#inspiration

APPLIED SCIENCES GROUP: HIGH PERFORMANCE TOUCH, MAR 6, 2012: http://youtu.be/vOvQCPLkPt4

PAUL DIETZ
Assistant Director
Microsoft Applied Sciences
You should have received an email with student feedback on your video prototype. Use this to improve your video for the final project assignment.
Lo-to-Mid Fidelity Prototype, Testing, and Refinement

Write-up Due: TBD

Assignment Overview

In this assignment you will:

1. Iterate on the lo-to-mid fidelity prototypes you built for the last assignment
2. Use your prototype to conduct usability tests with representative users
3. Refine your design based on feedback and lessons from these tests
to understand them on their own terms. The next stage is to try to ground what one observes in a broader discourse of theory and ideas, in order to provide a framework for understanding cultural dynamics.

Many people ask me why I bother driving around the United States talking to teens when I can see everything that they do online. Unfortunately, what's visible online is only a small fraction of what they do and it's easy to misinterpret why teens do something simply by looking at the traces of their actions. Getting into their lives, understanding their logic, and seeing how technology connects with daily practice are critically important, especially because teens don't have distinct online versus offline lives. It's all intertwined so it's necessary to see what's going on from different angles. Of course, this is just the data collection process. I tend to also confuse people because I document a lot of my thinking and findings as I go, highlighting what I learned publicly for anyone to disagree with me. I find that my blog provides a valuable feedback loop and I'm especially fond of the teen commentators who challenge me on things. I've hired many of them.

I know you have encountered some surprises—or maybe even a revelation—would you tell us about it please? From 2006 through 2007, I was talking with teens in different parts of the country and I started noticing that some teens were talking about MySpace and some teens were talking about Facebook. In Massachusetts, I met a young woman who uncomfortably told me that the black kids in her school were on MySpace while the white kids were on Facebook. She described MySpace as like 'ghetto.' I didn't enter into this project expecting to analyze race and class dynamics in the United States but, after her comments, I couldn't avoid them. I started diving into my data, realizing that race and class could explain the difference between which teens preferred which sites. Uncomfortable with this and totally afar from my intellectual strengths, I wrote a really awkward blog post about what I was observing. For better or worse, the BBC picked this up as a 'formal report from UC Berkeley' and I received over 10,000 messages over the next week. Some were hugely critical, with some making assumptions about me, and my intentions. But the teens who wrote consistently agreed. And then two teens starting pointing out to me that it wasn't just an issue of choice, but an issue of movement, with some teens moving from MySpace to Facebook because MySpace was less desirable and Facebook was safe. Anyhow, recognizing the racist and classist roots of this, I spent a lot of time trying to unpack the different language that teens used when talking about these sites in a paper called 'White Flight in Networked Publics? How Race and Class Shaped American Teen Engagement with MySpace and Facebook.'
Today:

Wrap-Up Previous Visual Design Lecture

Evaluation!
The golden ratio is also known as the golden mean, the golden number, golden section, golden proportion, divine proportion, and sectio aurea.

\[
\frac{a + b}{a} = \frac{a}{b} = \phi
\]

\[
\phi = \frac{1 + \sqrt{5}}{2} = 1.6180339887\ldots
\]
Stradivari utilized the **golden ratio** in the construction of his violins
Stradivari utilized the **golden ratio** in the construction of his violins.

\[
\frac{B}{A} = 1.618
\]

Golden Rectangle
Has side lengths with the golden ratio: ~1:1.618

Golden Rectangle
Has side lengths with the golden ratio: ~1:1.618

Golden Rectangle
Has side lengths with the golden ratio: ~1:1.618

A distinctive feature of the golden rectangle is that when the square section is removed, the remainder is another golden rectangle.

Square removal can be repeated infinitely, in which case the corners of the squares form the sequence of points in the golden spiral.

Golden Spiral

A logarithmic spiral w/growth factor $\varphi$ (the golden ratio). The golden spiral gets wider by a factor of $\varphi$ for every $\frac{1}{4}$ turn.

Fibonacci Spiral

Fibonacci Spiral

\[
\frac{a}{b} = \frac{a'}{b'} = 1.618 \quad !!!
\]

golden ratio

the concentric circles are in golden ratio

\[
\frac{a}{b} = 1.618 \quad !!!
\]

golden ratio
Layout and Grids
A system without a **principled layout** appears **disorganized** and can be **confusing**.
Well designed grid systems can make your designs not only more beautiful and legible, but more usable.

Mark Boulton, Designer
Runs Mark Boulton Design
Author: Designing Grid Systems for the Web
bicycles for humanity

Finding a new use for all those sets of wheels we’ve purchased with the best of intentions (but that are now gathering dust in our garages), Bicycles For Humanity is giving old bikes a new life and, in the process, changing lives. They ship bikes in containers bound for places like Africa, where the squeaky wheels are fixed and the bikes hold people get around. With pedal power reducing the tyranny of distance and mobilising medical and educational efforts, Bicycles For Humanity’s efforts are making inroads into education and prevention of diseases like HIV. It’s simple, sustainable, environmentally friendly and alleviates the guilt of continually having to face our failed New Year’s resolutions. So whether your unused bike has spunky dorks, squeaky brakes, or is pimped out to perfection, now’s the time to wheel it on out for a good cause.

www.bicyclesforhumanity.com

FASHION LESS WASTE

Listen up all budding designers! Entries are now open for Fashion Less Waste 2013: the Australian Museum’s annual fashion design competition aimed at encouraging a more sustainable fashion industry. In line with the comp’s sustainability mission, entrants need to design and make an outfit composed primarily of materials originally used for non-clothing purposes. Ten finalists from each category will be selected to have their entries modelled at an Australian Museum fashion parade on May 19th, with winners’ pieces continuing on to be part of a display at Sydney’s Strand Arcade in June and the Australian Museum in July.

And what would a sustainable fashion comp be without Pepper-mint’s presence? Our own Kelley Shee and Matt Paton will be judges on the Museum panel, alongside Akira Isogawa, Louise Olsen of Dinosaur Designs and Robert Carroll of Strand Cameras. For more info and inspiration, head to the Museum’s website. Entries close 31st April 2013, so get sewing!


time to set sale

It’s the time of year when we start to look at our wardrobes with a discerning eye. Is a clean out required before we get our mitts on next season’s must-haves?

To help us decide on the all-important fashion questions of the season, on Sunday April 28th there will be thousands of garage sales held Australia-wide — and you can hold one too!

The Garage Sale Trail is encouraging participants to donate 10% of their takings to keep Australia Beautiful, helping to reduce litter and increase recycling around the country. On Sunday April 28, join Garage Sale Ambassadors like Wallabies Captain Rocky Elsom, Video Hits presenter Fuzzy, eco advocate Annalise Bukshenek and tens of thousands of others in bagging a bargain, making some bucks and, most importantly, diverting waste from landfill.

The first Garage Sale Trail (held last May in Bondi) is anything to go by, there’ll be pop up records stores, art shows, plant and flower stalls, fresh produce, sausage sizzles, lemonade stands and more. So stock up and get creative with your own jumble sale, or find one in your suburb and make some new friends!

garagesaletrail.com.au - 30 April 2013
Hardware news...
“We reveal all the latest tech, gadgets, apps and more”

HP TO KEEP MAKING PCS
AND WE’RE HAPPY
ABOUT IT
World’s leading manufacturer considered quitting PCs

Q&A

Q
Is Pentium better than Core i3 processors?

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simul fugit. Satatum morum porae, ut resonendia grembell resittem que voluptate

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Can you please explain what Android is?

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Will a tablet be okay for
email?

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INdUSHER KNOWLEDGE

Fancy using your HD TV as a
laptop?

Chris Baraclough explains Intel
Wireless Display

Intel Wireless Display
Watching a movie with the
family on your laptop.
Jusy got an upgrade, thanks
to Wi-Fi’s clever cousin.

INSIDER KNOWLEDGE

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quae modipis am fuga. Aquae etat aut
que nees. Nisodis ipam, si core volupta
quidateo cernir, sunt.
Flowlines support vertical columns by dividing up the page into horizontal intervals.

Column intervals (or gutter widths) are negative spaces that separate one column from the next.

Margins define the active area of a page and direct the eye toward visual elements.

Grid modules are spatial areas that support visual content. The module size may vary from one design to the next.

Talking Heads

We asked students from across the university to answer some questions on their experiences of studying at UAL and living in London. They’re honest, friendly and often funny talking heads which we hope will allay some of your fears and make you feel excited about studying at UAL and exploring this great city.

ADVICE
Essie & Saul
Essie and Saul are just starting at Central Saint Martins.

ADVICE
Josh
We asked Josh for his best secret place in London... it’s not really a secret discovery, but I would recommend going to the Southbank Centre.

ADVICE
Mohamed
Mohamed from Central Saint Martins keeps it cool at interviews.

ADVICE
Hal
Hal from LCC talks about the funniest things that have happened to her in London.

ADVICE
Julie
Julie a third year BA Painting student from Camberwell talks about being an independent learner.

ADVICE
Justine and Ade
Justine and Ade talk about funny British customs.

ADVICE
Betty
Betty studies Design for Performance at Wimbledon College of Art. She talks about eating healthily, tea drinking and being far from home.

ADVICE
Bruce
Bruce tells us what he hopes to get out of being in London.

ADVICE
Nadine
Nadine’s a new student at LCF and tells us what’s great about studying at UAL and in London. What I’m looking forward to studying at UAL is obviously having the chance to meet people of similar inte.

ADVICE
Anna’s graduate video
Anna, a recent graduate from LCC, talks about her experiences at UAL.

ADVICE
Chloe & Kelly
Kelly and Chloe both study Fashion Styling and Photography at the London College of Fashion, and give some tips about how to get to grips with London and what to do if you feel
Jon Froehlich

ABOUT ME
I am an Assistant Professor in the Department of Computer Science at the University of Maryland, College Park and a member of the Human-Computer Interaction Laboratory (HCIL) and the Institute for Advanced Computer Studies (UMIACS).

I received my PhD in Computer Science from the University of Washington in December 2011 where I was a Microsoft Research Graduate Fellow and the 2010 College of Engineering "Graduate Innovator of the Year." My advisors were James Landay and Shwetak Patel. I also have an MS in Information and Computer Science from the University of California, Irvine where I was advised by Paul Dourish. During my graduate studies, I was fortunate to intern at a number of great research labs including Telefonica Research in Barcelona, Microsoft Research in Redmond, and Intel Research in Seattle.

RESEARCH FOCUS
My research focuses on designing, building, and evaluating interactive technology that addresses high value social issues such as environmental sustainability, computer accessibility, and personalized health and wellness. This work often involves the entire spectrum of information flow: from sensing physical events, to intelligently interpreting/classifying this data, to building visualizations that inform and motivate behavior. Please see my list of publications here.

My research interests can broadly be broken down into three areas:

Sensing and Feedback Systems for Environmental Behaviors
There is often a profound disconnect between our everyday behaviors and the effects those behaviors have on our health and the environment around us. In this research, I explore how technology can be used to effectively sense and report information about environmental behaviors to promote awareness and enable positive behavior change. Research questions involved here include: What behaviors should we sense and how? How, where, and when should this sensed activity data be presented? And, finally, what impact can sensory feedback have on behavior?

Smart Cities and Sustainable Transport
City-wide urban infrastructures are increasingly reliant on network technology to improve and expand their services. As a consequence, our interactions in the physical world are increasingly leaving behind digital footprints. In this research, I explore how these digital footprints can reveal otherwise latent patterns of human behavior as well as implications for the improvement of city infrastructures themselves (e.g., shared bicycling programs, rail and bus systems).

Health and Wellness
As sensors continue to decrease in size/price and advances in machine learning enable better and more granular activity recognition, there is an enormous opportunity for sensing and feedback applications for personal health—particularly around sleeping, diet, and exercise. In the long term, I hope to continue building and studying applications that motivate positive behaviors for both health and the environment. Significant questions remain: What are the most effective strategies for motivating behaviors? Can systems adapt their strategies to fit the individual user? How can we use technology to sustain behaviors over time? What is the role of augmented reality and other forms of emerging media?

PROSPECTIVE STUDENTS
I am looking for undergraduate and graduate students passionate about investigating the role of technology in solving high-value social problems. If this interests you, please contact me so that we can setup a time to chat about mutual interests and potential research projects.

NEWS
2.17 - Invited Talk @ VT NCR
I am giving an invited talk today on my dissertation work at the Virginia Tech North Capitol Region campus hosted by Dr. Chang-Tien. Here is the talk announcement [link].

1.20 - Transit Camp Tomorrow!
Excited to attend Transportation Camp DC tomorrow with @justgrimes and @sv0rensen. Hope to meet people interested in using technology to improve and encourage sustainable transport.

1.19 - "Future of HCI" Seminar
I am co-running a 1-credit Spring semester reading seminar with Professors Ben Bederson and Leah Findlater called "The Future of HCI." This seminar will cover emerging hot topics in HCI touching on areas such as human-computation, environmental sustainability, computing for all, health informatics, and gesture-based computing. Grad students from all areas are welcome to join.

1.1 - First Day as Prof
Happy New Year! Today, is my official start date as an assistant professor at UMD. ;)

12.10 - CHI2012 Paper Accepted
Our paper entitled "The Design and Evaluation of Prototype Eco-Feedback Displays for Sanitary Level Water Usage Data" was accepted to CHI2012. This paper is based on a chapter in my dissertation.

10.31 - CHI Workshop Accepted
Our CHI workshop entitled "Personal Informatics in Practice: Improving Quality of Life Through Data" was accepted to CHI2012. Submission deadline Jan 12th.
Great way to bookmark and read the web

Kippt makes it easy to save, search and read the information you find on the web.

Sign up for a free account

Manage your bookmarks and reading beautifully

Lightweight, fast and with features you actually use.

Simpler and faster bookmarking
Save and organize your links in to simple lists with notes and tags. Private or public.

Search everything
In Kippt, everything you collect is searchable from the title to the page content.

Read your articles later
Timeshift your reading for a better time. Read the articles easily on desktop and mobile.

Collaborate and share
Collect bookmarks and clips with your colleagues. Curate and share the best you find on the web.
Bootstrap, from Twitter

Simple and flexible HTML, CSS, and Javascript for popular user interface components and interactions.

View project on GitHub  Download Bootstrap (v2.0.2)

Designed for everyone, everywhere.

Need reasons to love Bootstrap? Look no further.

Built for and by nerds
Like you, we love building awesome products on the web. We love it so much, we decided to help people just like us do it easier, better, and faster. Bootstrap is built for you.

For all skill levels
Bootstrap is designed to help people of all skill levels—designer or developer, huge nerd or early beginner. Use it as a complete kit or use to start something more complex.

12-column grid
Grid systems aren’t everything, but having a durable and flexible one at the core of your work can make development much simpler. Use our built-in grid classes or roll your own.

Responsive design
With Bootstrap 2, we've gone fully responsive. Our components are scaled according to a range of resolutions and devices to provide a consistent experience, no matter what.

Growing library
Despite being only 10kb (gipped), Bootstrap is one of the most complete front-end toolkits out there with dozens of fully functional components ready to be put to use.

Custom jQuery plugins
What good is an awesome design component without easy-to-use, proper, and extensible interactions? With Bootstrap, you get custom-built jQuery plugins to bring your projects to life.

Cross-everything
Originally built with only modern browsers in mind, Bootstrap has evolved to include support for all major browsers (even IE7!) and, with Bootstrap 2, tablets and smartphones, too.

Styleguide docs
Unlike other front-end toolkits, Bootstrap was designed first and foremost as a styleguide to document not only our features, but best practices and tips, not just helpful examples.

Built on LESS
Where vanilla CSS falters, LESS excels. Variables, nesting, operations, and mixins in LESS makes coding CSS faster and more efficient with minimal overhead.

HTML5
Built to support new HTML5 elements and syntax.

CSS3
Progressively enhanced components for ultimate style.

Open-source
Built for and maintained by the community via GitHub.

Made at Twitter
Brought to you by an experienced engineer and designer.
Hello, world!
This is a template for a simple marketing or informational website. It includes a large callout called the hero unit and three supporting pieces of content. Use it as a starting point to create something more unique.

© Company 2012
Hello, world!

This is a template for a simple marketing or informational website. It includes a large callout called the hero unit and three supporting pieces of content. Use it as a starting point to create something more unique.

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Depth of Processing

A phenomenon of memory in which information that is analyzed deeply is better recalled than information that is analyzed superficially.1

The key determining factors as to how deeply information is processed are the distinctiveness of the information, the relevance of the information, and the degree to which the information is elaborated. Distinctiveness refers to the uniqueness of the information relative to surrounding information and previous experience. Relevance refers to the degree to which the information is perceived to be important. The degree of elaboration refers to how much thought is required to interpret and understand the information. Generally, deep processing of information that involves these factors will result in the best possible recall and retention of information.

Consider depth of processing in design contexts where recall and retention of information is important. Use unique presentation and interesting activities to engage people in deeply process information. Use case studies, examples, and other devices to make information relevant to an audience. Note that deep processing requires more concentration and effort than mere exposure (e.g., passive lecture), and therefore frequent periods of rest should be incorporated into the presentation and lecture.

See also Amnesia Organizer, Mnemonic Device, Picture superiority Effect, and von Restorff Effect.
Depth of Processing

A phenomenon of memory in which information that is analyzed deeply is better recalled than information that is analyzed superficially.¹

The seminal work on depth of processing is that of Mary E. Cleary and Robert L. Resnick, who demonstrated that the depth of processing is related to the retention of information. They found that when participants were asked to encode information deeply, they remembered it better than when they encoded it superficially. This suggests that deep processing is more effective in retaining information than shallow processing.

Consider depth of processing in design contexts where recall and retention of information is important. Use unique presentation and interesting activities to engage people to deeply process information. Use case studies, experiments, and other activities to engage information relevant to an audience. Note that deep processing requires more concentration and effort than less effortful processing (e.g., rote repetition), and therefore frequent periods of rest should be incorporated into the presentation and review.

See also "Learning Objectives, Mnemonic Device, Picture Superiority Effect, and von Restorff Effect."
594 pixels wide
Main content

366 pixels wide
Side bar

960 pixels wide
Dear #NewTwitter, "good proportion" is one of the main design principles. Remember? @stop @design
Which do you prefer?
Grids and Rule of Thirds

A technique of composition in which a medium is divided into thirds, creating aesthetic positions for the primary elements of a design.

[Technique has a loyal following in design circles due to its use by Renaissance masters and its rough relationship to the golden ratio (0.667 ~ 0.618)]

Digital Commerce Management

A clear path forward for serving the new digital consumer

Learn More

About Demandware
Our leading on-demand ecommerce platform combines the functionality, flexibility and customization capabilities of an in-house application with the operational benefits of the on-demand model.

News
- Latest: Demandware Labs Releases Pinterest Integration for Retailers
- Montreal-Based Browns Shoes Finds the Perfect Fit with Demandware
- Video: Demandware Celebrates Recent IPO

In the Spotlight
New Entry-Level Pricing for Demandware Commerce Starting at just $60K!

Learn More!

$60K

frederick's of Hollywood
Crocs
Playmobil
Michaels
S. Oliver
Re
Evaluation
Formative methods help us understand the problem and our users to inform our design.

Evaluation methods can also help us detect mistakes and refine our design.

Evaluation methods help us understand how well our design works.
**User Research Methods**

**Formative → Build → Evaluative**

- Ethnography
- Interviews
- Surveys
- Cultural Probes
- Focus Groups
- Diary Studies
- Experience Sampling Studies
- Studying Similar Products
- Interaction Logging of Past Product / Early Prototype
- Studying Past Product Documentation

...  

- Ethnography
- Interviews
- Surveys
- Focus Groups
- Diary Studies
- Experience Sampling Studies
- Interaction Logging
- Lab Studies
- Heuristic Evaluation
- Cognitive Walkthroughs
- Field Trials

...
Round-trip
One-way
Multi-city

From
WAS

To

add nearby airports
airport map
add nearby airports
airport map

My dates are flexible

Depart
04/22/2012
Anytime
Sun, Apr 22 2012
1 adult
Children or Seniors

Return
04/29/2012
Anytime
Sun, Apr 29 2012
Economy
nonstops only

Find Flights

SEARCH ONE AND DONE.
Compare hundreds of travel sites at once.
Choose where to book.

Free Mobile App
ePhone Android iPad Windows More
Download now

My Trips
Manage, sync & share your itinerary
Try it now

Explore
Where you can go for how much
Try it now
How long does it take the average user to make a flight reservation on this website?
How many users are successful when trying to record all episodes of their favorite TV show?
how many users turn off javascript

How many users have JavaScript disabled? · YDN Blog
developer.yahoo.com/.../how-many-users-have-javascript-disabled/
Oct 13, 2010 – How many users have JavaScript disabled? ...
Wed, Jun 13 2012 Hadoop Summit at San Jose Convention Center

Punkchip | Why we should support users with no JavaScript
www.punkchip.com/2011/03/why-support-javascript-disabled/
Mar 23, 2011 – Yahoo – How many users have JavaScript disabled? ... Usually people don't turn their JavaScript off, but JavaScript is filtered by company ...

Browser Statistics
www.w3schools.com/browsers/browsers_stats.asp
Free HTML XHTML CSS JavaScript jQuery XML DOM XSL XSLT RSS AJAX ... These people are more interested in using alternative browsers than the average user ... Anyway, our data, collected from W3Schools' log-files, over many years, ...

Percentage of people with CSS and/or JS disabled?
www.sitepoint.com/forums/showthread.php?id=156195 ... people...disabled
Jul 7, 2011 – How many users have JavaScript disabled? ... I know a handful of techie types who sometimes/always turn JavaScript off, but even among the ...

Computer Newbies Help • View topic - How many people turn off ...
What percentage of users have Google Instant Search turned off?
How do users feel when playing this video game?
These **questions** require user evaluation.
Why do we evaluate our designs?
<table>
<thead>
<tr>
<th>Electors for President and Vice President</th>
<th>(Republican)</th>
<th>(Reform)</th>
<th>(Socialist)</th>
<th>(Constitution)</th>
<th>(Workers World)</th>
<th>Write-In Candidate</th>
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<td>George W. Bush - President</td>
<td>Pat Buchanan - President</td>
<td>David McReynolds - President</td>
<td>Howard Phillips - President</td>
<td>Monica Moorehead - President</td>
<td>To vote for a write-in candidate, follow the directions on the long stub of your ballot card.</td>
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<td>Dick Cheney - Vice President</td>
<td>Ezola Foster - Vice President</td>
<td>Mary Cal Hollis - Vice President</td>
<td>J. Curtis Frazier - Vice President</td>
<td>Gloria La Riva - Vice President</td>
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<td>Joe Lieberman - Vice President</td>
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<td>(Libertarian)</td>
<td>Harry Browne - President</td>
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<td>Winona La Duke - Vice President</td>
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<td>(Socialist Workers)</td>
<td>James Harris - President</td>
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<td>Howard Phillips - President</td>
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<td>Margaret Trowe - Vice President</td>
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<td>J. Curtis Frazier - Vice President</td>
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<tr>
<td>(Natural Law)</td>
<td>John Hagelin - President</td>
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<td></td>
<td>Monica Moorehead - President</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nat Goldhaber - Vice President</td>
<td></td>
<td></td>
<td></td>
<td>Gloria La Riva - Vice President</td>
<td></td>
</tr>
</tbody>
</table>
Although Democrats are listed 2\textsuperscript{nd} on the left column, they are the 3\textsuperscript{rd} hole on the ballot.

Punching the 2\textsuperscript{nd} hole casts a vote for the Reform party!
Air France 447
“The **real focus of this investigation** is the **man-machine interface**, and why the pilots didn't have everything they needed to understand what was happening”

- Air France Lawyer Fernand Garnault

[The Sydney Morning Herald, Oct 6, 2011]
In order to **evaluate**, we need to define **metrics**.
Usability metrics reveal something about the user experience—about the **personal experience** of the human being using the thing.
A usability metric reveals something about the interaction between the user and the thing:

- Effectiveness
- Efficiency
- Satisfaction

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Being able to complete a task

A usability metric reveals something about the interaction between the user and the thing:

- Effectiveness: Being able to complete a task
- Efficiency: Amount of effort required to complete the task
- Satisfaction

A **usability metric** reveals something about the interaction between the **user** and the **thing**:

- **Effectiveness**: Being able to complete a task
- **Efficiency**: Amount of effort required to complete the task
- **Satisfaction**: Degree to which the user was happy with his/her experience while completing the task

A **usability metric** reveals something about the interaction between the **user** and the **thing**:

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- **Efficiency**: Amount of effort required to complete the task
- **Satisfaction**: Degree to which the user was happy with his/her experience while completing the task

These metrics can help answer these critical questions:

- Will users **like** the product?
- Is this new product **more efficient** than past products?
- How does the **usability** of this product/version **compare** to others?
- What are the **most significant** usability **problems** with this product?
- Are improvements being made from **one design iteration** to another?

Two Types of Evaluation:

- Formative
- Summative
Formative evaluation: like a chef who periodically checks a dish while it’s being prepared & makes adjustments to positively impact the end result.
The chef evaluates, adjusts, and re-evaluates. The goal is to make improvements in the design, so formative evaluation occurs before the design is finalized.
Two Types of Evaluation:

Formative

Summative

Key Questions:

- What are the top usability issues?
- What aspects work well?
- What don’t users understand?
- What are common errors?
- Is the design getting better?
- What issues will likely remain in the final design?

[See Chapter 3 in Tullis & Albert, Measuring the User Experience, 2008]
Summative evaluation: evaluating the dish after it comes out of the oven. Is it as good as we expected? Why not?
Two Types of Evaluation:

**Formative**
- What are the top usability issues?
- What aspects work well?
- What don’t users understand?
- What are common errors?
- Is the design getting better?
- What issues will likely remain in the final design?

**Summative**
- How does our product compare against the competition?
- Are we doing better than before?
- What are the final usability metrics of this design?
- Identify areas with most potential for improvement for 2.0 version.

Regardless of whether we are conducting formative or summative evaluations, important questions need to be answered about our evaluation approach. The why, what, where, and when of evaluation.
Evaluation Planning Questions

- What is the focus of our evaluation?
- Who are our users/participants?
- How many participants do we need?
- What is our budget / timeline?
- What evaluation method to employ?
- What kind of data to collect?
Genres of Assessment

Genres of Assessment

**Inspection-Based Methods**
Based on the skills and experience of evaluators

These are sometimes also called “Expert Reviews”
Genres of Assessment

Inspection-Based Methods
Based on the skills and experience of evaluators

 Automated Methods
Usability measures computed by software
Genres of Assessment

**Inspection-Based Methods**
Based on the skills and experience of evaluators

**Automated Methods**
Usability measures computed by software

**Formal Methods**
Models and formulas to calculate and predict measures semi-automatically
Genres of Assessment

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**Empirical Methods**
Evaluation assessed by testing with real users
Genres of Assessment

**Inspection-Based Methods**
Based on the skills and experience of evaluators:
1. Heuristic Evaluation
2. Walkthroughs

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Usability measures computed by software

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Discount Usability Techniques

Heuristic Evaluation
Assess interface based on a predetermined list of criteria

Cognitive Walkthroughs
Put yourself in the shoes of a user
Heuristic evaluation is a method for finding the usability problems in a user interface design so that they can be attended to as part of an iterative design process.

Jakob Nielsen, Ph.D.
"The Guru of Web Page Usability" (NYT)
Inventor of Heuristic Evaluation

Heuristic evaluation involves having a **small set of evaluators** examine the interface and judge its **compliance** with **recognized usability principles** (the "heuristics").

**Jakob Nielsen, Ph.D.**

"The Guru of Web Page Usability" (NYT)  
Inventor of Heuristic Evaluation

Strategies to enhance the user experience

Events

**Usability Week 2012 training courses**

- **Amsterdam**: April 23-27
- **Washington, DC**: May 14-18
- **Chicago**: June 25-29
- **Toronto**: July 23-27
- **Sydney**: August 12-17

Tweets from the conference

Services

Consulting services are offered world-wide, and can be customized to meet your needs:

- Usability Testing and Design Reviews
- Training, Tutorials, and Lectures
- Process and Strategy

Publications

Research reports, training video, books

- Intranet Usability
  - Design Annual 2012
  - Intranet Guidelines, vol. 1-10
  - Enterprise 2.0: Social Features
  - Enterprise Portals
  - Intranet IA (information architecture)
- Application Design Showcase: 10 Best App UIs
- Agile Usability
- Email Newsletters
- Corporate Websites: Company Image, IR, PR
- Non-profits and Charities: Donations Online
- E-commerce Usability and B2B Sites
- Age-Specific Design: Children, Teens, Students, Seniors
- ROI from Usability
- Mobile Usability and iPad Usability

Full list of reports and usability guidelines>

Paper prototyping: a how-to video (40 minute Blu-Ray/DVD)

About Nielsen

Nielsen Norman Group is headquartered in Silicon Valley, with offices throughout the United States: 3 cities in California, 2 other western US, 1 midwest, 2 east coast. Services are provided world-wide.
Performing Heuristic Evaluation

Small set of evaluators (experts) examine UI
- Evaluators check compliance with usability heuristics
- Different evaluators will find different problems
- Evaluators communicate afterwards to aggregate findings
- Designers use violations to redesign/fix problems

Can be performed at various stages in the iterative design cycle (e.g., on sketches, on interactive prototypes, or final design)

Nielsen’s 10 Heuristics

http://www.useit.com/papers/heuristic/]
1. Visibility of System Status
System should always keep users informed, through appropriate feedback at reasonable times.

Scanning files to backup

Preparing to back up D:\$WINDOWS.~Q\DA...\ZH2PZGX

Stop backup  Close
2. **Match System & Real World**

The system should speak the user’s language, with familiar words. Information should appear in natural and logical order.

Nielsen’s 10 Heuristics

<table>
<thead>
<tr>
<th>Heuristic</th>
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</tr>
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<tbody>
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<td>1. Visibility of System Status</td>
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<td></td>
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<td>3. User Control &amp; Freedom</td>
<td>Users often choose functions by mistake and need a clearly marked “emergency exit.” Support undo and redo.</td>
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<td>4. Consistency &amp; Standards</td>
<td>Users should not have to wonder whether different words/actions mean the same thing. Follow platform conventions.</td>
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Similar menus and primary options on the Ribbon
## Nielsen’s 10 Heuristics

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<tr>
<td>5. Error Prevention</td>
<td>Even better than good error messages is a careful design that prevents the problem in the 1st place.</td>
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auto-complete cuts down on misspellings

[http://www.slideshare.net/sacsprasath/ten-usability-heuristics-with-example]
# Nielsen’s 10 Heuristics

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<td>1. Visibility of System Status</td>
<td><strong>Minimize the user’s memory load by making/actions, options visible.</strong> The user shouldn’t have to remember from one dialog to next.</td>
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Komodo Edit auto-complete
Nielsen’s 10 Heuristics

1. Visibility of System Status
2. Match System & Real World
3. User Control & Freedom
4. Consistency & Standards
5. Error Prevention
6. Recognition Over Recall
7. Flexibility & Efficiency
   Accelerators (unseen by novice users) often speed up interaction for expert users. Allow users to tailor frequent actions.

Nielsen’s 10 Heuristics

1. Visibility of System Status
2. Match System & Real World
3. User Control & Freedom
4. Consistency & Standards
5. Error Prevention
6. Recognition Over Recall
7. Flexibility & Efficiency
8. Aesthetic & Minimalism
   Interfaces shouldn’t contain irrelevant information. Every unit of info competes for attention & diminishes relative visibility.

Form Title -- (appears above URL in most browsers and is used by WWW search)
Q&D Software Development Order Desk

Form Heading -- (appears at top of Web page in bold type)
Q&D Software Development Order Desk

E-Mail responses to (will not appear on)
dversch@q-d.com

Text to appear in Submit button
Send Order

Text to appear in Reset button
Clear Form

Scrolling Status Bar Message [max length = 200 characters]
****WebMania 1.5b with Image Map Wizard is here!****
Nielsen’s 10 Heuristics

1. Visibility of System Status
2. Match System & Real World
3. User Control & Freedom
4. Consistency & Standards
5. Error Prevention
6. Recognition Over Recall
7. Flexibility & Efficiency
8. Aesthetic & Minimalism
   Error msgs in plain language, precisely indicate problem, suggest solution.

http://www.useit.com/papers/heuristic/]
Oops! Google Chrome could not find www.wikispacesd.com

Did you mean: www.wikispaces.com

Additional suggestions:
• Search on Google:

wikispaces
Google Search

Google Chrome Help - Why am I seeing this page?
©2012 Google - Google Home
<p>| | |</p>
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Best to not need documentation but when necessary, should be easy to search, focused on user tasks, and list concrete steps.

Phases of Heuristic Evaluation

1. **Pre-evaluation training:** Give evaluators needed domain knowledge & information on the scenario.

2. **Evaluation:** For ~1-2 hours, independently inspect the product using heuristics for guidance. Each expert should take more than one pass through the interface.

3. **Severity rating:** Determine how severe each problem is.

4. **Aggregation:** Group meets & aggregates problems (with ratings).

5. **Debriefing:** Discuss the outcome with design team.
Severity Ratings

0 – don't agree that this is a usability problem
1 - cosmetic problem
2 - minor usability problem
3 - major usability problem; important to fix
4 - usability catastrophe; imperative to fix

The interface used the string "Save" on the first screen for saving the user's file, but used the string "Write file" on the second screen. Users may be confused by this different terminology for the same function. (fairly severe, but easy to fix)
How Many **Evaluators**?

In principle, individual evaluators can perform a heuristic evaluation of a user interface on their own but...

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In principle, individual evaluators can perform a heuristic evaluation of a user interface on their own but…

Usability Problem (ordered from easiest to find to hardest to find)

“Worst” evaluator only found 3 usability problems (and they were the easiest to find)

“Best” evaluator found 10 usability problems (but not the two “hardest”)

Evaluator (ordered from least successful evaluator to most successful)

Easy to Find Usability Problem

Hard to Find Usability Problem

Automated Methods
Usability measures computed by software

Empirical Methods
Evaluation assessed by testing with real users

Inspection-Based Methods
Based on the skills and experience of evaluators

How Many **Evaluators**?
Well, then, how many evaluators should we use?

How Many Evaluators?

Well, then, how many evaluators should we use?

Nielsen recommends ~5 evaluators (at least 3), which balances cost/benefit.

Single evaluators found, on average, ~35% of usability problems.