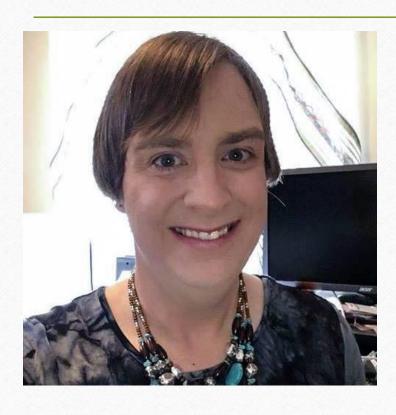
Joelle Tori Maslak - JMASLAK

You're Not Wanted Here!

How design decisions can make your application discriminatory

The Perl Conference 2018 Salt Lake City, UT, USA

Who Is Joelle?



- Perl Developer since 1995
- First Program Written: 1982 (it displayed her name

 that's important to a five year old girl!)
- First Unix: A/UX (not a typo)
- First Linux: Slackware 1.1
- First CPAN Module: Acme::Unicodify
- First useful CPAN Module: Parallel::WorkUnit
- She has a lot of opinions. They are hers, not her employer's!

Why Discriminatory Design Happen?



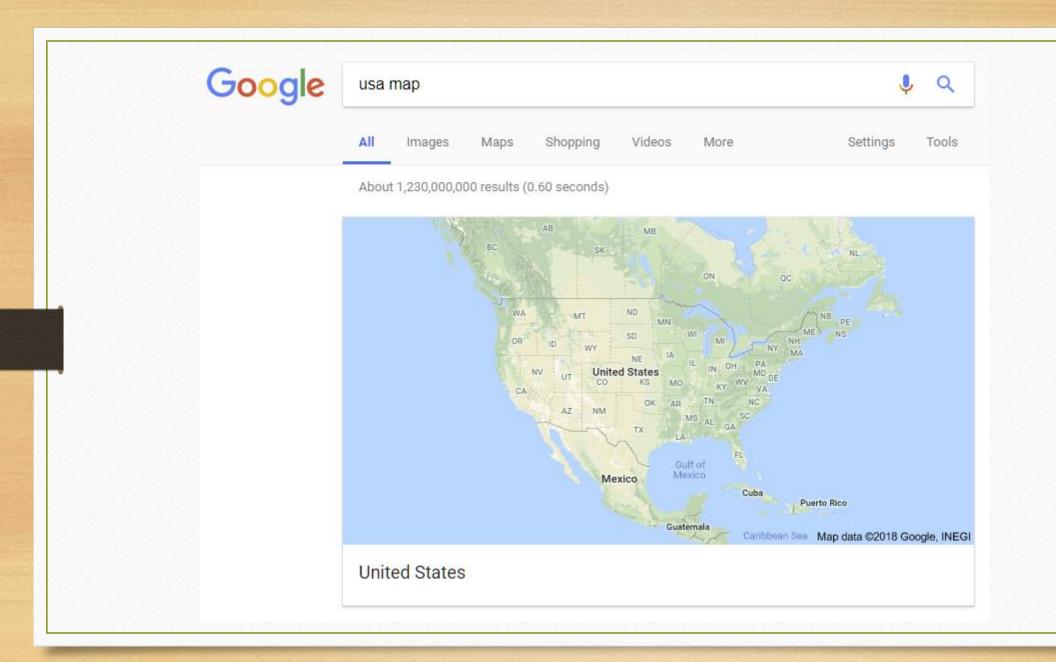
Designing for the 100% - or even 5% - is hard. The 2% is easy!

- USA residents are 4.3% of the world population (UN)
- Approximately 8% of people in the USA say they do not speak or write English well (US Census Dept)
- Approximately 25% of American adults have zero credit cards
- 30% of Americans have no internet at home

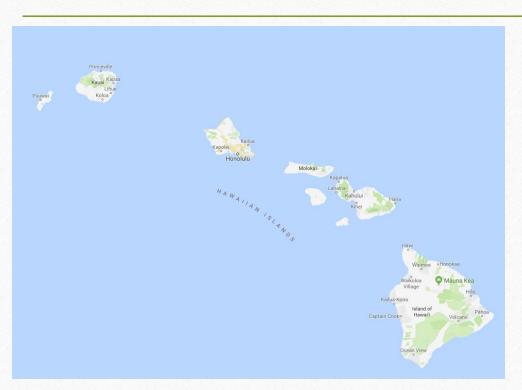
 $.043 \times .92 \times .75 \times .70 = 2.1\%$

We Only Do Business in the USA!

And by that, we mean...



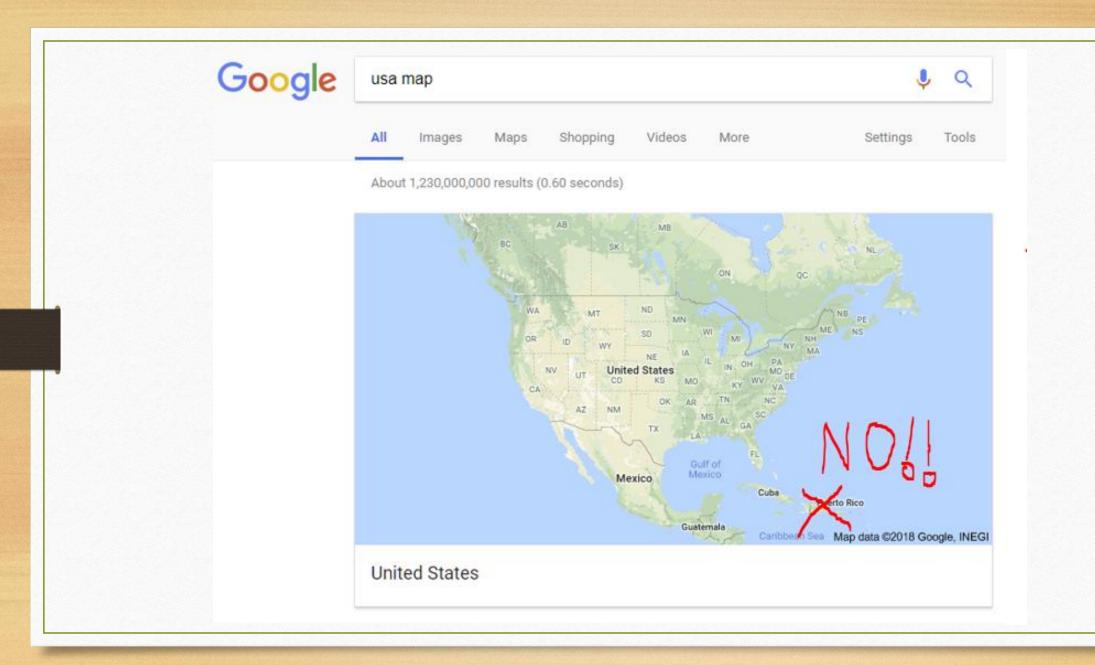
Not These People





Definitely Not All of These





Yes, USA only. Not these people.





Not Just Geography...

Including People With Physical Disabilities



- Don't require extensive use of mouse-based navigation (allow keyboard alternatives)
- Minimize scrolling
- Touch or mouse targets should be large
- Eliminate timeouts on forms
- Back button & refresh should not reset everything
- Different physical disabilities require different interfaces!



Include All Ages



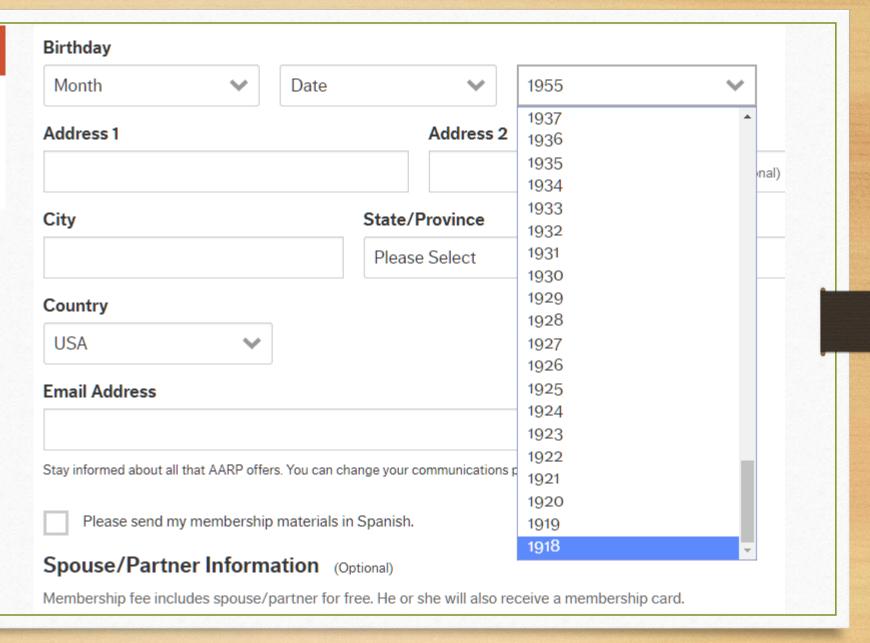
- Age of majority is not always 18.
- 101 year-old people also use computers!
- Different age groups use different technology
- 25 year-old developers can often read fonts50 year-olds cannot
- Security questions should not assume youth

But nobody that old uses my site...

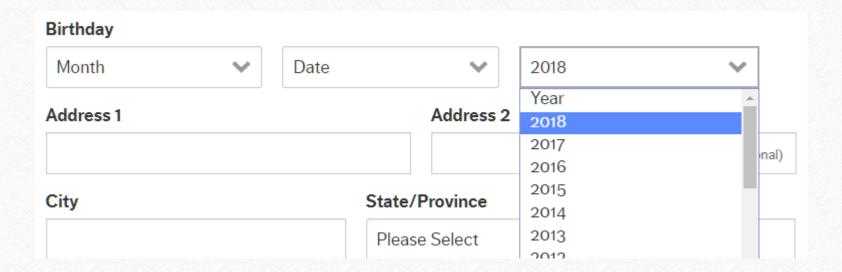




Join AARP

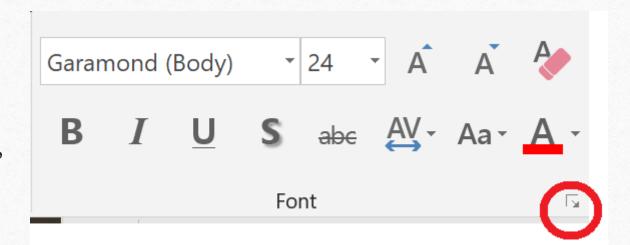


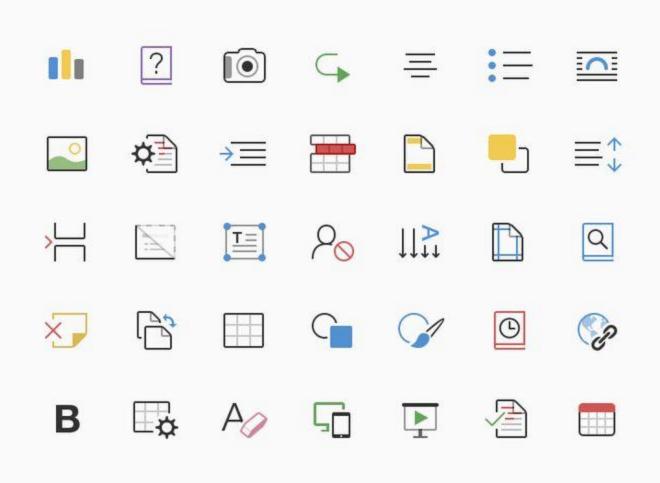
Never Too Young For That Senior Discount!



Computer Knowledge

- What does "..." mean?
- What does "+" and "-" mean?
- GUIs are always more friendly, right?





Financial



- Don't assume everyone has
 - ...a credit card
 - ...a cell phone
 - ...a bank account
 - ...a home address
- Not all credit cards have a chip & PIN
- Postal codes have more than one format

Case Study - Amtrak



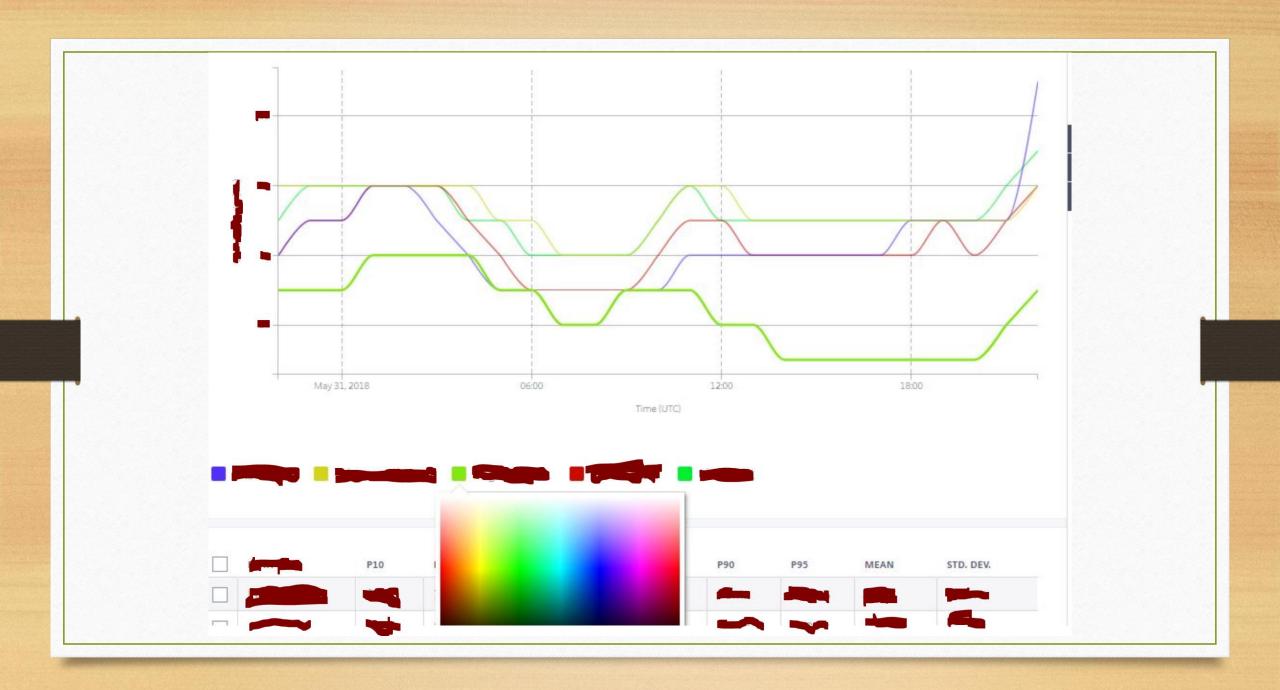
- Everyone buys tickets online, right?
- Everyone wanting tickets has a credit card, right?
- Everyone has internet access these days, right?



Sensory Disabilities



- Don't require typical vision
 - Use good contrast
 - Avoid small fonts
 - Use alt tags
- Use captions for audio
- Avoid color as the sole way of conveying information



Addresses



- You can't map people to 2D space (the vertical matters!)
- Addresses don't all have the same parts a "street" for instance.
- N lines are insufficient for an address (for small values of N)
- Street, city, and building names change
- Allow new construction!
- (at least in USA) Don't infer city from postal code

And people move!

About Addresses

Registration address - This is your main contact address, so it's important to keep it up to date and accurate.

Payment address - This is where you'd like buyers to send payments for items you sell. It will only be displayed to winning bidders or buyers if you accept payments by mail. Learn more about providing a payment address.

Primary shipping address - This is where you'd like to receive items you purchase.

Primary ship from address - This is where the packages will be shipped from.

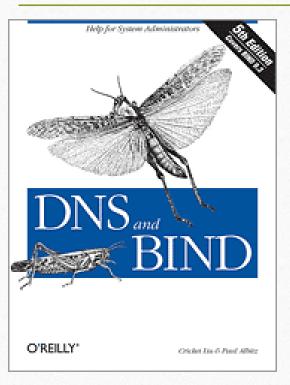
Primary return address - This is where you'd like buyers to send their returned items to.

Knowledge



- Tell people where to find information they need to enter
- Define acronyms
- Avoid industry terms "Enter ABA Routing Number," "API," and "Avatar".
- Make it easy to file bugs or use a support form!
- Don't exclude newcomers!

Bad Knowledge Example 1: DNS & Bind



Context: Hostname request system at a large enterprise.

"If you don't know how to fill out this form, please consult <u>DNS & BIND</u> by Albitz & Liu, 5th Ed, Feb 2009."

A link was provided to the organization's library catalog. There was no online references provided.

Bad Knowledge Example 2: Bug Trackers

- Calls bug reports and feature requests "tickets"
- Makes the user select from a confusing list of categories
- Requires an understanding of the internals to file a report.
- Best of all, suggest new users "contribute" by filing bug reports!
- You'll ignore the severity they enter, but ask anyhow!
- For bonus points, severities should be numbered 1 through 8.

Gender



- Don't collect it when you don't need it.
- Gender is not fixed, binary, or immutable, and is sometimes accidentally entered wrong.
- Allow people to change gender without calling support
- Designs statistically preferred by men are considered "professional" by men. Be careful with this bias!



General

Email Updates

Mobile Notifications

Privacy

Social Media

Organizer Subscription

> Payment Methods

Payments made

Apps

General

Name: Joelle Tori Maslak edit jmaslak edit User ID:

Email jmaslak@antelope.net edit

address:

Password: (Hidden) edit

Location: Denver, CO edit

Hometown: Not entered edit

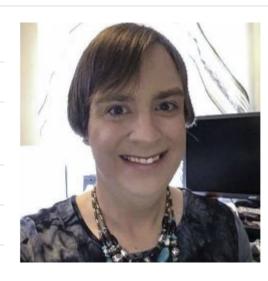
English edit Language:

Birthday: set birthday

Gender: Female edit

Bio: Technologist, Shape Shifter, Wife, Geek,

Christian, Motorcycle Rider, Puppy Parent edit



Manage photos



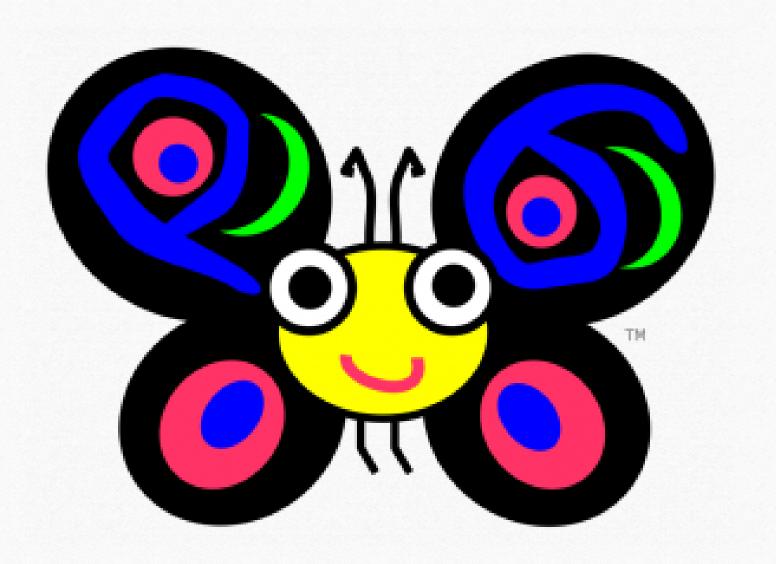
Asking for Gender

Public Health Partnership Survey 2018

How do you describe yourself?

- Female
- Male
- Transgender
- O Do not identify as female, male, or transgender





Numbers & Dates

- Dates have local formats MM/DD/YYYY vs. DD/MM/YYYY
- Numbers, too one hundred thousand is not always written 100,000
 - Sometimes 100.000
 - Or 1,00,000
 - Or 1

But...I Don't Care! Don't worry, Perl does!

A possible trap – this will say it is a number and print the string:

```
if (''''' =~ m/^\d+$/) { say "''' matches"; }
```

Output:

natches

From the Docs

From perlre –

- "The /d, /u , and /l modifiers are not likely to be of much use to you..."
- "The /a modifier, on the other hand, may be useful."



forked from muir/Net-Netmask

- <> Code
- (!) Issues 2
- 🍴 Pull requests 0

1••.1••.1••/32 Parses #4

(!) Open

jmaslak opened this issue just now · 0 comm



jmaslak commented just now

'\••.\••.\••.\1••/32' Parses. It shouldn't.

Perl Modules to Use ...when making non-discriminatory apps...

- DateTime::Format::CLDR
- CLDR::Number -

```
my $cldr = CLDR::Number->new(locale => 'en-US');
my $decf = $cldr->decimal_formatter;
say "US: ", $decf->format('123456789.5');

5 $cldr = CLDR::Number->new(locale => 'en-IN');
6 $decf = $cldr->decimal_formatter;
7 say "IN: ", $decf->format('123456789.5');
```

US: 123,456,789.5 IN: 12,34,56,789.5

Names

- "first name" doesn't mean given name and "last name" doesn't mean family name
- Some cultures don't prefer <title> <lastname>
 - "Ms. Gunnarsdóttir"
- Allow nicknames and other non-legal names if possible
- Explain why you need the name
- Use of middle initials is culturally dependent
- Don't assume two names, or even three when you want a middle initial. One blank!
- Don't use name to link databases



More Names



- Allow apostrophes, hypens, and spaces in names
 - Mr. O'Malley
- And accent marks
 - José he's not Jose.
- John Smith Sr. and John Smith Jr. might both use your system

Bad Example Perl Code

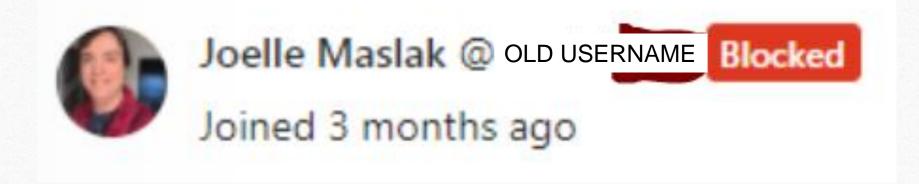
```
1 ($first, $last) = split / /, $name;
2
3 die "Use only A-Z in the name" if $name =~ m/^\w+$/;
```

Names – Make it Easy to Get Married!

Jefferson Courty Court. Colorado Court Address. 100 Jefferson County Parkway Golden, CO 80401 In the Matter of the Petition of: For a Change of Name to: Joelle Tori Maslak	COURT USE ONLY Case Number	
		Division Courtroom
		FINAL DECREE FOR CHA
	he Court having read and considered the Petition for Cha	nge of Name finds:
That the statutory requirements for a change of name unde	r §13-15-101, C.R.S. have been met	
That the desired change of name is proper and not detrime	ental to the interests of any other person;	
That the change of name is in the best interest of the minor	rightid; and	
That the Petitioner, being an adult or child 14 years of a adjudicated a juvenile delinquent for an offense that would state or any other state or under federal law.	ge or older, has not been convicted of a felony of a constitute a felony if committed by an adult in this	
The Court further finds that:		
	and assure why publication overwent to \$13-15-102	
Publication is not required, as the Petitioner has shown go C.R.S. should not apply.	ood cause why publication porsonal to 310-10-100	
Publication is not required, as the Petitioner has shown go C.R.S. should not apply. The Court Orders the following change of name:	ood cause why publication for solen to 3 to 10 t	
C.R.S. should not apply. The Court Orders the following change of name: The name of	hanges to facte for Masiak	
C.R.S. should not apply. The Court Orders the following change of name:		
C.R.S. should not apply. The Court Orders the following change of name: The name of	hanga Forte Ton Maslab E Vance Through Magistrate	

- Names don't stay the same for life
- Usernames change jdoe marries Mr. Smith and becomes jsmith.
- If you store multiple names/addresses, ask if the user wants to change them all.
- Don't require everyone to have specific documentation of legal name changes

Don't Link Databases with Username



About Addresses

Registration address - This is your main contact address, so it's important to keep it up to date and accurate.

Payment address - This is where you'd like buyers to send payments for items you sell. It will only be displayed to winning bidders or buyers if you accept payments by mail. Learn more about providing a payment address.

Primary shipping address - This is where you'd like to receive items you purchase.

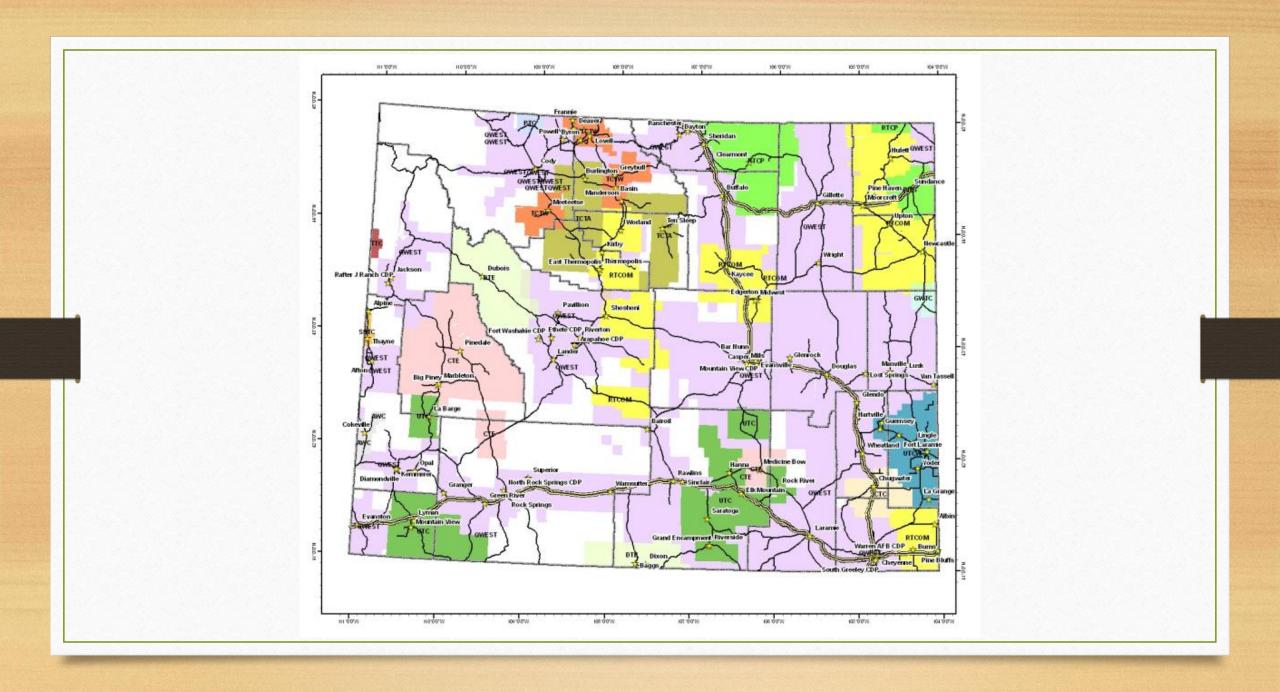
Primary ship from address - This is where the packages will be shipped from.

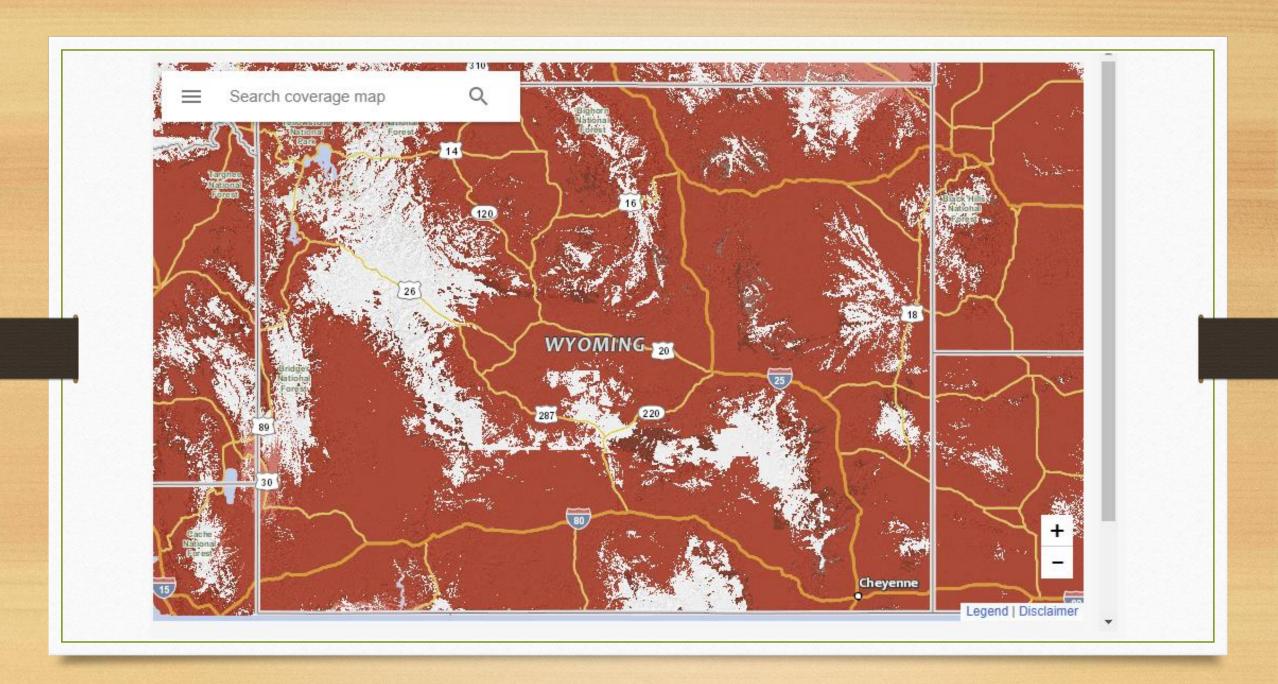
Primary return address - This is where you'd like buyers to send their returned items to.

Phone Numbers



- Allow out-of-country phone numbers
- Not everyone has cell coverage
- Let the computer format the number
 - You want 5555551212 entered, not 1-555-555-1212 or (555) 555-1212 Perl is awesome and can munge text!







National Radio Quiet Zone



Owing to the sensitivity of radio astronomy observations, the NRQZ is critical to the continued success of radio astronomy in Green Bank, and the GBT in particular.

Language Usage

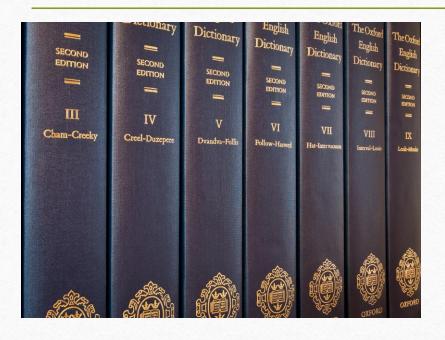
BY TECHNICAL PROBLEMS
OTHER PEOPLE'S TO OUR
COMPANY IS NOT OPERATIVE
THE PAYMENT WITH TARGETAS
OF CREDIT
EXCUSE THE GRACIAS
ANNOYANCES

Okay, a better bad example:

iTunes user agreement – an awesome example of 56 pages of useless information, such as:

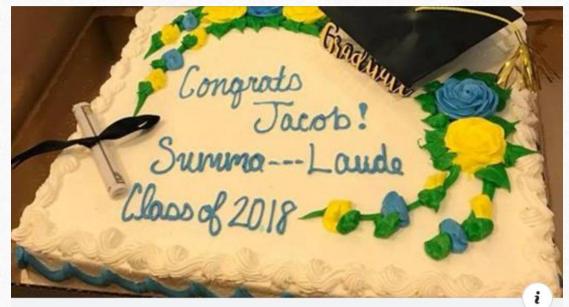
If you are a qualified public educational or government institution and any part of this Agreement, such as, by way of example, all or part of the indemnification section, is invalid or unenforceable against you because of applicable local, national, state or federal law, then that portion shall be deemed invalid or unenforceable, as the case may be, and instead construed in a manner most consistent with applicable governing law.

Language Usage



- Your language might not be their first language
- Avoid idioms and complex figures of speech
- Use simple vocabulary
- Avoid assumptions that are culturalspecific. Not everyone knows what a "Safeway" store is!

Profanity Filters can be Problems!



KDVR.COM

South Carolina grocery censors 'Summa Cum Laude' graduation cake inscription

What if I want to be inclusive?

- Respect what people tell you (names, addresses)
- Consider how universal a "universal" tech is (cell phone, high speed internet)
- People don't always fit into boxes. Be able to handle that.
- Beware of samples of convenience in focus groups
- Reach out to minority communities
- Respond to failure quickly but think before you do!

THANK YOU!

Contact Info -