Jakob Nielsen and Hoa Loranger, "Prioritizing Web Usability"
Nielsen Norman Group, https://www.nngroup.com/articles/usability-101-introduction-to-usability/
Ben Shneiderman, Nicholas Diakopoulos, Steven Jacobs, Catherine Plaisant, Maxine Cohen, Niklas Elmqvist, "Designing the User Interface: Strategies for Effective Human-Computer Interaction"

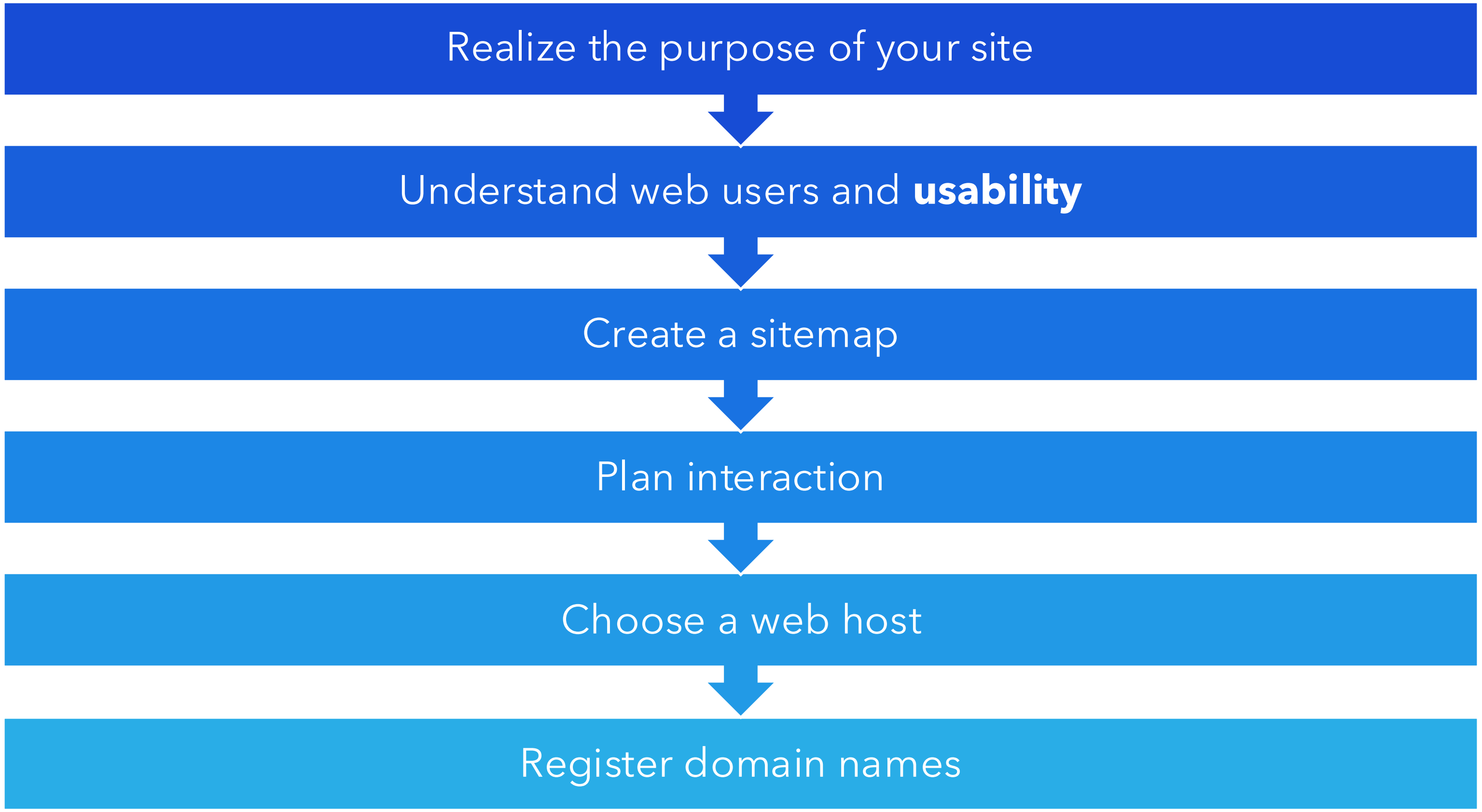
Programming Languages for Web Applications

Important Design Considerations II

CS4640, University of Virginia, Spring 2025

Robbie Hott with content from Praphamontripong, Soffa

Planning Your Website



Realize the purpose of your site

Understand web users and **usability**

Create a sitemap

Plan interaction

Choose a web host

Register domain names

What is **usability**?

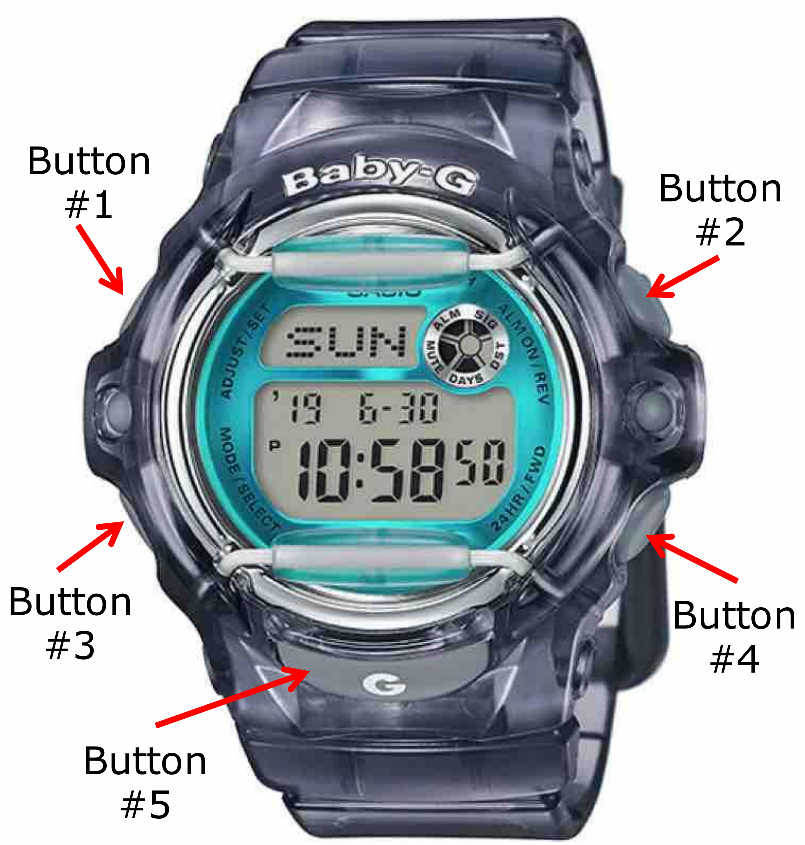
- **Learnability**: How easy is it for users to start using the system?
- **Efficiency**: How quickly can they perform tasks?
- **Memorability**: How easily can returning users reestablish proficiency?
- **Errors**: How many errors do users make, how severe are these errors, and how easily can they recover from the errors? How much does the system help prevent errors?
- **Satisfaction**: How pleasant is it to use the system?

Why is usability important?

- If a website is difficult to use, people **leave**.
- If the users can’t tell what the site offers, they **leave**.
- If users get lost on a website, they **leave**.
- If a website’s information is hard to read or doesn’t answer users’ questions, they **leave**.
- Users won’t read a site; they scan the site. When users encounter a difficulty, they **leave**.

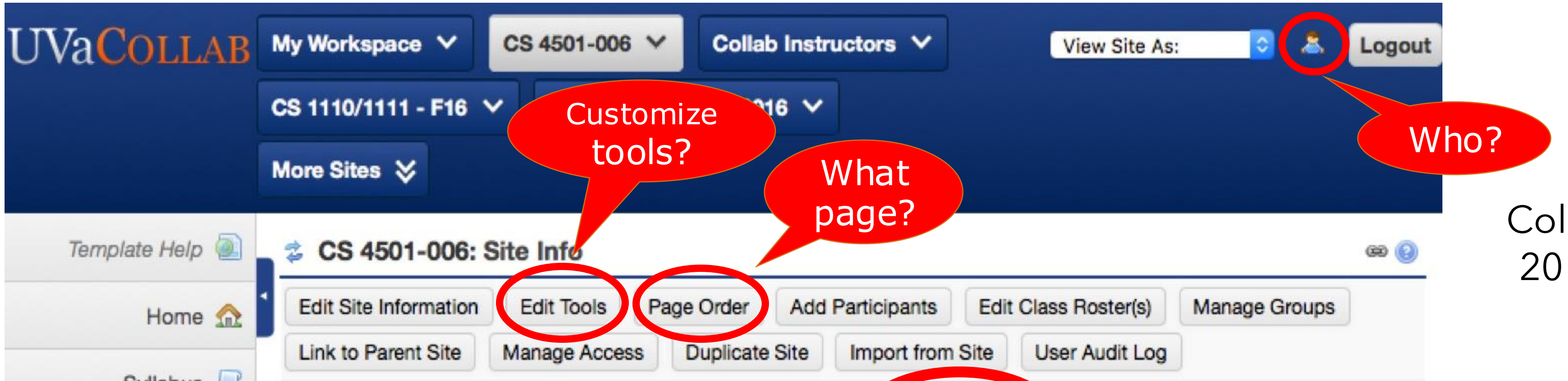
Design for the User

- Engineers tend to focus on *functionality*
- If users cannot understand how to use all the exciting features … **they won’t**



comes with 36-page manual

Design for the User

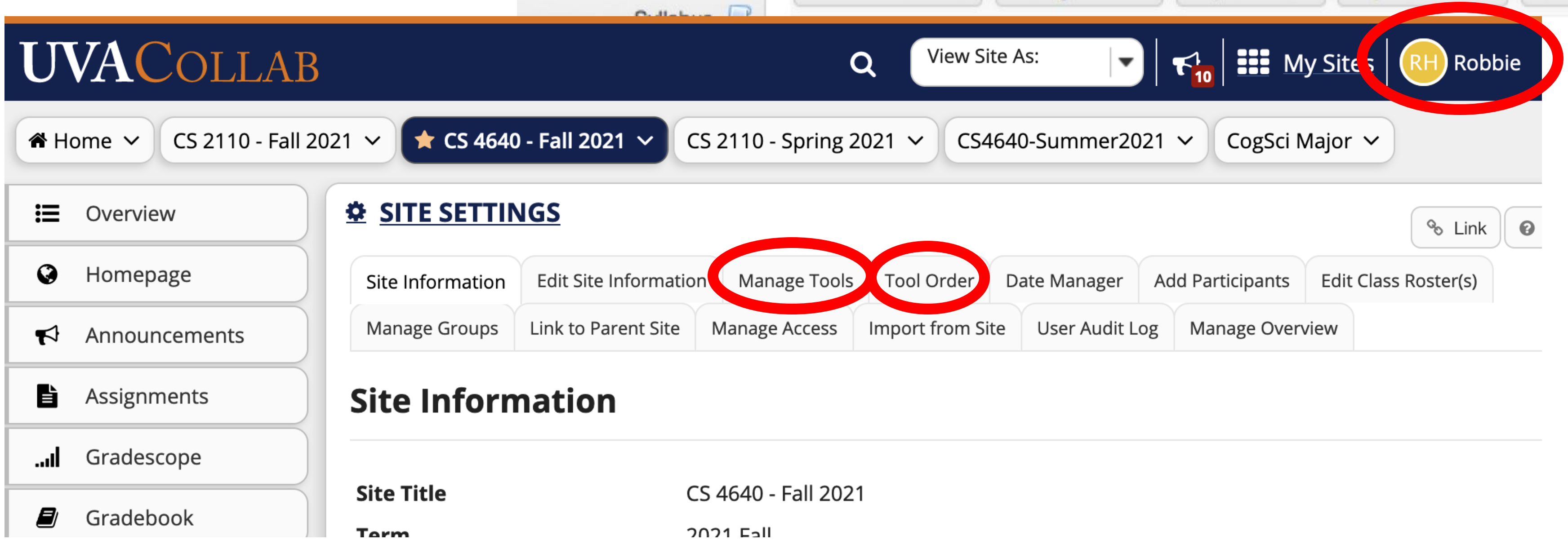


Customize tools?

What page?

Who?

Collab 2016



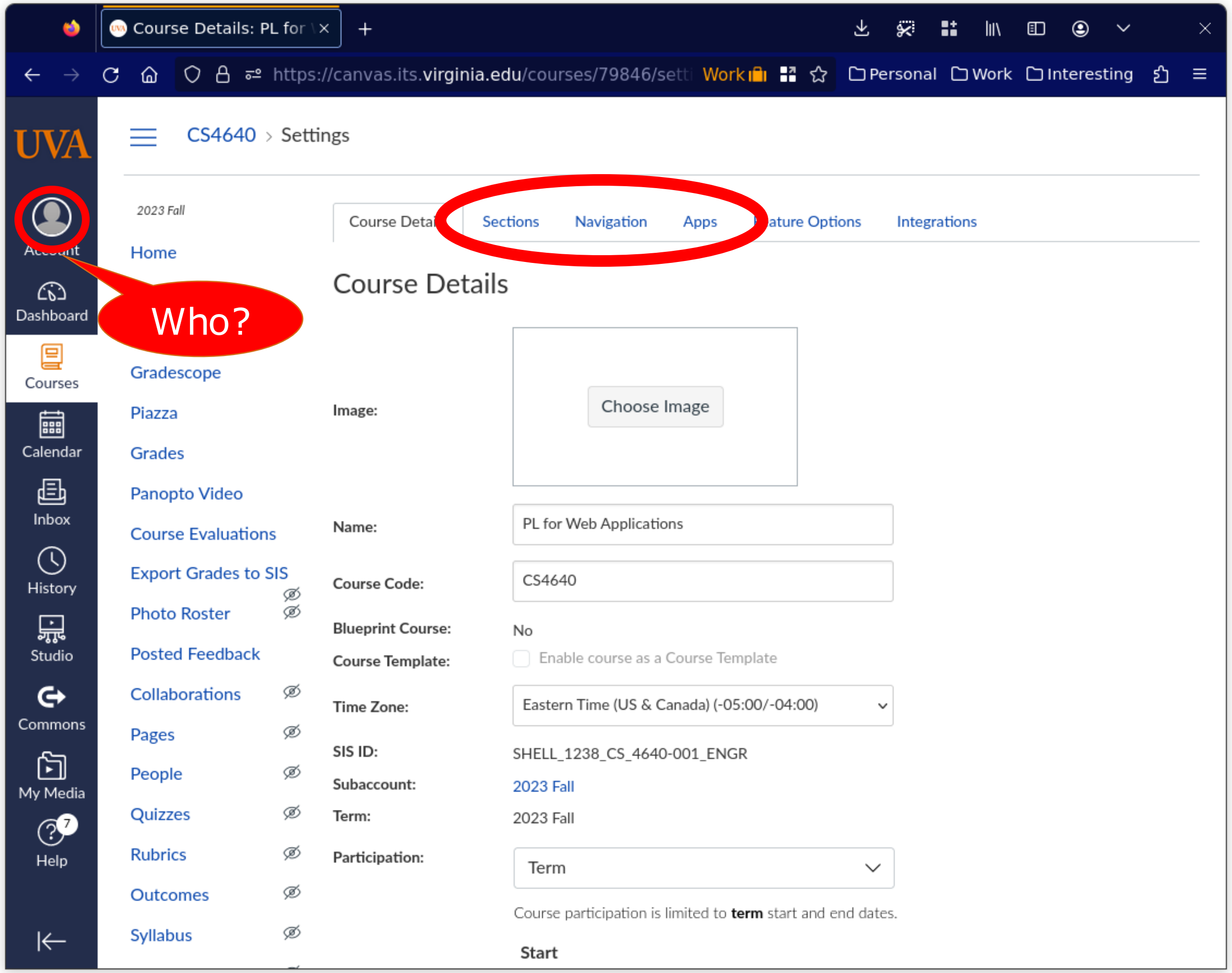
Site Information

Site Title CS 4640 - Fall 2021

Term 2021 Fall

Collab 2021

Design for the User



Course Details

Image:

Name: PL for Web Applications

Course Code: CS4640

Blueprint Course: No

Course Template: □ Enable course as a Course Template

Time Zone: Eastern Time (US & Canada) (-05:00/-04:00)

SIS ID: SHELL_1238_CS_4640-001_ENGR

Subaccount: 2023 Fall

Term: 2023 Fall

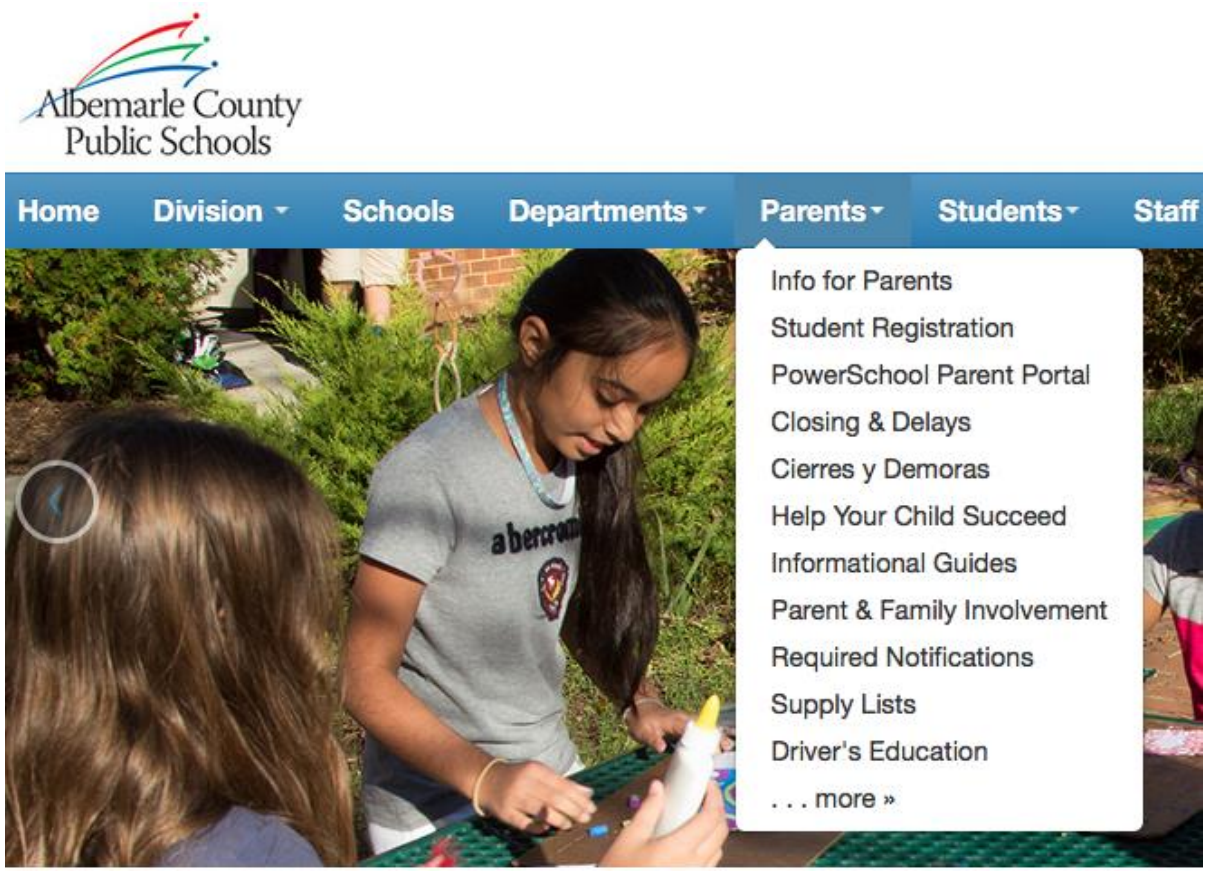
Participation: Term

Course participation is limited to **term** start and end dates.

Start

The 7±2 Rule

- Fundamental Software Design Principle
- Human's **short-term memory** can only hold about seven things at a time (plus or minus 2)
- Try to limit to about 7 items at a time

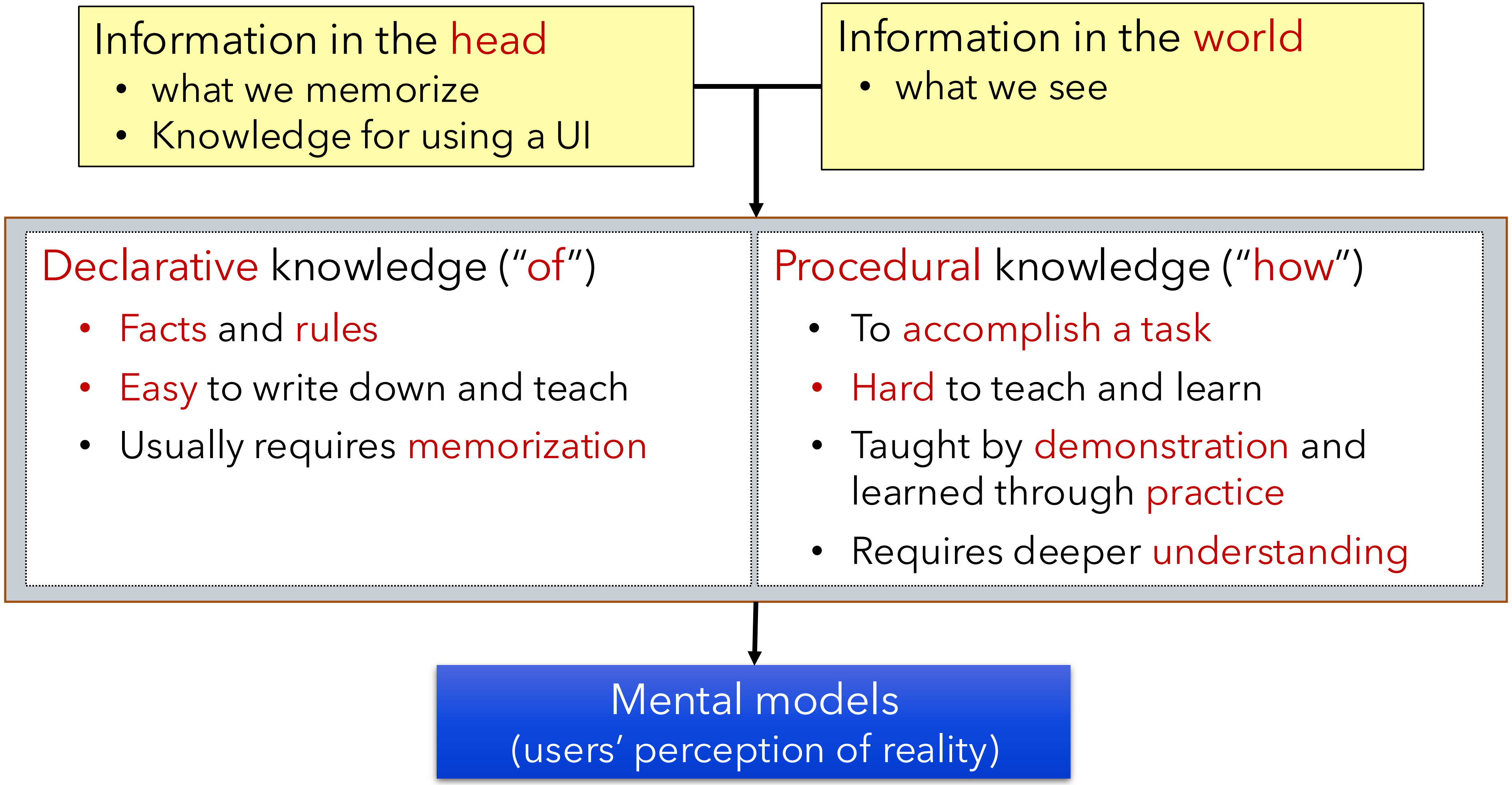


Design for the User: Designing UIs

- Inside-out design
  - Develop a system
  - Then add the interface
- Outside-in design
  - Design the interface
  - Then build the system to support it
- When design decisions are made, either the developer must conform to the users, or the user must conform to the developer.

Traditional computer science courses are almost entirely inside-out!

Match the User's Mental Model



Information in the head

- what we memorize
- Knowledge for using a UI

Information in the world

- what we see

Declarative knowledge ("of")

- Facts and rules
- Easy to write down and teach
- Usually requires memorization

Procedural knowledge ("how")

- To accomplish a task
- Hard to teach and learn
- Taught by demonstration and learned through practice
- Requires deeper understanding

Mental models
(users' perception of reality)

Match the User's Mental Model

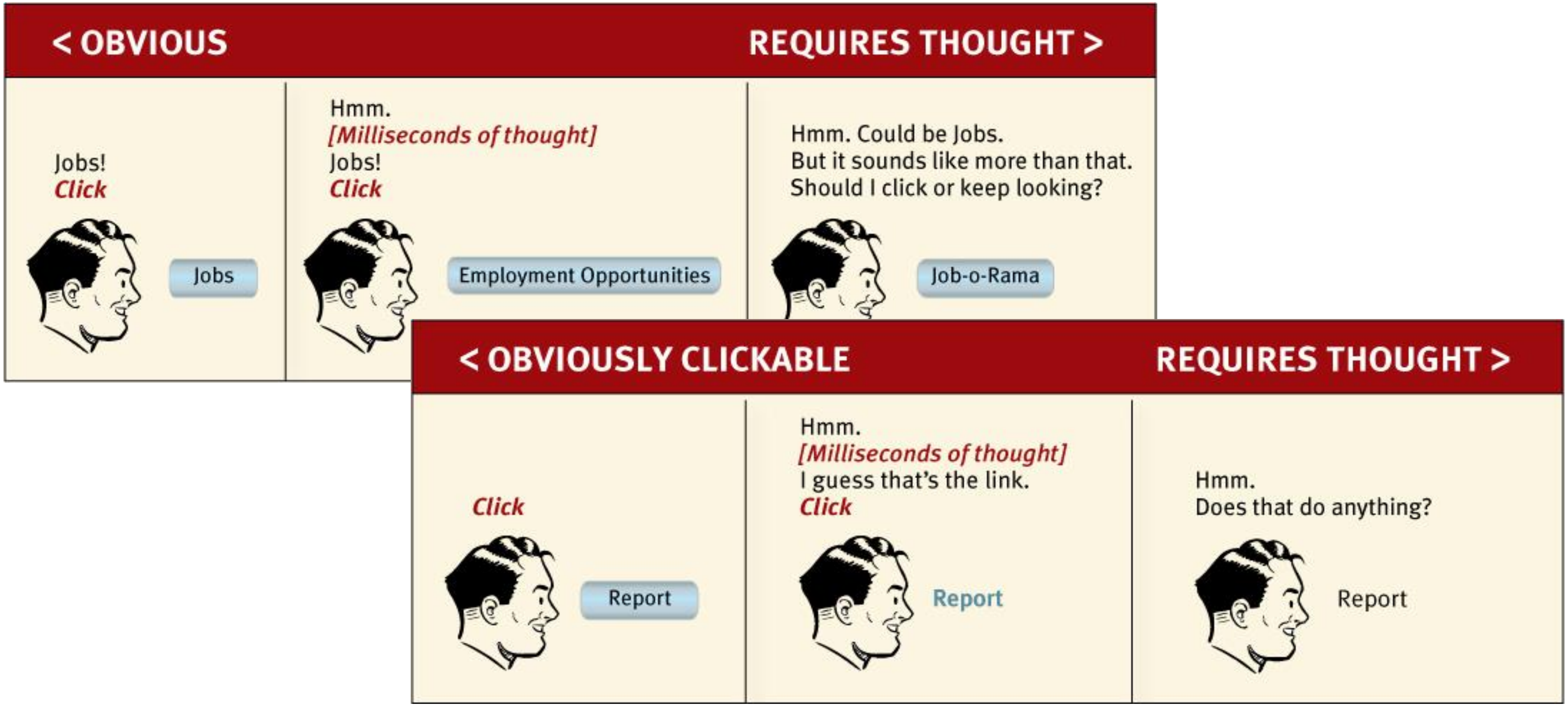
- When we push the gas pedal, the car goes faster
  - **Mental**: pushing makes it go faster
  - **Implementation**: more gas to the engine, more pressure, pistons go faster, tires go faster
- When we turn the wheel, the car turns
  - **Mental**: turning the wheel turns the tires
  - **Implementation**: turning the wheel turns something else (with help of a motor for power steering), which causes something else to turn, which puts the tires into a different angle

Match the User’s Mental Model

Other Examples

- Telephones: I want to call mom, not 1-434-xxx-xxxx
- Compile: I want to run my program, not compile, run
- File manager: dragging a file from window to window
  - Move on the same disk
  - Copy from USB flash drive to disk

Match the User's Mental Model


< OBVIOUS
REQUIRES THOUGHT >
Jobs! *Click*
Jobs
Hmm. *[Milliseconds of thought]* Jobs! *Click*
Employment Opportunities
Hmm. Could be Jobs. But it sounds like more than that. Should I click or keep looking?
Job-o-Rama
< OBVIOUSLY CLICKABLE
REQUIRES THOUGHT >
Click
Report
Hmm. *[Milliseconds of thought]* I guess that's the link. *Click*
Report
Hmm. Does that do anything?
Report

Figures from Steve Krug, "Don't Make Me Think."

Prevent Errors

- People often make mistakes
- Faster computers can increase errors
- Prevention strategies:
  - Flow: Users make fewer mistakes when the flow through the UI make sense
  - Education: Better error messages can reduce errors
- The software should prevent the user from making dangerous choices
- **Software seatbelts**: If the dangerous choice must be available, allow it with a hesitation (“are you sure?”)

Prevent Errors: Stuff Happens

- If an error is possible, **someone will make it**
- Good UI designers **must** assume all possible mistakes will happen
    - Design to minimize the chances of mistakes
    - Design to minimize the consequences of mistakes
    - Design to maximize recovery from mistakes
- **Do not assume users are perfect**

Prevent Errors: Help Users

- Increase visibility
  - The user can see the state of the system and how to use it
- Have a good conceptual model
  - The system works the way the users expect
- Ensure good mappings
  - Users can see relationships between actions and results, controls and effects, and state and appearance
- Provide feedback
  - The system tells the user what happened at every step

When something seems easy to use, it was probably hard to design

Reduce Excise Tasks

- There is overhead relating to solving problems:
  - **Revenue Tasks**: Sub-tasks that work to solve the problem directly
    - Studying
    - Doing homework
    - Listening to (and participating in) lectures
  - **Excise Tasks**: Sub-tasks that must be done but that are not really part of the problem
    - Driving to school
    - Parking
    - Doing homework that does not reinforce concepts
    - *The needs of the tools or process, not the users*

Reduce Excise Tasks

https://www.youtube.com/watch?v=3Sk7cOqB9Dk

- What excise tasks did you experience in the video?
- How could we mitigate / reduce those tasks?

Reduce Excise Tasks: Techniques

- Put the mouse/keyboard focus in the first input box
- Don’t interrupt flow unless necessary
- Try not to show error messages
- Don’t ask users to “correct” what they don’t understand
- Don’t separate input from output
- Don’t make users remember where files are
  - MUST let users define file organization
  - MS Word does not, Eclipse does not, VSCode does not

Reduce Excise Tasks: Techniques

- Don’t require passwords for everything
  - Authentication is almost always excise!
- Don’t make users move or resize windows
- Don’t make users remember or reenter personal settings
- Don’t make users enter unnecessary data
  - Telephone number as a DB key – use the name or invent a number!
- Don’t make users confirm actions – unless undo is impossible
- Avoid or correct errors

Reduce Excise Tasks: Techniques

- Remember what the user did the last time
- Avoid unnecessary questions
- *Imagine a boyfriend (or girlfriend) that asked you every time whether you wanted cream with your coffee!*

- Dialog boxes ask questions, buttons offer choices

Shneiderman’s Five Criteria

1. **Time to learn**: The time it takes to learn some basic level of skills
2. **Speed of UI performance**: Number of UI “interactions” it takes to accomplish tasks
3. **Avoiding user errors**: How often users make mistakes
4. **Retention of skills**: How well users remember how to use the UI after not using for a time
5. **Subjective satisfaction**: The lack of annoying features

Shneiderman’s Five Criteria

Time to learn

- How long it takes to learn to use an interface
- With complicated UIs, learning happens in “plateaus”
- Well designed interfaces make
  - The first plateau easy to get to
  - Subsequent plateaus clearly available

Shneiderman’s Five Criteria

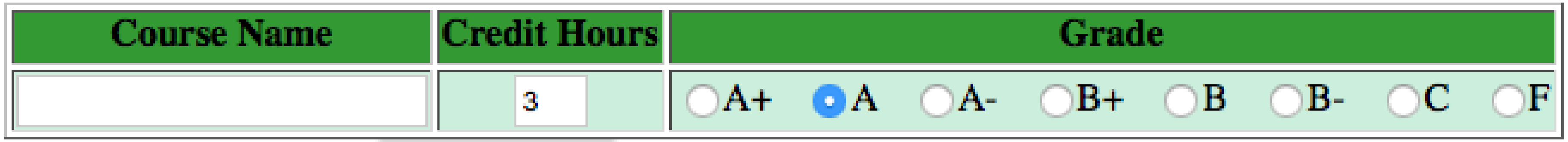
Speed of UI performance

- How fast *users* can navigate the interface (not about interface performance)
- Interaction points: where the users interact with the software
    - (e.g., buttons, text boxes, or commands)
- Speed of UI performance is roughly the number of interactions needed to accomplish a task
- Good UI designers should reduce the number of keyboard-to-mouse switches

Shneiderman’s Five Criteria

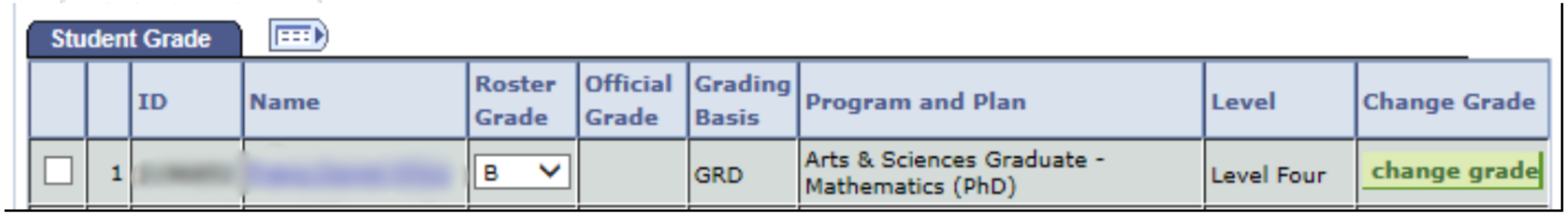
Avoiding user errors

- Users will always make mistakes
- UIs can encourage or discourage mistakes
  - Consistency, instructions, navigation, …
- Consider:
  - Entering letter grades in a dropdown instead of radio buttons



Course Name	Credit Hours	Grade
	3	○A+ ●A ○A- ○B+ ○B ○B- ○C ○F

Add another course



Student Grade

		ID	Name	Roster Grade	Official Grade	Grading Basis	Program and Plan	Level	Change Grade
□	1	[redacted]	[redacted]	B		GRD	Arts & Sciences Graduate - Mathematics (PhD)	Level Four	change grade

Shneiderman's Five Criteria

Retention of skills

- Some interfaces are easy to remember, some are hard
- If interfaces flow logically, they are very easy to remember
  - I.e., They match the user's mental model or expectations
- If an interface is very easy to learn, then the retention is not important
  - Users can just learn again
- Retention is typically more important with UIs that are hard to learn

Shneiderman’s Five Criteria

Subjective satisfaction

- How much the users “like” the UI
  - How comfortable the users are with the software
  - **This depends on the user** (thus the word “subjective”)
- Think of it in reverse: users are unhappy when there is something annoying in the interface
  - **Blinking**
  - Ugly colors
  - Spelling errors in masssages
- Most important in competitive software systems
  - Like … everything on the Web!

Shneiderman’s Five Criteria

- We always have tradeoffs among the criteria
- Most people today equate “user friendly” with “time to learn” – this is a narrow view
- Making a UI easier to learn often slows it down!
  - Ex: Many GUIs are easy to learn, but slow to navigate
  - Ex: Many command line shells / languages are fast, but hard to learn
- To be an effective UI designer:
  - Consider each criterion carefully and prioritize before designing
  - Decide what is acceptable for each of the five criteria

Improving Usability: Usability Testing

- Get representative users
- Ask the users to perform representative tasks
- Observe how the users use or interact with the UI
  - What the users do
  - Where they succeed
  - Where they have difficulties with the UI
- They will likely not perform the tasks in the way you expect

Wrapping Up: Usability Tips

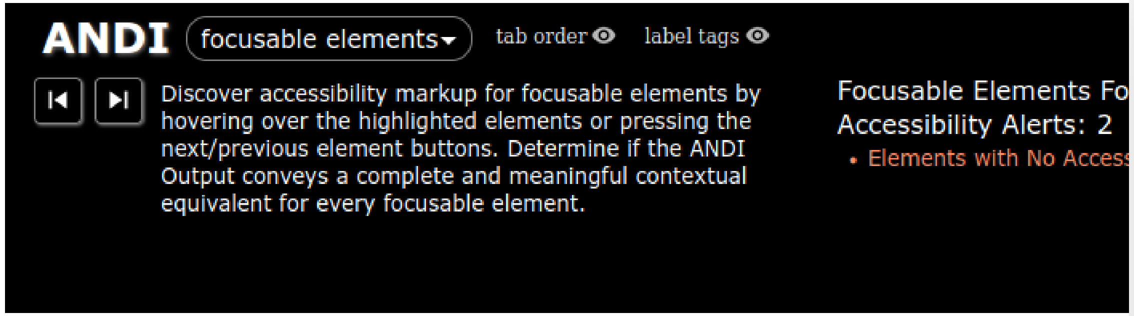
- Test the old design before starting a new design
- Test your competitors' designs
- Study how users use the system
- Make paper prototypes and test them
  - Transform paper prototypes to executable prototypes, iteratively refine the design idea
- Inspect the design relative to established usability guidelines
  - Don't wait until you have a fully implemented design. It will be impossible to fix the critical usability problems, especially problems related to architectures.
- Start user testing early in the design process and keep testing every step
- Implement the final design, test it again.

Accessibility: Section 508

- Websites *should* be accessible to all
- 1998 amendment to Rehabilitation Act
  - Federal or governmental websites *must* be accessible to people with disabilities
  - Eliminate barriers in information technology
- Important factors to be aware of
  - Screen reader use of your site
  - Cues that are not solely auditory
  - Color use for those who are color blind

Accessibility Tools

- ANDI: Accessible Name and Description Inspector
  - Developed by Social Security Administration
  - Tests for accessibility and Section 508 compliance
- Colorblind Web Page Filter
  - Renders your website using color filters

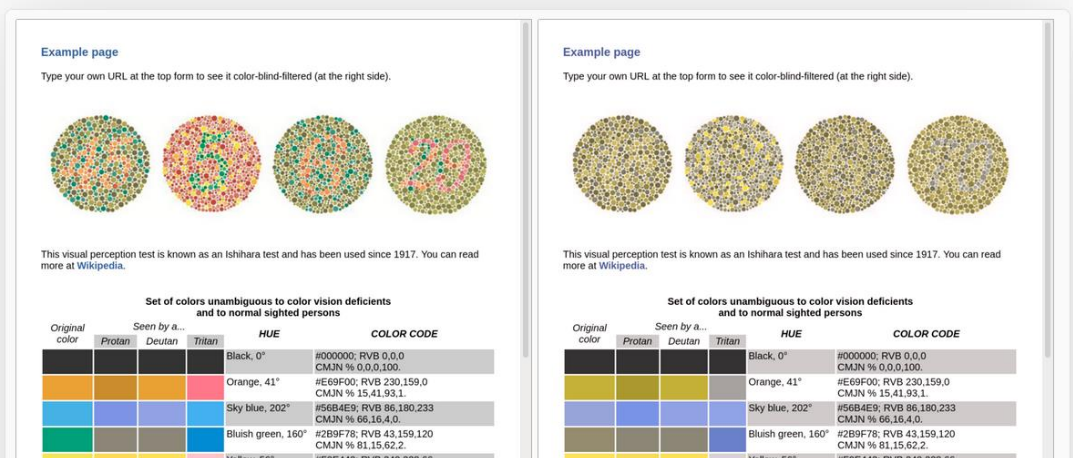


Discover accessibility markup for focusable elements by hovering over the highlighted elements or pressing the next/previous element buttons. Determine if the ANDI Output conveys a complete and meaningful contextual equivalent for every focusable element.

Focusable Elements Fo

Accessibility Alerts: 2

- Elements with No Access



Example page

Type your own URL at the top form to see it color-blind-filtered (at the right side).

This visual perception test is known as an Ishihara test and has been used since 1917. You can read more at Wikipedia.

Set of colors unambiguous to color vision deficients and to normal sighted persons

Original color	Seen by a... Protan	Deutan	Tritan	HUE	COLOR CODE
■	■	■	■	Black, 0°	#000000; RVB 0,0,0 CMJN % 0,0,0,100.
■	■	■	■	Orange, 41°	#E69F00; RVB 230,159,0 CMJN % 15,41,93,1.
■	■	■	■	Sky blue, 202°	#56B4E9; RVB 86,180,233 CMJN % 66,16,4,0.
■	■	■	■	Bluish green, 160°	#2B9F78; RVB 43,159,120 CMJN % 81,15,62,2.

Example page

Type your own URL at the top form to see it color-blind-filtered (at the right side).

This visual perception test is known as an Ishihara test and has been used since 1917. You can read more at Wikipedia.

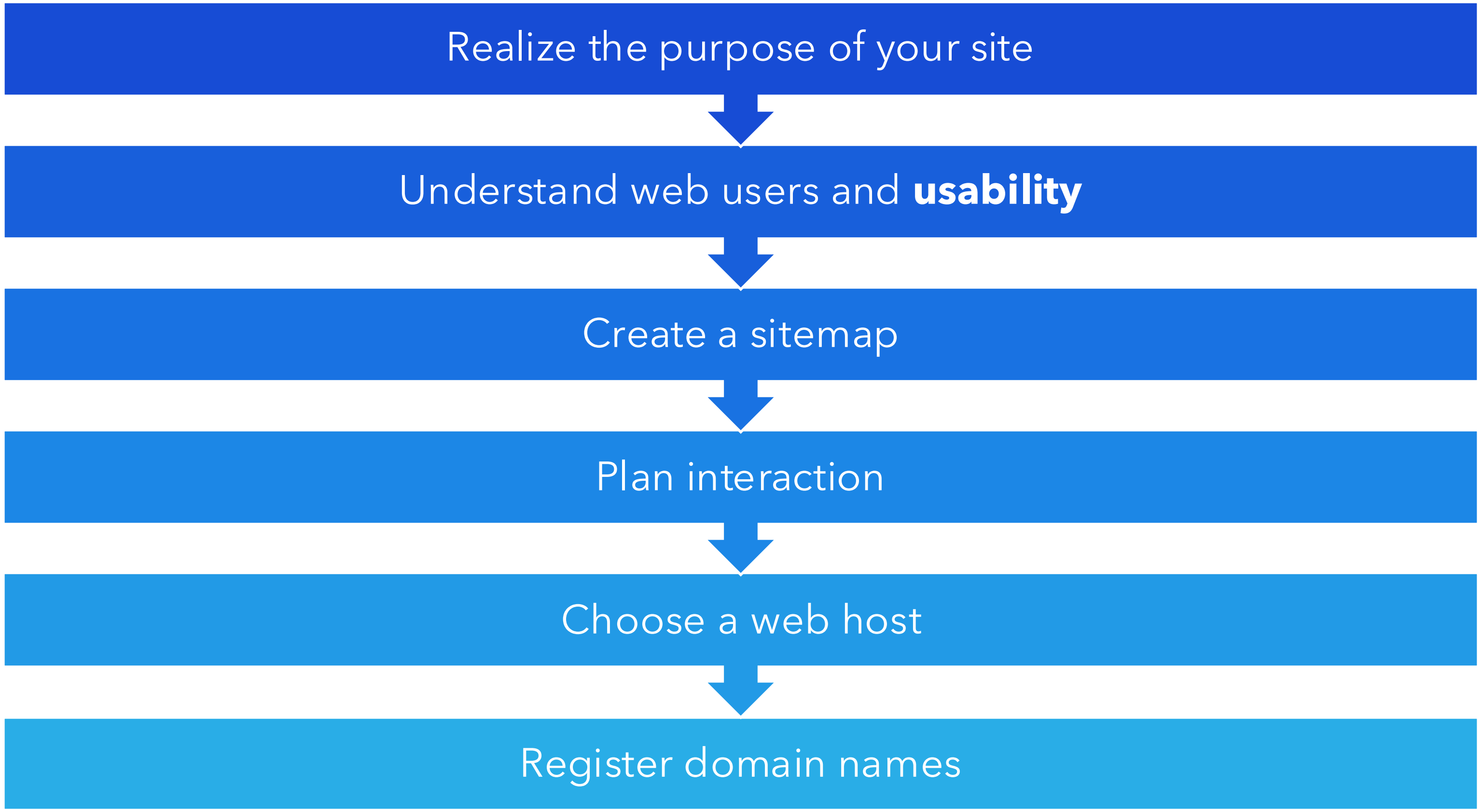
Set of colors unambiguous to color vision deficients and to normal sighted persons

Original color	Seen by a... Protan	Deutan	Tritan	HUE	COLOR CODE
■	■	■	■	Black, 0°	#000000; RVB 0,0,0 CMJN % 0,0,0,100.
■	■	■	■	Orange, 41°	#E69F00; RVB 230,159,0 CMJN % 15,41,93,1.
■	■	■	■	Sky blue, 202°	#56B4E9; RVB 86,180,233 CMJN % 66,16,4,0.
■	■	■	■	Bluish green, 160°	#2B9F78; RVB 43,159,120 CMJN % 81,15,62,2.

Accessibility Tools

- Lighthouse by Google Chrome
  - Includes an Accessibility audit
  - Available in Chrome or Node
  - https://github.com/GoogleChrome/lighthouse

Planning Your Website



Realize the purpose of your site

Understand web users and **usability**

Create a sitemap

Plan interaction

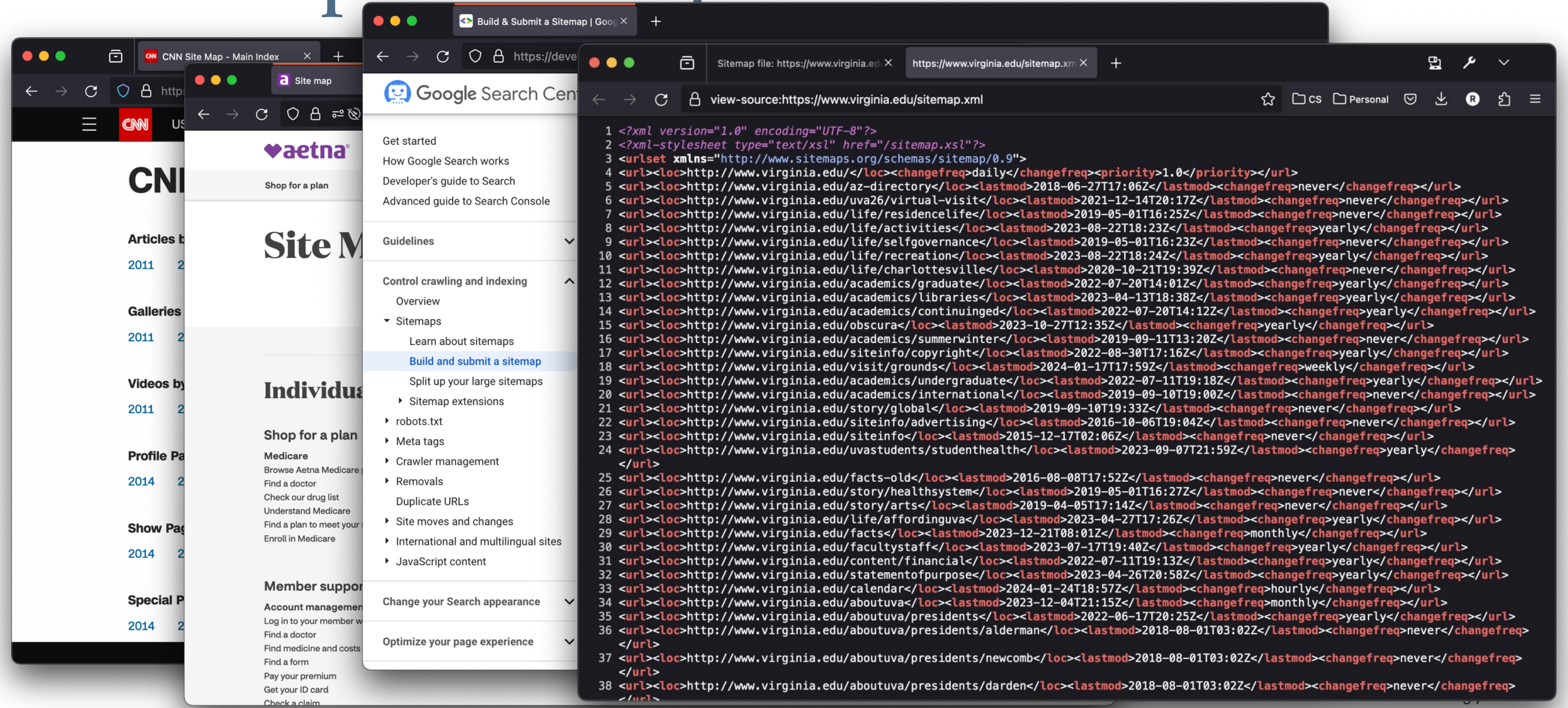
Choose a web host

Register domain names

Creating a Sitemap

- Sitemaps – provide overview of the main paths users can take to get between main content areas
  - Help people if they get lost on your site or need to find something
  - Used by search engines to discover complete site contents (XML)
- Organize the content into meaningful sections
  - *Match users' mental model*
- Consider how the sections are related to each other
- Use simple language to define each section, **no jargon**

Sitemaps - Example



CNN Site Map - Main Index

CNN

Articles b

2011 2

Galleries

2011 2

Videos by

2011 2

Profile Pa

2014 2

Show Pag

2014 2

Special P

2014 2

Site map

aetna

Shop for a plan

Site M

Individua

Shop for a plan

Medicare

Browse Aetna Medicare

Find a doctor

Check our drug list

Understand Medicare

Find a plan to meet your

Enroll in Medicare

Member suppo

Account managemen

Log in to your member w

Find a doctor

Find medicine and costs

Find a form

Pay your premium

Get your ID card

Check a claim

Build & Submit a Sitemap | Goog

https://deve

Google Search Cen

- Get started
- How Google Search works
- Developer's guide to Search
- Advanced guide to Search Console
- Guidelines
- Control crawling and indexing
  - Overview
  - Sitemaps
    - Learn about sitemaps
    - Build and submit a sitemap
    - Split up your large sitemaps
    - Sitemap extensions
  - robots.txt
  - Meta tags
  - Crawler management
  - Removals
  - Duplicate URLs
  - Site moves and changes
  - International and multilingual sites
  - JavaScript content
- Change your Search appearance
- Optimize your page experience

Sitemap file: https://www.virginia.ed

https://www.virginia.edu/sitemap.xm

view-source:https://www.virginia.edu/sitemap.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="/sitemap.xsl"?>
<urlset xmlns="http://www.sitemaps.org/schemas/sitemap/0.9">
<url><loc>http://www.virginia.edu/</loc><changefreq>daily</changefreq><priority>1.0</priority></url>
<url><loc>http://www.virginia.edu/az-directory</loc><lastmod>2018-06-27T17:06Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/uva26/virtual-visit</loc><lastmod>2021-12-14T20:17Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/life/residencelife</loc><lastmod>2019-05-01T16:25Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/life/activities</loc><lastmod>2023-08-22T18:23Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/life/selfgovernance</loc><lastmod>2019-05-01T16:23Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/life/recreation</loc><lastmod>2023-08-22T18:24Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/life/charlottesville</loc><lastmod>2020-10-21T19:39Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/academics/graduate</loc><lastmod>2022-07-20T14:01Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/academics/libraries</loc><lastmod>2023-04-13T18:38Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/academics/continuinged</loc><lastmod>2022-07-20T14:12Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/obscura</loc><lastmod>2023-10-27T12:35Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/academics/summerwinter</loc><lastmod>2019-09-11T13:20Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/siteinfo/copyright</loc><lastmod>2022-08-30T17:16Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/visit/grounds</loc><lastmod>2024-01-17T17:59Z</lastmod><changefreq>weekly</changefreq></url>
<url><loc>http://www.virginia.edu/academics/undergraduate</loc><lastmod>2022-07-11T19:18Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/academics/international</loc><lastmod>2019-09-10T19:00Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/story/global</loc><lastmod>2019-09-10T19:33Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/siteinfo/advertising</loc><lastmod>2016-10-06T19:04Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/siteinfo</loc><lastmod>2015-12-17T02:06Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/uvastudents/studenthealth</loc><lastmod>2023-09-07T21:59Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/facts-old</loc><lastmod>2016-08-08T17:52Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/story/healthsystem</loc><lastmod>2019-05-01T16:27Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/story/arts</loc><lastmod>2019-04-05T17:14Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/life/affordinguva</loc><lastmod>2023-04-27T17:26Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/facts</loc><lastmod>2023-12-21T08:01Z</lastmod><changefreq>monthly</changefreq></url>
<url><loc>http://www.virginia.edu/facultystaff</loc><lastmod>2023-07-17T19:40Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/content/financial</loc><lastmod>2022-07-11T19:13Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/statementofpurpose</loc><lastmod>2023-04-26T20:58Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/calendar</loc><lastmod>2024-01-24T18:57Z</lastmod><changefreq>hourly</changefreq></url>
<url><loc>http://www.virginia.edu/aboutuva</loc><lastmod>2023-12-04T21:15Z</lastmod><changefreq>monthly</changefreq></url>
<url><loc>http://www.virginia.edu/aboutuva/presidents</loc><lastmod>2022-06-17T20:25Z</lastmod><changefreq>yearly</changefreq></url>
<url><loc>http://www.virginia.edu/aboutuva/presidents/alderman</loc><lastmod>2018-08-01T03:02Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/aboutuva/presidents/newcomb</loc><lastmod>2018-08-01T03:02Z</lastmod><changefreq>never</changefreq></url>
<url><loc>http://www.virginia.edu/aboutuva/presidents/darden</loc><lastmod>2018-08-01T03:02Z</lastmod><changefreq>never</changefreq></url>
```

Plan Interaction

- Every site allows people to navigate it using **links**, and most enable the use of contact **forms** and **search boxes**
- Some sites enable sophisticated interactions
- **Don’t overcomplicate your site**
  - Consider how you want users to interact with content
  - Hide and reveal parts of the page in response to user requests
- What kind of experience do you want users to have?
- The degree and type of interaction determines the complexity and cost

Choosing a Web Host

- There are a lot of options!
  - Need to find a good fit
- Variety of options
  - Shared hosting
    - Cost effective, but sharing resources with other sites
  - VPS hosting (Virtual Private Server)
    - Dedicated resources, but still sharing physical hardware with other sites
  - Dedicated hosting
    - Complete control over server, but expensive
  - Cloud Hosting
    - Scalable, but possibly unpredictable pricing

GoDaddy DreamHost bluehost aws HostGator Google Cloud and many many more!

Similar to our cs4640 server setup

Choosing a Web Host

- Monthly costs usually tiered according to 2 parameters (for shared hosting):
  - Storage space:
    - How much space all your site files occupy on disk
    - Do you allow users to contribute content?
  - Bandwidth:
    - How much data you can send over the Internet each month
    - How many visitors? How many pages do they look at? How big are the files?
- It can be hard to find a good hosting company online
  - Some companies are only reselling the hosting service! They aren't hosting at all.
  - Well established hosting companies include GoDaddy.com, 1and1.com, enom.com, DreamHost, Blue Host

Registering a Domain Name

- Domain names matter – you want it to be memorable!
- Domain names can be as cheap as $10 per year or as expensive as $16 million*
  - wow.solar -- registered in tens, sold in thousands
- Owning your domain name gives you independence
- Possible (*but not recommended*) to launch a website without having your own domain name
  - Imagine hosting your site as part of someone else or some company's website … what if their business was sold on or their site was shut down?

* https://startbloggingonline.com/how-much-is-a-domain-name/

Buying a Domain Name

- Keep the domain name short and memorable
  - Avoid ambiguous domain name
  - Avoid 0 and o and O, 1 and l, _, special symbols or characters
- Any reputable hosting company can tell you whether a domain is already registered
- It is usually easier and cheaper to buy your domain name from your hosting company
  - Beware when buying from individuals or unfamiliar companies
  - Beware of companies claiming to provide appraisal services

Buying a Domain Name

- Domain extension can help you tell visitors the kind of site you have
  - `.co.uk` for UK companies
  - `.ca` for Canadian websites
  - `.mobi` for mobile websites
  - `.com`, `.info`, `.net`, `.org` can be used for anything
  - Most US websites use **`.com`**
- You can invent creative domains using the extensions of foreign countries
  - `.tv` (Tuvalu) or `.me` (Montenegro)
- Many new, rarely seen extensions are available (you *can* create one for $$$)
  - `.cool`, `.dating`, `.games`, `.fyi`, `.vip`, `.xyz`, `.museum`
  - `.website`, `.ws` (Western Samoa and short for website), `.us`

https://en.wikipedia.org/wiki/List_of_Internet_top-level_domains

Buying a Domain Name

- Don’t try to buy all the different variants of your domain name.
    - They are way too many!
    - It might be worth buying a couple of domains for key markets you want to work in (such as `.com` and `.co.uk` if you intend to create different websites for the US and UK)
- Search engines will consider any keywords in your domain name to be important, but don’t over do it
- Don’t register a domain name that include a word or phrase that somebody else has trademarked in your market sector.
    - This might lead to infringement, and you might lose the domain name

Domain Name Pitfalls

- Domain names are valuable assets. It is like digital houses. It is important to look after yours.
- The **renewal date** of your domain name is a matter of public record.
  - If you missed the renewal date, **someone else might take it**.

Whois

```
whois robbiehott.com

Domain Name: robbiehott.com
Registry Domain ID: 1562638721_DOMAIN_COM-VRSN
Registrar WHOIS Server: WHOIS.DREAMHOST.COM
Registrar URL: WWW.DREAMHOST.COM
Updated Date: 2021-06-15T08:08:12.00Z
Creation Date: 2009-07-17T02:47:00.00Z
Registrar Registration Expiration Date: 2024-07-17T02:47:50.00Z
Registrar: DREAMHOST
Registrar IANA ID: 431
Domain Status: ok https://www.icann.org/epp#ok
Registrant Name: Proxy Protection LLC
Registrant Organization: Proxy Protection LLC
Registrant Street: 417 Associated Rd #324
Registrant Street: C/O robbiehott.com
Registrant City: Brea
Registrant State/Province: CA
Registrant Postal Code: 92821
Registrant Country: US
Registrant Phone: +1.7147064182
Registrant Phone Ext:
Registrant Fax:
Registrant Email: b8av3vgmspz74rd@proxy.dreamhost.com
...
```

Domain Name Pitfalls

- Rival domain registration companies sometimes phone up or post letters that look like invoices and ask you to renew. (whois)
  - Many people are tricked into transferring management of their domain name to another company.
  - Can be tricked into buying “domain name insurance” or something similar
  - To protect yourself, know when your domains are due for renewal and beware of any communications that come too early or from unfamiliar organizations
  - **If you get any paperwork you don’t understand, ask your current hosting company to explain it**

Domain Name Pitfalls

- Some scams involve companies trying to sell you domain names you don’t need
- Another scam involves companies trying to claim ownership of a similar domain name and threaten you to forfeit yours

Planning Your Website - Summary

- Always comply with conventions and standard design elements
  - Users know what features to expect
  - Users know how the features look
  - Users know where to find features
  - Users know how to operate features
  - Users do not ponder meaning of unknown design elements
  - Users do not miss important features
  - Users do not get surprised
- Current users “visit” not “browse”
- Experienced users spend less time on pages than inexperienced users
- Younger users spend less time than older users
- The concept of “site loyalty” does not exist

There is more to consider!

- Promoting your site
  - Search engine optimization
- Building effective navigation
- Layout and Design decisions and pitfalls
- Content creation

See our course website for related slides and readings!