## HCI: CONTENT LAYOUT

Dr Kami Vaniea

Many of the examples in this lecture are drawn from this book

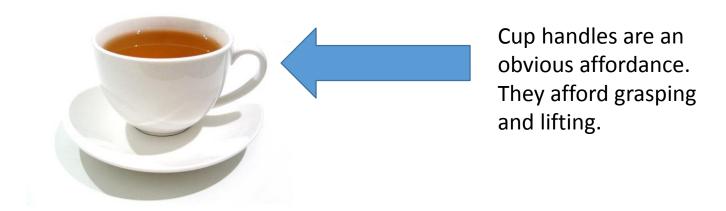
Steve Krug

A Common Sense Approach to Web Usability

### Affordance and Metaphores

### **Affordance**

- "An attribute of an object that allows people to know how to use it." -- ID book
- To afford means to "give a clue"
- It should be obvious how to interact with an object
- Mouse buttons look like they should be clicked down



Handles on doors afford pulling

Plates on doors afford pushing

No signs required

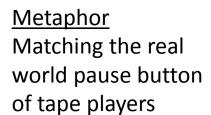


### Metaphors vs affordances

#### <u>Affordance</u>

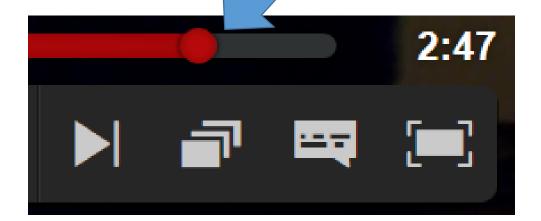
The button shape is an affordance, it affords pressing





#### <u>Affordance</u>

Affords grasping the circle to pull it side to side

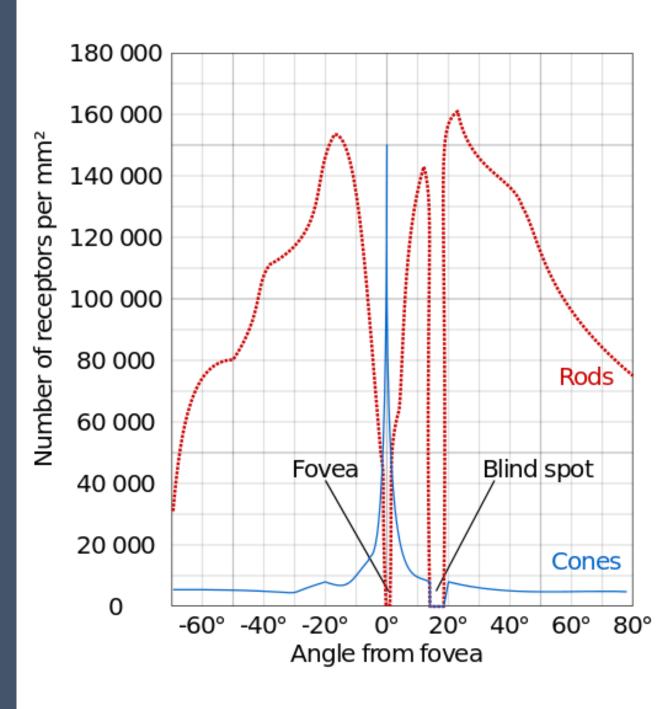


### Website structure

# The human eye is really good at seeing some things and bad at others

They eye is the most detailed at its center, where your focus is.

On the edges things are blurry, but you can easily see movement.



They eye is the most detailed at its center, where your focus is.

On the edges things are blurry, but you can easily see movement.

Let me tell you a web search story...

I wanted to figure out where a bit.ly link went because it was in a suspicious email (I'm paranoid)

I remembered that bit.ly has statistics pages for all URLs that list the destination URL

So I used DuckDuckGo to search for: bit.ly url number of click statistics

And found this page:



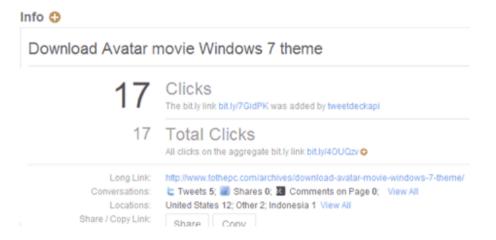
#### How to see number of clicks statistics of bitly URLs

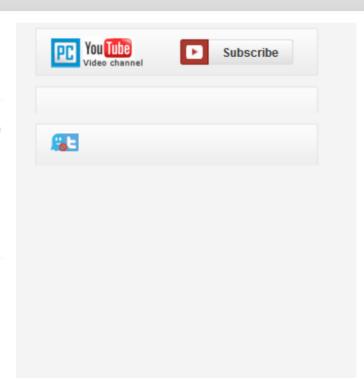
Written by Davinder Singh Kainth

bit.ly is hugely popular URL shortening service among others like tinyurl. Besides the basic functionality of shortening URLs, it also provide feature for URL analysis. You can track number of clicks, locations, referrers, time of clicks for any bitly URL without having to register, login or install any software.

#### View clicks stats of any Bit.ly URL

To view stats of any bit.ly url, just add "+" sign in the end. For example, for url "http://bit.ly/7GidPK", open url "http://bit.ly/7GidPK+", this will redirect to "http://bit.ly/info/7GidPK" and show all the statistics for this shortened url.





Ghostery blocked comments powered by Facebook Connect.





Except I'm trying to solve a problem, not read a website. So what I saw looked more like this:

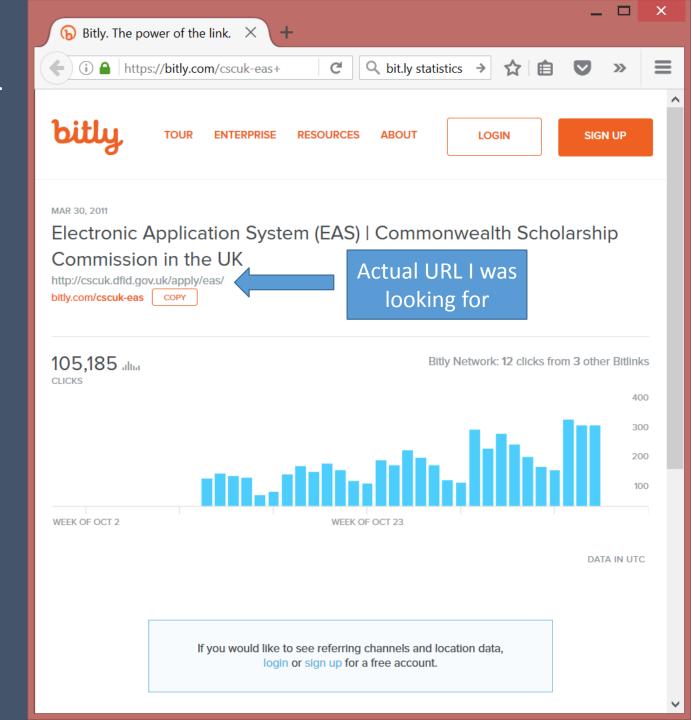


### number of clicks statistics bit.ly Street Backle He back fundorably of sturbering office, I also provide National for SML analysis. No our track number of clima. boattors, referrers, brise of close for any billy city, software facing to register, tager or need on softens. View clicks state of any Bit.ly URL To come distill of any SEC y art. Just addl "Y" align in the area. For example, for art MSp. / NR Sp. TRUMW . por or "MSp. / NR Sp. TRUMW" . The off red let is a CAMANATAM TRANSPER AND THE RESERVE OF THE RESIDENCE OF THE REPORTED AT





So I added a + to my URL and landed here which is what I was looking for



# For me this was a very usable webpage

- I could quickly see it was the correct place
- Section title used language that matched my search
- Data I needed was bolded and had an example which was also bold



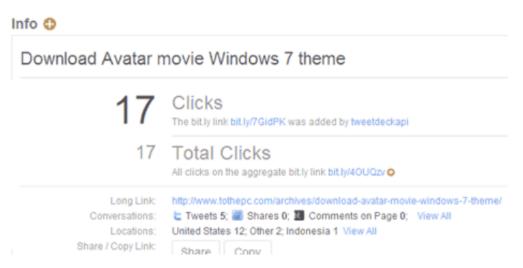
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### We don't read, we scan

We typically want something

 We know that we don't actually need to read everything

We are good at scanning

Humans are surprisingly bad at reading text and very good at pattern matching

So when skimming we don't read, we pattern match (words can be patterns)

Then read once we find something that looks worth reading

You don't need to be able to read something to know what it means



# What is the document to the right?



Can you tell what the content is even if you cannot read it?

#### PUL7<sub>0</sub>Cc



#### 



ጋペል° ¿ፐር ልካ/ペኦርሲታኦዎ» ላዜጋ ፋር «ልጓር ል/ፈርኦና ጋቐ ል%baልኦ%በቦኔኦዎ» ልሷልላጋልና ለሞርላተርሲትፕር ዕላንሲነግሁን,በርታኦት/ኒት(በቴ%ጋԺ በህ/ኦኦቴናናዎላቸዎንታ ልሷልላጋልና ውሲናተ በቦታጓዮውና ላዜጋ ቅልኦትበህና ላዋሮኦበርሲታኦሮ»ጋው ጳጐጮርኦ/ፈርረኦ%ጋውና 1984-Γ ልሷልላጋልና ውፈርሲዎንታና ላግንበር%/ፈርንበንግምና. 2002-Γና 2016-Jና, ላግረ%ቴኒህረ ኦማ/ኒንም ልሷልና ኦዖኦ%-ር%ጋ୮ bበኒትጓዮውና ዕፈር୮, ላዜጋ ልካ/ペኦርሊታኦር ኦሲናጋቐ ልሷል% ውፈርግኒሁታ ዕላንሲኒካዕግግውና 6-ጓዮ%ር%ጋዮ ልታቴናናርኦንር ለምቴናበርኦታላር እርላናለግር ጋህ ኦዖኦኒው 2004-Γ.



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### Annual Report from the Inuit People in Canada

#### **Board of Directors**



Natan Obed President Inuit Tapiriit Kanatami

Natan Obed is the President of Inuit Tapiriit Kanatami. He is originally from Nain, the northernmost community in Labrador's Nunatsiavut region, and now lives in Ottawa. For 10 years he lived in Iqaluit, Nunavut, and worked as the Director of Social and Cultural Development for Nunavut Tunngavik Inc. He has devoted his career to working with Inuit representational organizations to improve the wellbeing of Inuit in Canada.



Duane Smith Chair and CEO Inuvialuit Regional Corporation

Duane Smith is the Chair and CEO of the Inuvialuit Regional Corporation, whose mandate is to receive Inuvialuit lands and financial compensation resulting from the 1984 Inuvialuit land claims settlement. From 2002 to 2016, he was President of Inuit Circumpolar Council Canada, and served as Chair of the Inuvik Community Corporation for six terms starting in 2004.



Cathy Towtongie President Nunavut Tunngavik Incorporated

Cathy Towtongie first entered politics in 1973 as Secretary Treasurer of Inuit Tapirisat of Canada. In 2001, she was elected President of Nunavut Tunngavik Incorporated, the organization responsible for ensuring that promises made under the Nunavut Land Claims Agreement are carried out.

Proximity and the overlapping of the photo naturally make you group the two bits of text with the photo

The two bits of text are also different colors causing a natural grouping even without the line

#### PULYalc





ጋዲል॰ /Γና ፈኄቦረጭ፟ና። Δውልፈጋልና ለዊናሮብረሮሲትኄቦር ሰላ>ሲኒግኒሁታ



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### **Think-pair-share**

- I am going to show you three news sites (20s each)
- For each site figure out how to:
  - Play a news video
  - Get to a different section (like sports, or finance)
  - Search for something
  - Share on social media
- The hard bit:
  - How do you know?



图片 新闻 军事 财经 证券 理财

热剧 综艺 NBA 中超 体育

娱乐 明星 电影 育儿 健康

汽车 车型 购物 家居 房产 家电 科技 数码 手机 星座 游戏 儿童

教育 课程 出国 文化 大家 文学 公益 佛学 更多 拍客



家装节

**家具建材惠动全城** 跨品类满499减100



#### 网上有害信息举报专区 ▶

#### 要闻

北京 ≥ 19℃

今日话题

● 时光画轴

#### 党和国家领导人是如何当选十九大代表的?

"史上最牛军改" 强军第三集 第四集 理上网来 习近平等出席国庆招待会 喜迎十九大 砥砺奋进 李克强致辞 会见专家 会见驻华使节 俞正声 国庆假期首日全国接待游客1.13亿人次

十耳其总统: 以色列情报机构插手伊拉克库区公投 日本众议院选举22日举行投票 自民党支持率跌至3成

▶ 英紹-正视频播细卡vs利物浦 阿森纳2-0取4连胜



南京夜空现奇异天象 紫色琉璃 天倍添神秘

一文读懂调控1周年发生了啥? 限购限贷限售都来了 特警国庆哨位执勤 妻儿不便相认隔栏喊"王警官" 游客到西湖边却发不了朋友圈: 4G信号被"挤"断 法国一火车站发生持刀袭击路人事件 嫌犯被击毙 加拿大一男子驾车撞警车持刀袭警 车上发现IS旗帜 荣乌高速河北营尔岭隧道发生塌方 9人被困 孕妇临盆高速遇路上堵 交警护航10分钟送至医院 每周神评论: 致富经盯上小朋友 国庆堵车乐趣多

#### 中国人为什么害怕吃止痛药?

修手机比买新手机还贵,该怪谁 用大数据保护留守儿童 "西洋参"是如何在中国走上神坛的? 花花公子创始人娇妻为何得不到1分钱 MISS MONEY 维也纳现代派:十九世纪末的文学突围 突然爱上翡翠, 是我老了吗?

往期

评论

历史

学术

入流

QQ 会员 腾讯云 48 空间 课堂 快报 新闻APP 自选股 体育APP 手机.管家 浏览器 应用宝 冒险岛2 QQ炫舞 LOL DNF 火影OL 干者 理财通 企鵝FM Q币 全部 ₩

#### 今日热播

影视剧





综艺

森碟没来? 亮仔机智回答

黄晓明单手玩火圈招临

- 毛不易《盛夏》夺冠 李荣浩助阵决赛
- ▶ 中餐厅 赵薇周冬雨飙歌 黄晓明张亮魔性打鸡蛋
- 蒋欣吴秀波不慎坠马 汪涵画唐妆
- ▶ 极限挑战 宋小宝沙溢回归复仇, 黄渤套路孙红雷
- 天使之路 青春旅社 开心剧乐部 热播综艺
- ▶ 独播综艺 脱口秀大会 不可思议的妈妈 饭局













المزيد 🕶 ميدان مدونات رياضة

الأخبار - المعرفة - البرامج - الوسائط - الموسوعة - تعلم العربية الرئيسية المواضيع المميزة مأساة الروهينغا حصار قطر الحرب في سوريا الأزمة في اليمن

#### خبر عاجل: راخوى: لم يكن هناك أى استفتاء إنما محاولة للتقسيم وتقويض الدولة



#### مئات الجرحى في اشتباكات بسبب استفتاء كتالونيا

أعلنت كتالونيا إصابة 337 شخصا بجراح بعد تعرضهم للضرب من الشرطة الإسبانية، وأعلنت الحكومة الإسبانية إصابة 11 عنصر أمن، ولا يزال التوتر قائما مع إصرار مدريد على عرقلة استفتاء انفصال.

قبل 4 ساعات

تغطيات إخبارية



▶ البث الحي

X II 💟



تغطيات إخبارية غزة في مهب التحولات



تويتر.. منبر السعوديين وسلاحهم





مقالات رأى مدونات



يوشكا فيشر



عالم ألمانيا الجديد الخطير





القديم يعيد إنتاج نفسه بتونس حكما ومعارضة

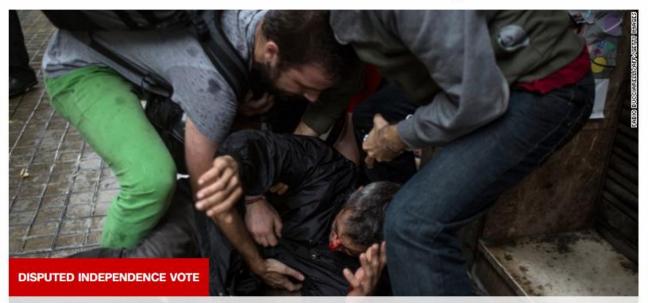


الورقة الكردية في حسابات موسكو الإستراتيجية

مهاجم يقتل شخصين طعنا فى مرسيليا وفد مصرى بغزة قبيل وصول حكومة الوفاق



### 'The shame of Europe'



### Catalonia condemns Spanish government action as 465 injured in clashes with police

FC Barcelona bars public from match amid Catalan vote chaos

Riot police break into polling station (>)

In photos: Rubber bullets and blocked polling stations in

Catalan referendum, explained

By continuing to browse our site you agree to our use of **cookies**, **revised Privacy Policy** and **Terms of Service**. More information about **cookies** 



#### **Top stories**



### Trump: Tillerson 'wasting his time' on North Korea

Fatal stabbings in France treated as terrorism

O.J. Simpson freed after 9 years in jail

Puerto Ricans rip into Trump

ANALYSIS What Trump's 18 tweets did

San Juan Mayor: We're dying here (>)

Canada: 5 hurt as attacks spark terror probe

Brave Hong Kongers take to streets

Air France jet makes emergency landing

Kim Jong Nam murder trial set to begin

Fears grow of sectarian war in Iraq

OPINION Stand for anthem, then take a knee

ANALYCIC Trumple uphelicushly had week

### **Think-pair-share**

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- For each site figure out how to:
  - Play a news video
  - Get to a different section (like sports, or finance)
  - Search for something
  - Share on social media
- The hard bit:
  - How do you know?

# Websites need to be designed more like billboards than like books or newspapers

### When building a website you should:

- Take advantage of conventions
  - Do not re-invent the wheel
- Create effective visual hierarchies
- Break pages up into clearly defined areas
- Make it obvious what can be clicked
- Eliminate distractions
- Setup content so it is easy to scan

### Awesome Logo

**Books** 

Music

**Movies** 

Games

### **Section Title**

## **Computer Books Books** Music **Computer Books Movies Books** Games Music Movies Games

### Create effective visual hierarchies

- The more important something is the more prominent it is
- Things that are related logically are related visually
- Things that are nested visually show what's part of what

### Important things are prominent

## Very important

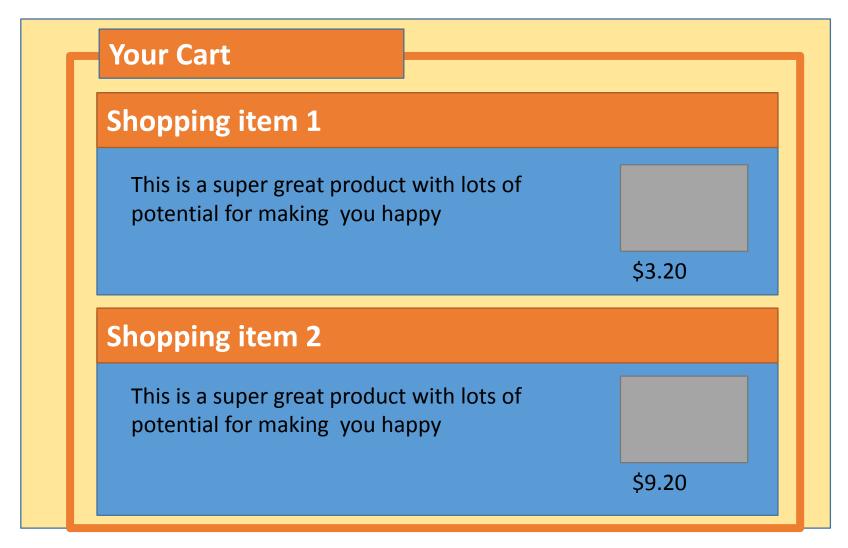
A little less important

Nowhere near as important

## Logically related are also visually related

Books	
Music	
Movies	
Games	

## Visual nesting shows hierarchy











> Terms

#### More Resources

- · View the complete Data Policy
- Interactive Tools
- Minors and Safety
- · Facebook Privacy Page
- Facebook Safety Page
- Facebook Site Governance Page
- EU-U.S. Privacy Shield Notice

## What kinds of information do we collect?

Depending on which Services you use, we collect different kinds of information from or about you.

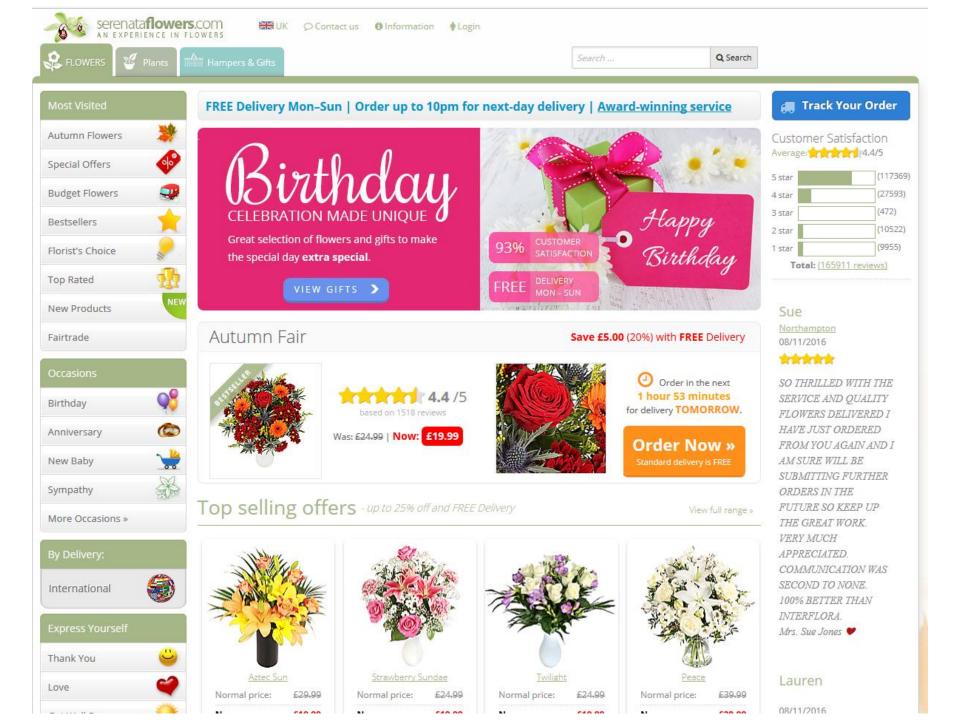
#### Things you do and information you provide.

We collect the content and other information you provide when you use our Services, including when you sign up for an account, create or share, and message or communicate with others. This can include information in or about the content you provide, such as the location of a photo or the date a file was created. We also collect information about how you use our Services, such as the types of content you view or engage with or the frequency and duration of your activities.

#### Things others do and information they provide.

We also collect content and information that other people provide when they use our Services, including information about you, such as when they share a photo of you, send a message to you, or upload, sync or import your contact information.

Your networks and connections.



## The website to the right is an example of how structure can be used to help users scan and find information

#### **Predatory Loans**

Most mortgage professionals are trustworthy and provide a valuable service, helping you to buy or refinance your home. But dishonest or "predatory" lenders do exist and engage in practices that increase the chances of borrowers losing their homes to foreclosure. To avoid becoming a victim of predatory lending, you need to understand the process to buy a home and be a smart consumer.

#### What Is Predatory Lending?

Predatory lenders, appraisers, mortgage brokers and home improvement contractors could use any of these tactics to take away your home or investments:

- Sell properties for much more than they are worth using false appraisals.
- Encourage borrowers to lie about their income, expenses, or cash available for down payments in order to get a loan.
- Knowingly lend more money than a borrower can afford to repay.
- Charge high interest rates to borrowers based on their race or national origin and not on their credit history.
- Charge fees for unnecessary or nonexistent products and services.

#### Avoid Predatory Loans by Being a Smart Consumer

To avoid becoming a victim of predatory lending, follow these guidelines:

- Before you buy a home, attend a homeownership education course offered by a U.S. Department of Housing and Urban Development (HUD)-approved, non-profit <u>counseling</u> <u>agency</u>.
- Interview several real estate professionals (agents), and ask for and check references before
  you select one to help you buy or sell a home.
- Get information about the prices of other homes in the neighborhood. Don't be fooled into paying too much.
- Hire a qualified and licensed home inspector to carefully inspect the property before you are obligated to buy. Determine whether you or the seller will be responsible for paying for the repairs.
- Shop for a lender and compare costs. Be suspicious if anyone tries to steer you to just one lender.

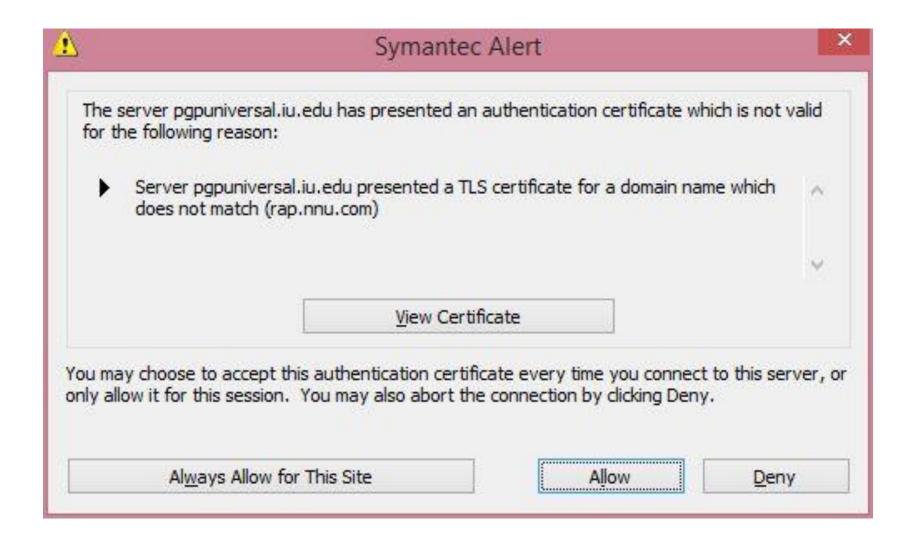
If you believe you have been a victim of predatory lending, you can find a list of <u>federal</u>, <u>state</u>, <u>and local resources</u> at the HUD Office of Housing Counseling.

## Now lets talk about some of the basics of displaying text

## **Common issues with text**

- Uncommon or unfamiliar vocabulary
- Difficult scripts and typefaces
- Tiny fonts
- Text on noisy backgrounds
- Information buried in repetition
- Centered text
- Too much text (You can usually delete half of most text)

## Uncommon or unfamiliar vocabulary



## Difficult scripts and typefaces

Some example text from usa.gov/mortgages

## **Predatory Loans**

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# Difficult scripts and typefaces

All capitals is hard to read because it prevents scanning

#### PREDATORY LOANS

MOST MORTGAGE PROFESSIONALS ARE TRUSTWORTHY AND PROVIDE A VALUABLE SERVICE, HELPING YOU TO BUY OR REFINANCE YOUR HOME. BUT DISHONEST OR "PREDATORY" LENDERS DO EXIST AND ENGAGE IN PRACTICES THAT INCREASE THE CHANCES OF BORROWERS LOSING THEIR HOMES TO FORECLOSURE. TO AVOID BECOMING A VICTIM OF PREDATORY LENDING, YOU NEED TO UNDERSTAND THE PROCESS TO BUY A HOME AND BE A SMART CONSUMER.

#### WHAT IS PREDATORY LENDING?

PREDATORY LENDERS, APPRAISERS, MORTGAGE BROKERS AND HOME IMPROVEMENT CONTRACTORS COULD USE ANY OF THESE TACTICS TO TAKE AWAY YOUR HOME OR INVESTMENTS:

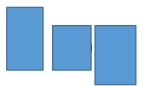
- SELL PROPERTIES FOR MUCH MORE THAN THEY ARE WORTH USING FALSE APPRAISALS.
- ENCOURAGE BORROWERS TO LIE ABOUT THEIR INCOME, EXPENSES, OR CASH AVAILABLE FOR DOWN PAYMENTS IN ORDER TO GET A LOAN.

## Consider this shape

What word is it?







## Difficult scripts and typefaces

## Some fonts are easy to read

## **Predatory Loans**

Most mortgage professionals are trustworthy and provide a valuable service, helping you to buy or refinance your home. But dishonest or "predatory" lenders do exist and engage in practices that increase the chances of borrowers losing their homes to foreclosure. To avoid becoming a victim of predatory lending, you need to understand the process to buy a home and be a smart consumer.

## What Is Predatory Lending?

Predatory lenders, appraisers, mortgage brokers and home improvement contractors could use any of these tactics to take away your home or investments:

- Sell properties for much more than they are worth using false appraisals.
- Encourage borrowers to lie about their income, expenses, or cash available for down payments in order to get a loan.

# Difficult scripts and typefaces

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# Difficult scripts and typefaces

Weird fonts make reading super complex.

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## **Tiny fonts**

Worse than tiny fonts are tiny fonts that cannot be enlarged

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## Text on noisy backgrounds

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#### **Avoid Predatory Loans by Being a Smart Consumer**

To avoid becoming a victim of predatory lending, follow these guidelines:

- Before you buy a home, attend a homeownership education course offered by a U.S.
   Department of Housing and Urban Development (HUD)-approved, non-profit counseling agency.
- Interview several real estate professionals (agents), and ask for and check references before you select one to help you buy or sell a home.

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## Information buried in repetition

The options all start and end with the same words making the text hard to read

## **Keyboard and Documentation**

Configure your MacBook with the following language options along with the language of the included user documentation.

- Backlit Keyboard (English) / User's Guide
- Backlit Keyboard (Western Spanish) / User's Guide
- Backlit Keyboard (French) / User's Guide
- Backlit Keyboard (Japanese) / User's Guide

# Information buried in repetition

Pull the repeated text out and only say it once

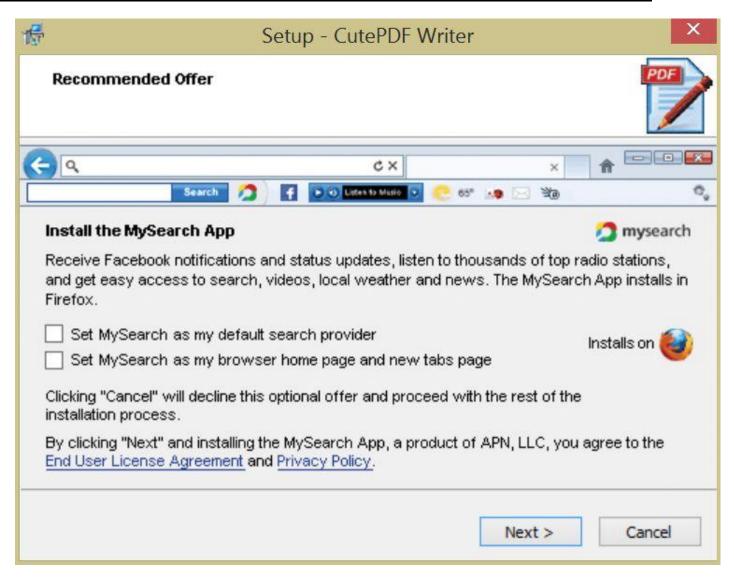
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Backlit Keyboard and User's Guide in:

- English
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- French
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## Information buried in repetition



## **Centered text**

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## **Think-pair-share**

- I will show three web pages for 20 seconds each
- Answer the following questions about the site:
  - What site is this?
  - What is the purpose of this site?
  - Any errors
  - Any good elements

Contact details

Wadler's Blog

Towards Independence

@PhilipWadler

Links

ABCD

Haskell

JFP

FP in the real world

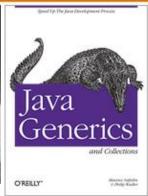
SPLS

Computational Thinking and

Outreach







## **Projects**

Interested in applying for a PhD or Internship?

<u>From Data Types to Session Types: A Basis for Concurrency and Distribution</u>, an EPSRC Programme Grant, joint with Simon Gay, Glasgow, and Nobuko Yoshida, Imperial.

TypeScript: The Next Generation funded by a Microsoft Research PhD Scholarship.

Centre for Doctoral Training in Pervasive Parallelism, studentships available for cohort starting September 2016.

## **Currently:**

- Professor of Theoretical Computer Science, <u>Laboratory for Foundations of Computer Science</u>, <u>School of Informatics</u>, <u>University of Edinburgh</u> (2003—).
- ACM Special Interest Group on Programming Languages, Chair (2009-2012), Past Chair (2012-2015).

















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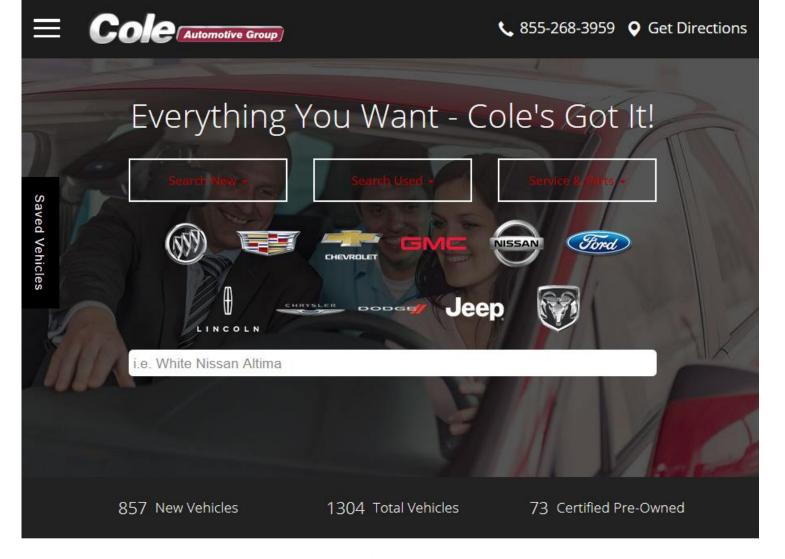
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Schedule a meeting





## **Our Reviews**



## **Questions?**