CS7026

Information Architecture, Wireframes, Interface Design
Information Architecture

- Information architecture (IA) is the overall structure of your website,

- It dictates hierarchy, divisions, and relationships. It is a blueprint for your site and should be one of your first considerations when beginning the process of site conceptualization.

- Before you start designing individual pages and considering what content you want on your pages, make sure your information architecture is in place.
Information Architecture

- **IA maps out:**
  - the number of pages in your site
  - how the pages relate to each other
  - hierarchy, divisions, and relationships within your site

- There are multiple methods used to develop and determine information architecture. Two basic approaches are **site outlines** (or **site maps**) and **flowcharts**.
Site Outline or Site Map

- A site outline (sometimes referred to as a site map) is a traditional outline of your website showing the hierarchy of information as it relates to pages on your site.

- The information is tiered, with secondary-level pages shown as descendants of the top-level pages, and so forth.

- It is similar to the outline you might create for a report or other manuscript.
Example:

Home Page
  I. About Us
    a. Department History
       i. The Beginning
       ii. Early History
       iii. Today
       iv. The Future
    b. Mission
    c. Contact Information
    d. Directions
  II. Degree Programs
    a. Undergraduate
    b. Postgraduate
Flowchart

- A flowchart is a more visual representation of the site hierarchy.

- Blocks represent pages, with the top-level pages appearing at the top of the flowchart and sublevel pages shown as direct descendants of the pages above it.

- Connecting lines represent how the pages relate to each other in the page hierarchy. Links to videos, PDFs, or external sites are also indicated.
Flowchart

Example:
Wireframes: Individual Page Layout and Content

- A wireframe is a mockup of your page. They are basic line drawings showing the placement and position of information on a single webpage.

- Wireframes map out:
  - Types of content that will appear on a page
  - Where on a page certain content is placed
Wireframe Example:
Wireframe Example:
Wireframe Method

- Areas of a page’s “real estate” are sectioned off and assigned a particular piece of information.

- These areas could include a header for a school/unit logo, a navigation area for site navigation, a main content area for copy/text, and a footer area for copyright and contact information.

- Usually the structure of a wireframe is used across multiple pages. This gives a website consistency and allows the user to find information in the same area no matter which page they may be on.
As you develop your wireframe, keep in mind the components that make up a website.

**Written Content:** E.g., Banners (banners are images/text across the top of the page), introductory text, descriptions of degree programmes, descriptions of research capabilities and labs, research reports, press releases, guides for students, archive, forms, directory, contact information, etc.

**Multimedia Content:** Photos, videos, podcasts, audio, etc.

**Functions:** Search, email alert signup, registration, databases, surveys, etc.

**Navigation Tools:** Multiple ways through site, such as menus, A to Z listing, search, site map, quick links

**Context on Every Page:** All pages should include homepage link, webmaster and/or feedback link, contact information or link
Where to begin?

- When creating wireframes, you must consider how your web layouts will fall on varying screen sizes.

- I suggest starting with a flexible grid system. Designing to a grid will not only allow you to create an aesthetically balanced layout, but will also help guide mobile friendly layouts as you shift elements around for various resolutions.
Where to begin?

- This process is similar to building a puzzle. Your “puzzle pieces” are elements such as images, videos, headlines, copy, and navigation menus that need to be on your website.

- Determine which “pieces” are needed in the header, body and footer of your home page and internal landing pages, and start arranging!
Where to begin?

- Here are a few tools you can use for wireframing tools:
  - Adobe Illustrator
  - Balsamiq
  - Mockflow
  - Mockingbird
  - Lovely Charts
  - Cacoo
  - Gliffy
Interaction Design: Five Essential Principles

Five Essential Principles:

- Consistent
- Visible
- Learnable
- Predictable
- Feedback
Consistency

- People are Sensitive to change

- Differences can cause distraction.

- When visitors start asking why it is the way it is or why it is different they are focused on the interface and not the content or the experience.
Consistency

Garden Room

The Garden room is a large ground floor room. It features a private bath with jacuzzi tub, California king bed, double futon in the sitting area and a single futon "window seat."

In addition to access to the upstairs kitchenette and common areas this room has a small refrigerator, microwave and satellite TV with DVD player.

Additional amenities include soft fluffy towels, ceiling fan, clock radio, reading lights, hair dryer. Most of the lights are on dimmers.

Photo caption appears here

Photo caption appears here

Photo caption appears here
Consistency
Consistency

- We should be very careful about how we design components so that people can begin to recognise them.

- Elements that have similar behaviour should have similar appearance.
Consistency
Consistency
Consistency
Consistency

• Components with different behaviours should have different appearances.

• Visitors will recognise when there are different interactions available when components use different indicators and structure.
Consistency
Consistency

- https://kottke.org/18/01/bad-design-in-action-the-false-hawaiian-ballistic-missile-alert
Consistency
Consistency

- Changes in appearance and behaviour can attract unwanted attention.

- Be detail oriented with your design, because sloppy design can be distracting, and inattention to detail reduces credibility and trust.

- Consistency goes unnoticed
  - We only really notice when things differ or fail.
Consistency: It’s all in the details...

- Strive for consistency in both appearance and behaviour:
  - Colour, pattern and texture
  - Size, proportion and rotation
  - Shape
  - Alignment (use grids and guides)
  - Typography
  - Visibility
  - Transitions and motion graphics
  - Rollovers / mouseovers
  - Tooltips
  - Layers and pop-ups
Visibility

- You cannot invite interaction and engage visitors with your design if they are not aware that the opportunity to interact exists.

- Hidden interactions decrease usability and efficiency

- Do not make your visitors search for interactions when they need to complete their task.
Visibility

- Discoverability should not involve luck or chance

- People should be able to presume, deduce or infer that an opportunity to interact exists.

- Rollovers/mouseovers work best when people realise they are present or assume they are available.
Visibility

AboutOrchids.com Logo

Identifying & Buying Orchids  Basic Orchid Care  Pests & Diseases  Orchid Resources  Photo Gallery  Orchid FAQ  Q&A Forum  Orchid Blog

Quick Care Guide

Water
Humidity
Light
Temperature
Fertilizer
Potting Media
Dormancy
Outdoor Orchids

Understanding How Orchids Grow

Rainforests are like crowded cities of plants and animals. Trees grow like apartment buildings with many plant residents attached to their branches and trunks. The trees crowd together as they reach for the sun. Plants absorb light, water, and nutrients, and turn sunlight into energy. Rain falls at times in massive downpours, other times in slow drips and drizzles. High humidity, the amount of water vapor in the air, means it is always damp. Breezes move the air, and temperatures fluctuate between daytime warmth and nighttime coolness. Plants, animals, and insects leave debris. These decompose quickly in the high humidity, leaving nutrients that are valuable assets and are consumed quickly.

Orchids are successful in this competitive environment because they grow as epiphytes, living on trees above the rain forest floor. By growing as air plants, orchids are not shaded by dense plant growth on the ground. They also place themselves out of reach from hungry animals and insects that cannot fly or climb. Their sponge-like roots quickly absorb water and nutrients within reach.

Flower pots of bark or moss mimic these conditions. Orchid roots stay in high humidity, and have air flow around them.

Quick Care Guide for Common Orchids
Visibility

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Visibility

- Try to avoid situations where visitors falsely believe that they have reached the end of content or of an experience.

- Use hinting and “false bottoms” when more content and interactivity exists below the fold, farther down the screen, or beyond the visible area.
Visibility

Welcome to the World of Orchids!

Orchid flowers have a magical beauty and allure, with incredible colors, shapes, and scents. Maybe this contributes to the belief that orchids are difficult to grow and bloom. In reality, most orchids are not difficult plants. As a matter of fact, some are practically indestructible. With a few basic tips for orchid care, you can make your orchid grow, thrive, and bloom. For centuries, people all over the world have fallen in love with their flowers.

Orchids Grow All Over the World

Over 30,000 species of orchids inhabit every corner of the planet except for the driest deserts and Antarctica. Humans have crossbred these species to create 140,000 hybrids, with more appearing all the time. Most are grown for their beautiful flowers, but the seed pods of the Vanilla orchid provide the popular flavoring. And unlike most plants, they do not grow in soil, but in the air. Their roots attach to trees or rocks where they capture moisture and nutrients that wash over them in the rainforest.

Learning About Your Orchid

AboutOrchids.com offers information about basic care for common orchids. They are very diverse plants that grow in wide varieties of environments all over the world, but this site focuses on the most common kinds of orchids available for sale and which are best suited for a beginner. If you find that one of these tips or techniques is not working for you, check our resources to help you do some more research about your plant to find more advanced care information.

The first step to taking care of your orchid is learning what kind of orchid it is. Most of the orchids commonly found for sale are hybrids that have been created specifically for their flowers and ease of care in homes and offices.

What kind of orchid do I have?
How do I take care of my orchid?
What’s wrong with my orchid?
Visibility

- Signal the availability of interaction with visual indicators that invite people to touch or click.
  - People are ‘click happy’. They will attempt to interact with anything that could possibly be clickable or touchable.

- Standard interface components such as hyperlinks, buttons, thumbnails, scrollbars and form elements are understood to be interactive.

- Different text colour and decoration, 3D and depth cues, icons, and textures invite interaction.
Visible Characteristics that Invite Interaction

- Buttons
- Icons & Images
- Textures
- Text Styles

Nearly any difference in text styles appearing within the flow of content may be perceived as a link or other interactive element on the page. It is no longer necessary to use an underline to indicate when text is clickable. However, the underline is still the most easily and quickly recognized indicator of an available text link.
Visibility

- Games and “Easter Eggs” are special situations and exceptions to the rule of visibility.
  - If visitors know that searching for interactions is part of the experience, then the primary intention IS the search for opportunities to interact.

- Most games are fun because you do NOT know what to do, when to do it, or what will happen next.

- “Easter Eggs” (hidden features or messages) should not interfere when people are trying to complete a task.
Learnability

- Interactions should be easy to learn AND easy to remember.
  - Ideally: use it once, learn it, and remember it forever.
  - Practically: use it a few times, learn it, and hope to remember it for the next visit or use.
Learnability

- Learning theories from psychology can help us better understand how people acquire and retain knowledge and skills.
  - **Operant Conditioning**: Getting a reward or positive feedback increases the probability that people will engage in that behaviour again. Getting a punishment or making an error decreases the probability that people will engage in that behaviour again.
  - **Observational Learning**: Seeing someone else model or demonstrate the behaviour and then imitating or repeating what we have seen. Video tutorials are good examples of observational learning.
Learnability

- Learnability is often equated with ‘ease of use’, but even interfaces that are easy to use may require learning.
  - The more we use an interface (and the more we learn), the easier it becomes.
  - Practice leads to habits, and extensive practice leads to automaticity.

- “Intuitive” really means “single trial learning”.

Learnability: The Effects of Practice

Practice leads to learning, decreased errors, and increased performance speed.
Learnability

- People learn behaviours from experiences across the web and devices and even from real-world places and objects.
  - **Transfer of Learning:** We take our experiences with us and attempt to apply them in similar situations.
  - **Perceived affordances:** When the affordances of real objects are represented metaphorically or analogously in digital form.

- Take advantage of what people already know.
Digital Analogs of Real World Objects
Predictability

- The design should set accurate expectations about what will happen before the interaction has occurred.

- Visitor behaviour can reveal whether or not they are able to accurately predict what will happen:
  - When they do not know what they can do or what will happen, they will attempt interacting with anything that could possibly be clickable or touchable.
  - When they know what they can do and can predict what will happen, they will interact with only what is necessary to complete their task and accomplish their goal.
Predictability

- Use previews to set expectations and define constraints for new or complex interactions.

- Show what can be done while the interface loads.

- Show a high-level view of the organisational system or structure to provide context (e.g., A map)
Predictability

- Labels, instructions, icons and images can all be used to set expectations about:
  1. What to do
  2. What will happen.
  3. Where the visitor will go.
  4. How the interface will respond.
Predictability

Potting Media & Repotting Orchids

Orchids do not grow in soil. Soil does not allow enough air to flow around orchid roots. There are many materials which can anchor orchid roots while still permitting air to move around them. Ground tree bark and moss are two of the most common. They are often combined with perlite, vermiculite, or charcoal to keep the mix open and permit air flow. Do not use barbecue charcoal since it contains chemicals that will kill the plant.

- **When to Re-Pot Your Orchid**
- **How to Re-Pot an Orchid**

Re-Potting Orchids

In the wild orchids are epiphytes, or air plants, growing with their roots exposed to the elements. In a pot with moss or bark, orchid roots don’t enjoy the same air movement. When the potting media starts to decompose, even less air can move through it. Some plants, like Paphiopedilum, are sensitive to decomposing potting media and need to be repotted annually. Others, like Cymbidiums, dislike repotting and do not need to be repotted often.

Only use clean pots with drainage holes in the bottom. Clay pots are porous, which means that water and air can pass through the sides. While the roots will enjoy the added circulation, they will also dry out faster, especially on hot summer days.
Feedback can provide information about:

1. Location
2. Status or progress
3. Future events or possibilities
4. Completion or closure
Feedback

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1. Wash your hands with soap and water first.
2. Remove the orchid from its pot and clean off the potting media. Water the plant to soften the roots. Give the pot a firm bang against a solid surface. Gently pull out the plant, and remove as much of the potting media from the roots as possible. Rinse away any remaining bark or moss.
3. Inspect the plant — After you remove the plant from its pot, examine the roots. How deeply did they grow into the pot? Are they fine roots or thick roots? Are they firm and healthy, with new, light-green growth? Or are they brown and squishy, which means they are dead and should be removed?
4. Remove dead roots and leaves — After washing off the roots, it should be easier to see which roots are firm and alive, and...
Feedback

- Do not interrupt the visitor’s experience or actions

- Feedback should complement the experience, not complicate it.

- Allow “undo” to reverse choices and correct mistakes.
  - Mistakes are incorrect choices, but they do not always result in errors.
  - Undo can be used to revert to prior states to recover from a mistake or from an error that may not be understood.
Feedback

- Every interaction should produce a noticeable and understandable reaction.

- Acknowledge interactions. Let people know they have been heard (or felt or seen).

- Failing to acknowledge an interaction can lead to unnecessary repetition of actions and possibly errors or mistakes.
Feedback: Progress Indicators

Definite
When the size or duration are known and progress may be calculated and shown.

- 68% transferred
- 1.3 MB of 1.9 MB downloaded
- 42 seconds remaining

Indefinite
When the size or duration are unknown and only ongoing progress may be shown.

Thank You!
Please wait a moment while we process your order. We appreciate your patience.
The five principles are interrelated:

- When available interactions are visible and noticed, and when their outcomes can be accurately predicted, people will interact with the interface.

- When meaningful feedback is provided after an interaction, people will understand how their actions led to the outcomes.

- When people understand the feedback from their interactions, they learn how the interface works. With continued practice and observation of the interface, their learning becomes stronger.
Summary (cont.)

- Once people have learned how an interface works, they are able to transfer that knowledge and skill to other, similar interfaces.

- As long as the interfaces are consistent within themselves and across related or similar experiences, people will be able to apply what they have learned and interact more efficiently and effectively.
How the Five Principles are Related
Summary

**Consistency**
Strive for consistency in appearance and behaviour, because it facilitates usability, credibility, and trust.

**Visibility**
Most interfaces are inherently visual, so make certain that people know when and where they can interact with it.

**Learnability**
Meaningful and unambiguous labels, content, and interactions make it possible to quickly understand and repeat an experience.

**Predictability**
Set expectations about what will happen during and after an interaction to minimize confusion and dissatisfaction.

**Feedback**
Acknowledge interactions and provide information about status, location, progress, and completion.
Remember...

- Interaction design is ultimately not about the behaviour of the interface, it is about the behaviour of people.
Summary

- Professional design is important to establish credibility and trust.
  - Nuance and polish often make the difference between average and excellent.
  - Do not be different just to be different, and do not keep reinventing the wheel.

- Leverage design patterns
  - A reusable solution to a recurring problem.
  - The content may change, but the interaction and process remains the same.
  - Interactions and outcomes become consistent and predictable.
Summary

- Prototype!
  - Sometimes the design in our head is a better idea than the actual experience.
  - Solicit feedback from others, and do not take constructive criticism personally.
You are not designing for yourself!