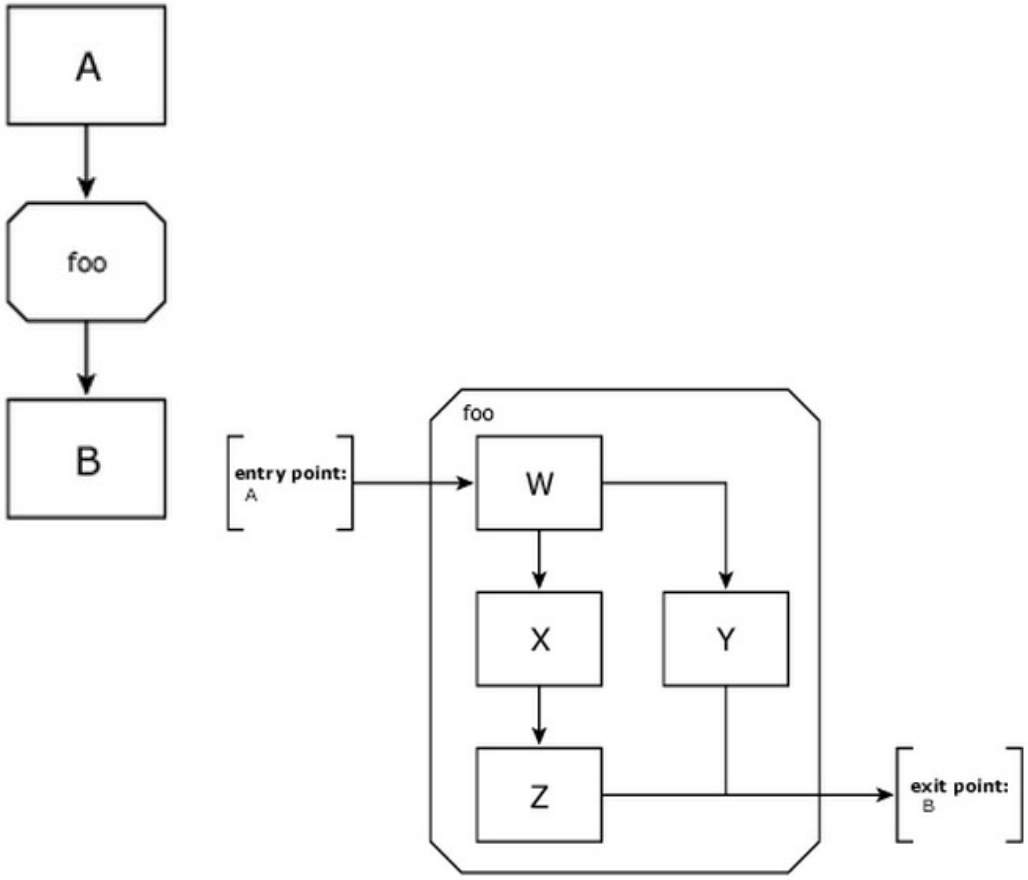


Flow Area

» It encloses a sequence of steps that will appear repeatedly in the diagram

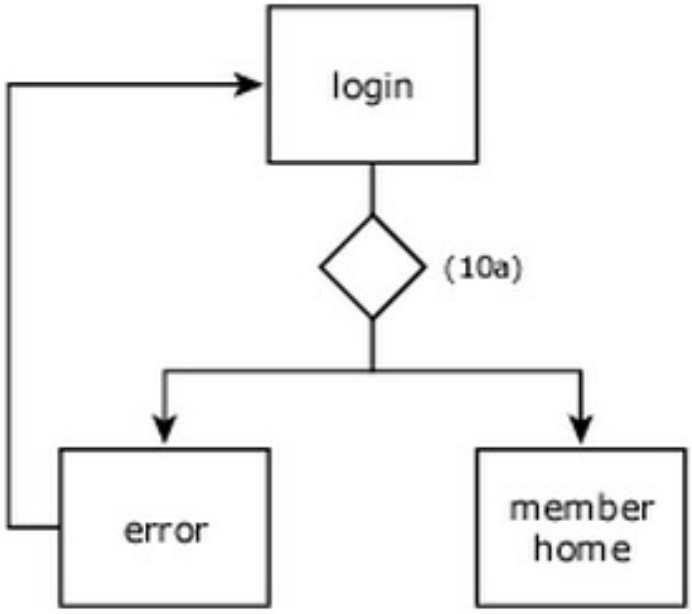
» Example: login procedure

» They require the two special types of continuation points: entry points and exit points



Decision Point

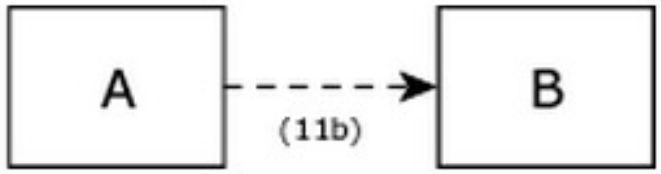
» It is used when a user action may generate one of a number of results, and the system must make a decision about which result is to be presented



(10a) correct credentials?

Conditional Connector

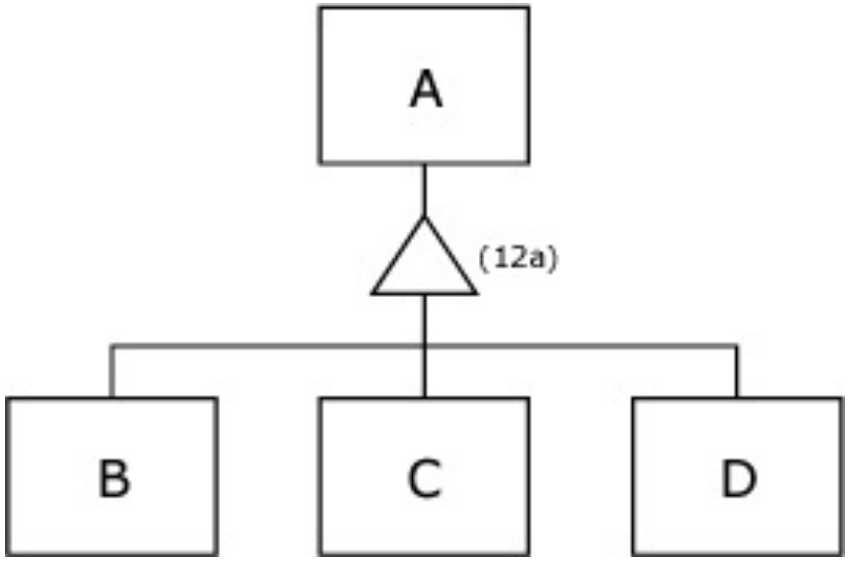
» It is used when a path may or may not be presented to the user depending upon whether one or more conditions are met



(11b) only company employees can have access to B

Conditional Branch

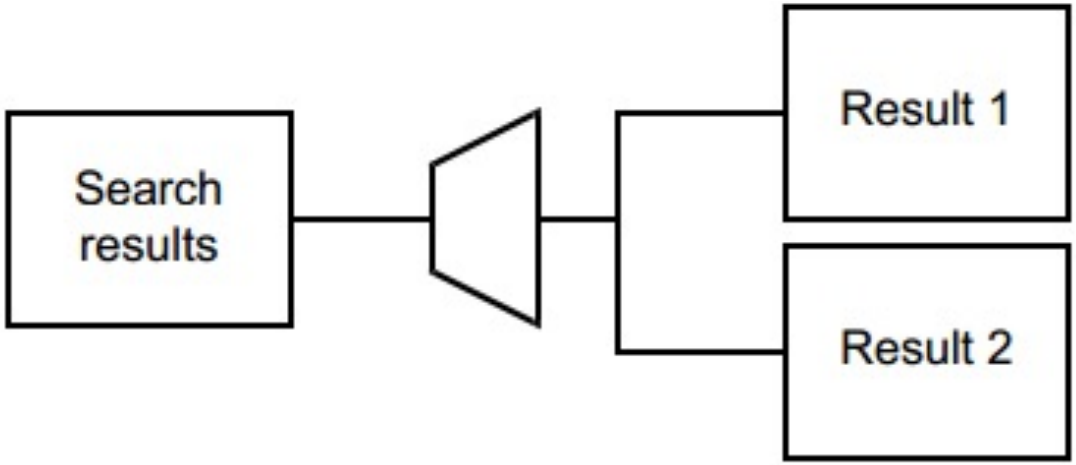
» It is used when the system (**not based on user action**) must select one path among a number of mutually exclusive options



Conditional Selector

» Same as conditional branch, but paths are not mutually exclusive

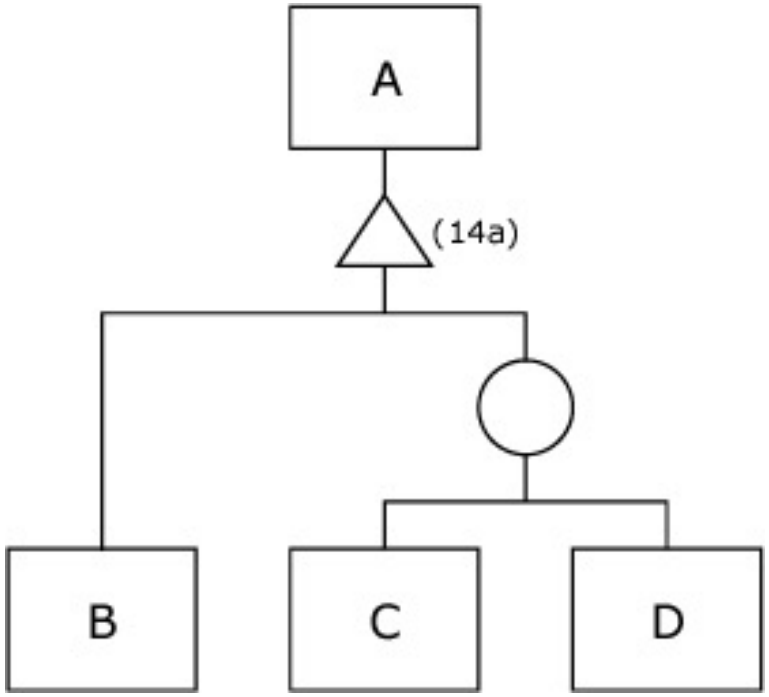
» Most common application of the conditional selector is in results generated by a search engine



Cluster

» Similar to conditional selector, system allows more than one path for certain conditions

» If the attribute being evaluated has value **x**, the user sees a path to page B; but if the attribute has value **y**, the user sees paths to both page C and page D

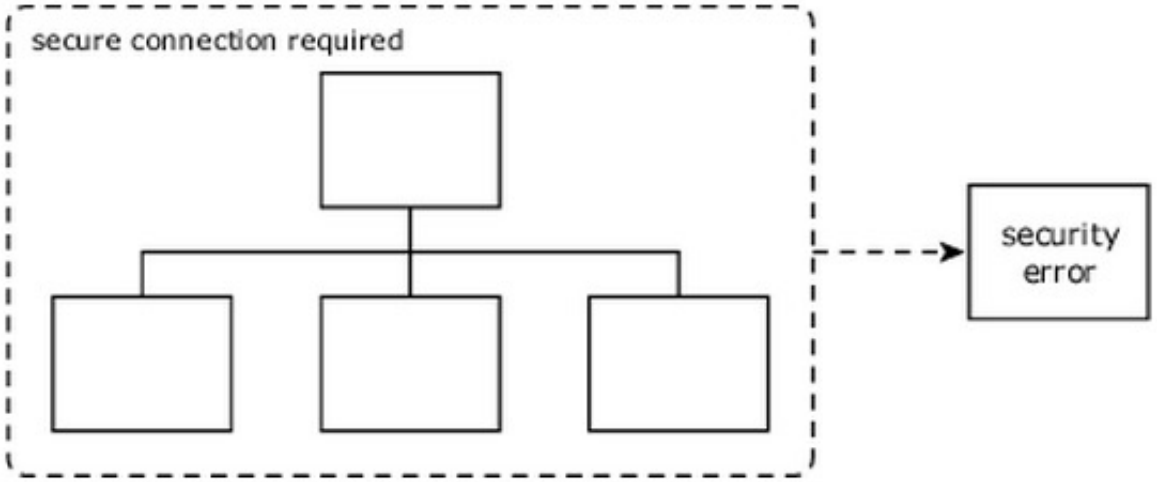


Conditional Areas

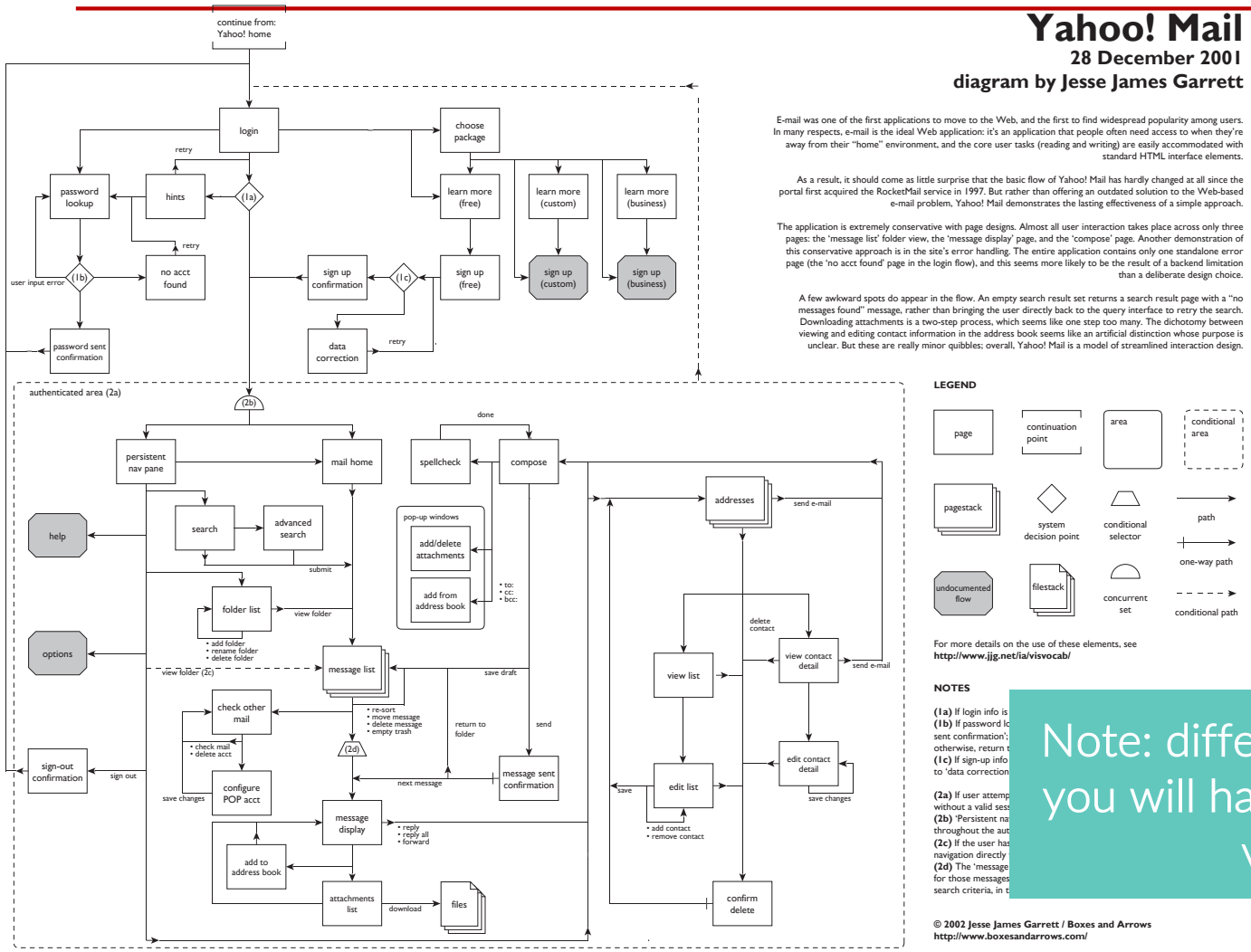
» It is used when one or more conditions apply to a group of pages

» An outgoing result is generated if the condition is not fulfilled

» Example: access permissions



Example- Yahoo mail



Yahoo! Mail

28 December 2001

diagram by Jesse James Garrett

E-mail was one of the first applications to move to the Web, and the first to find widespread popularity among users. In many respects, e-mail is the ideal Web application: it's an application that people often need access to when they're away from their "home" environment, and the core user tasks (reading and writing) are easily accommodated with standard HTML interface elements.

As a result, it should come as little surprise that the basic flow of Yahoo! Mail has hardly changed at all since the portal first acquired the RocketMail service in 1997. But rather than offering an outdated solution to the Web-based e-mail problem, Yahoo! Mail demonstrates the lasting effectiveness of a simple approach.

The application is extremely conservative with page designs. Almost all user interaction takes place across only three pages: the 'message list' folder view, the 'message display' page, and the 'compose' page. Another demonstration of this conservative approach is in the site's error handling. The entire application contains only one standalone error page (the 'no acct found' page in the login flow), and this seems more likely to be the result of a backend limitation than a deliberate design choice.

A few awkward spots do appear in the flow. An empty search result set returns a search result page with a "no messages found" message, rather than bringing the user directly back to the query interface to retry the search. Downloading attachments is a two-step process, which seems like one step too many. The dichotomy between viewing and editing contact information in the address book seems like an artificial distinction whose purpose is unclear. But these are really minor quibbles; overall, Yahoo! Mail is a model of streamlined interaction design.

LEGEND

page, continuation point, area, conditional area, pagestack, system decision point, conditional selector, path, one-way path, undocumented flow, filestack, concurrent set, conditional path

For more details on the use of these elements, see **http://www.jjg.net/ia/visvocab/**

NOTES

(1a) If login info is
(1b) If password l
sent confirmation';
otherwise, return t
(1c) If sign-up info
to 'data correction
(2a) If user attemp
without a valid sess
(2b) 'Persistent na
throughout the aut
(2c) If the user has
navigation directly
(2d) The 'message
for those messages
search criteria, in t

Note: differently from this example, you will have a single page for each view of the app

http://boxesandarrows.com/files/banda/jjg_ymail_poster.pdf

Outline

» Elements of User Experience

» Navigation Model

» **Wireframes**

Wireframes

» Views + user interaction + navigation

Sitemap → LO-FI wireframe (1)

» A LO-FI wireframe is built on the sitemap and has a focus on
  - The LAYOUT of the views
  - Interaction with elements within the views

» Low fidelity for preventing confusion of visual design concepts with information design concepts

Sitemap → LO-FI wireframe (2)

» Sitemap page → wireframe view + interactions

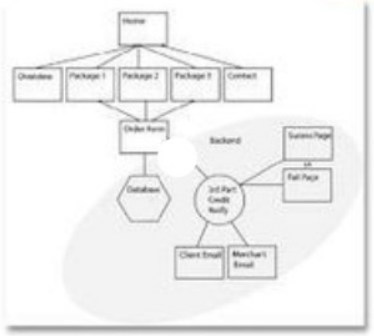
» Sitemap transition → link with gesture icon

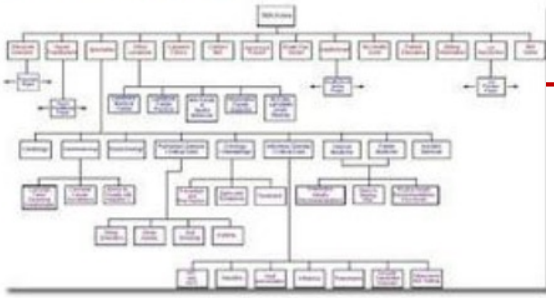
» Better doing it manually in an A3 sheet

» Then translate it using a wireframing kit

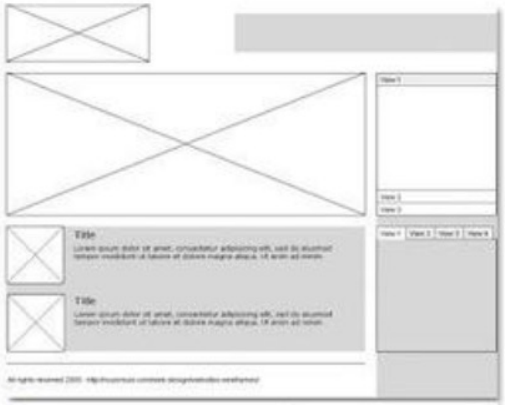
Examples

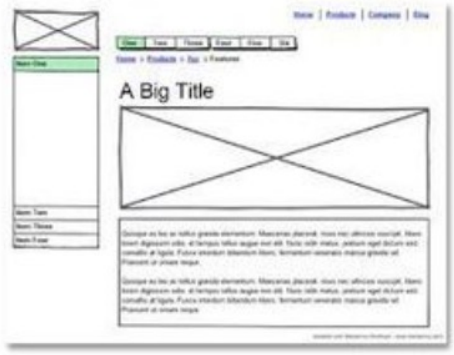
SITE MAPS



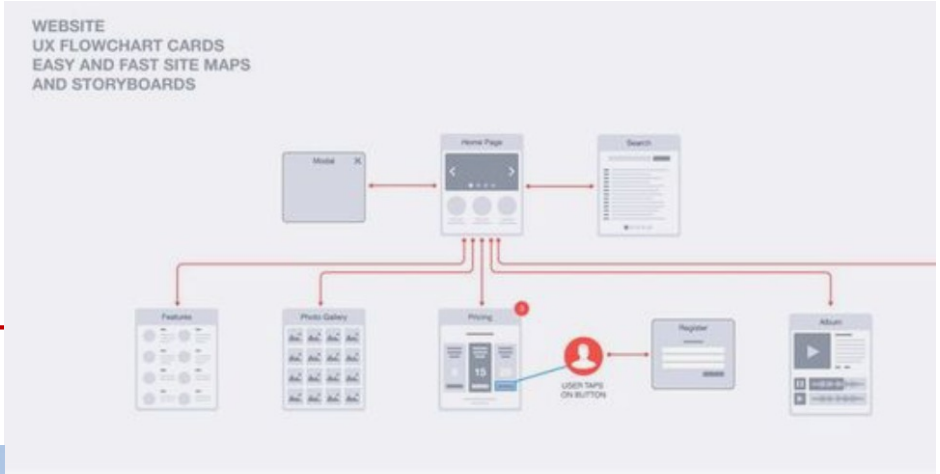


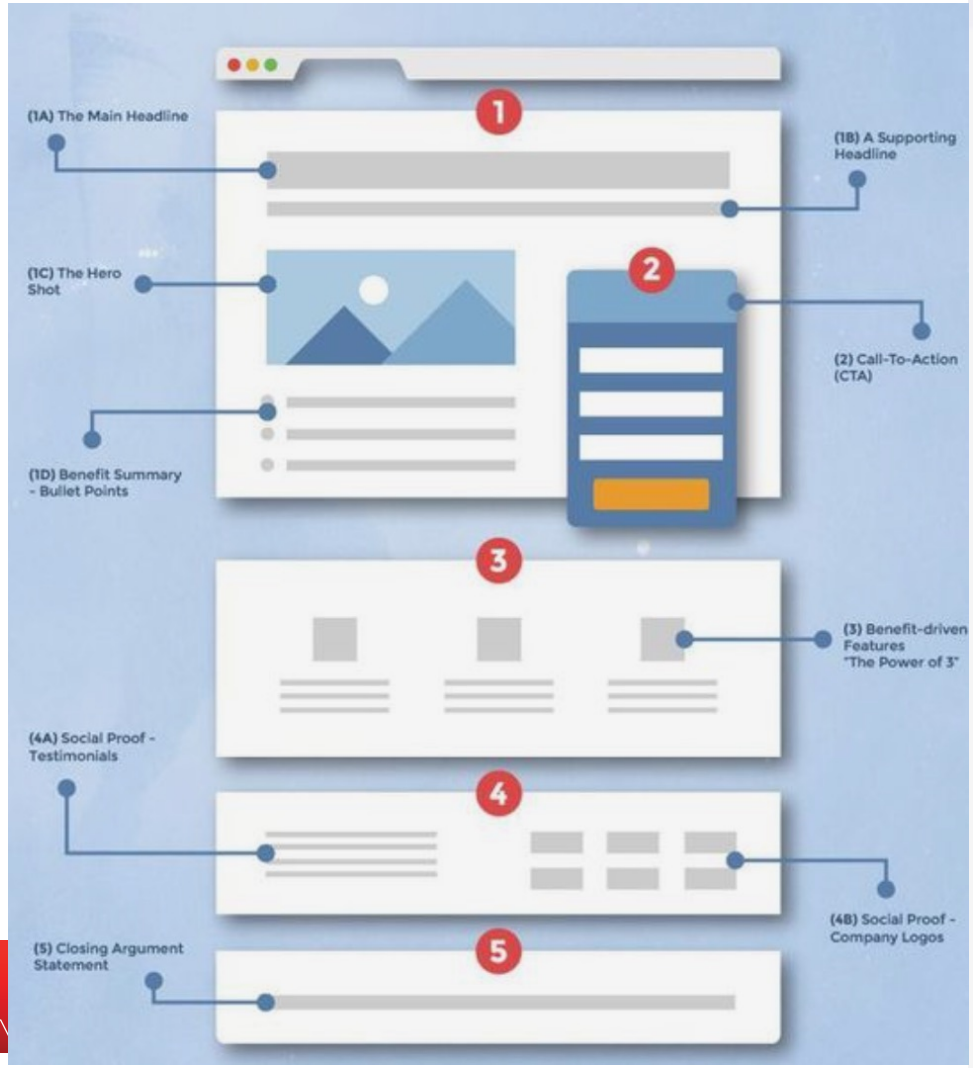
WIREFRAMES





Examples


WEBSITE
UX FLOWCHART CARDS
EASY AND FAST SITE MAPS
AND STORYBOARDS


(1A) The Main Headline
(1B) A Supporting Headline
(1C) The Hero Shot
(2) Call-To-Action (CTA)
(1D) Benefit Summary - Bullet Points
(3) Benefit-driven Features "The Power of 3"
(4A) Social Proof - Testimonials
(4B) Social Proof - Company Logos
(5) Closing Argument Statement
1
2
3
4
5


404

Tools for LO-FI wireframes

» https://www.draw.io (also for natigation and domain/data models)

» https://www.justinmind.com/

» https://balsamiq.com/

» https://dzone.com/articles/27-open-source-web-ui-mockup-tools

HI-FI Wireframes

» An HI-FI wireframe is a refinement of a LO-FI wireframe with a focus on
  - How each view will appear in details
  - Sensory sensations of the user
» Typography
» Colour palette
  - https://color.adobe.com/
» Textures + everything about the look & feel

www.justinmind.com
inspireui.com
www.designer.io
https://www.figma.com/

In your project

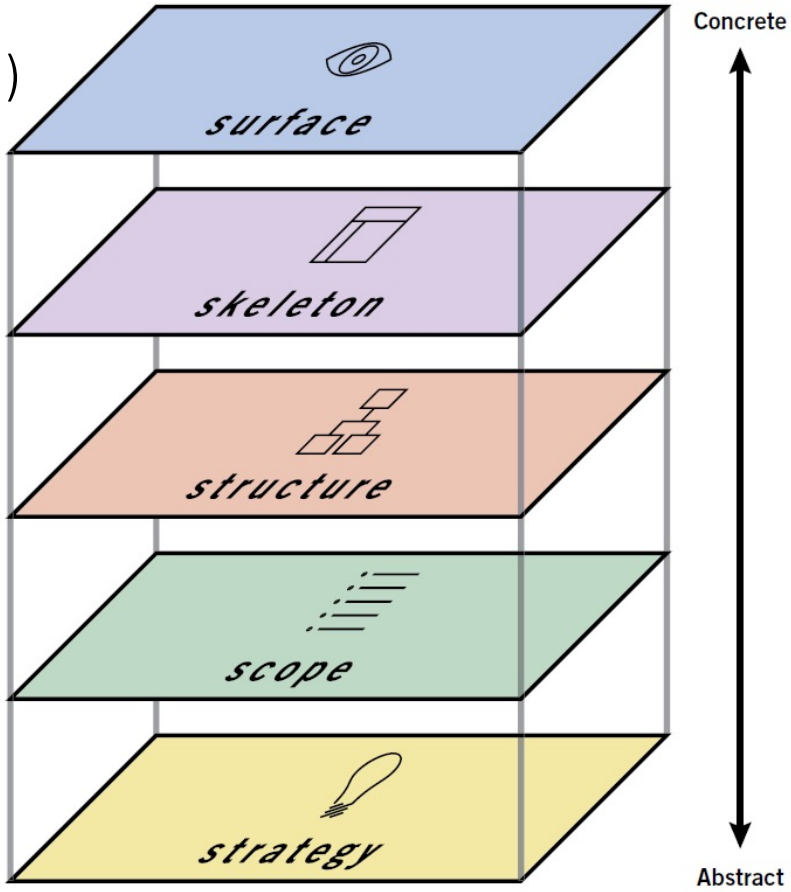
HI-FI WIREFRAMES + prototypes (if needed)

LO-FI WIREFRAMES + wayfinding info

NAVIGATION MODEL + DATA MODEL

Scenarios (with ctx) + FEATURES

Product overview + OBJECTIVES + Personas + competitors



LAB

1. Create the navigation model of the web app

2. Sketch down the wireframe of some views of the web app