

Menus and Navigation

No screens



Prof. Lydia Chilton
COMS 4170
25 February 2019

Say your name



Wednesday Feb 20 –Channel 5 news @ 6pm



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ernieanastos The race is for Artificial Intelligence leadership! Columbia professor Lydia Chilton says it's the way to go and we need more A.I. specialists. I hope you're listening!



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Feedback:

Communicate

full and continuous information about
the results of an action and
the **current state of the system**

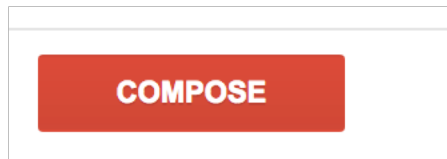
to help people achieve their goal

Even low-level events have full and continuous feedback about actions and states



Click!
Depress!

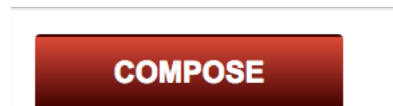
Normal state



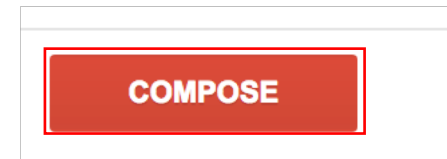
Mouseover



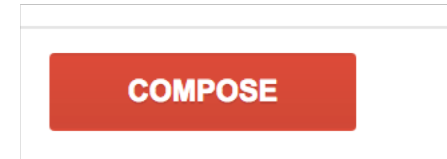
Mousedown



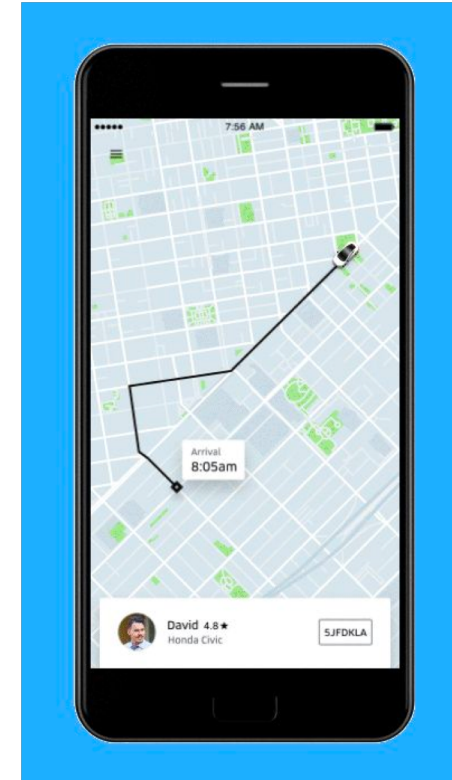
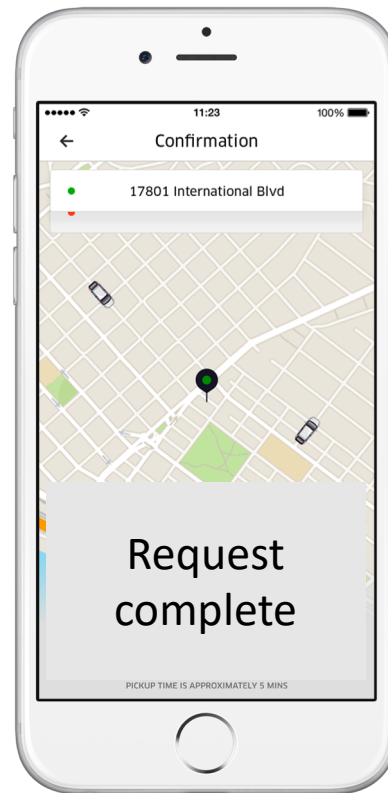
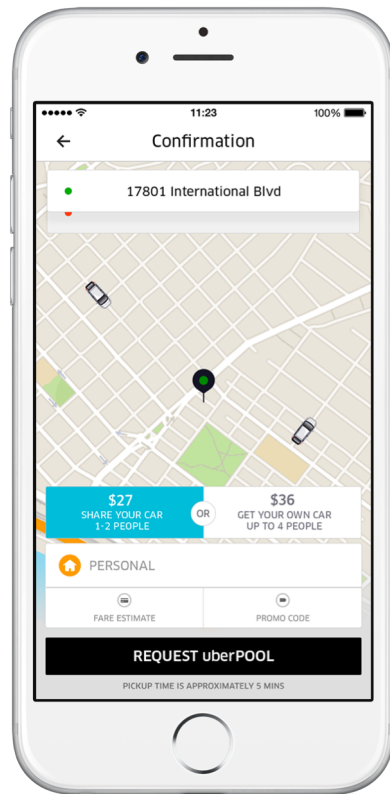
Mouseup



Normal state



What goes wrong when feedback acknowledges the action but **does not communicate the new state**?

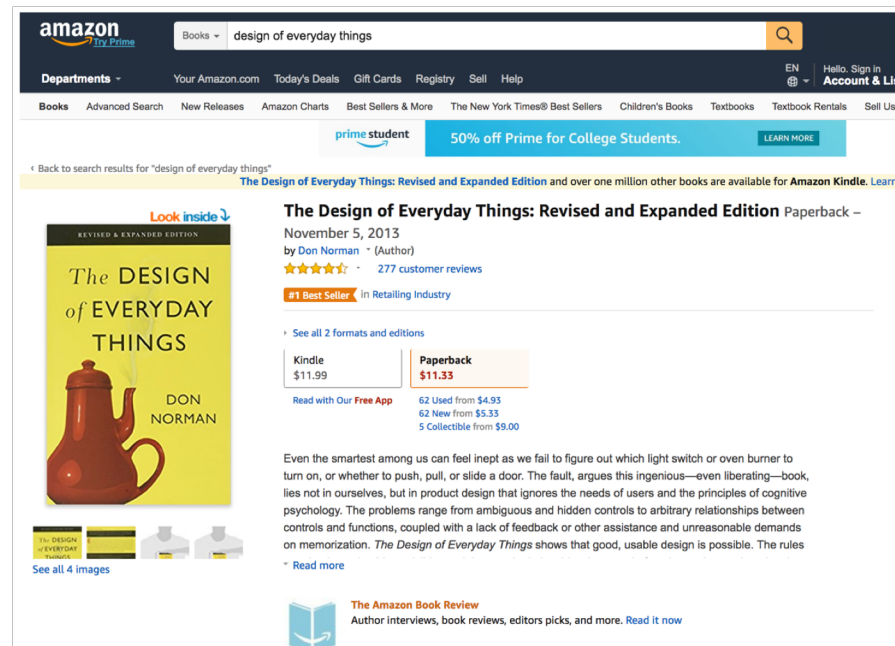


Thought: Users will think they are still in the old state.

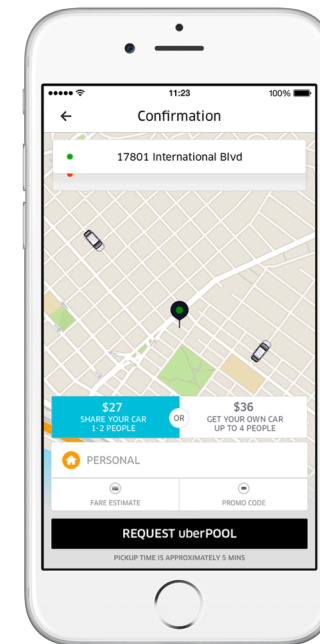
Action: Users will continue to perform actions from the previous state

We are designing applications that help people achieve fairly complex goals.

Buy a book



Hail a cab to JFK



Can we put it all the information on one big page?

But for complex tasks, there is too much information to fit in one screen.

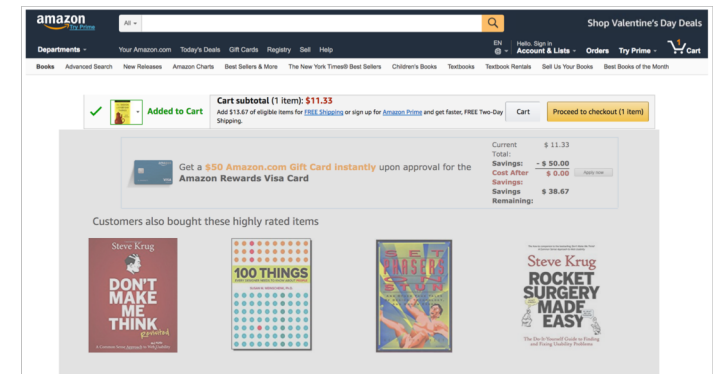
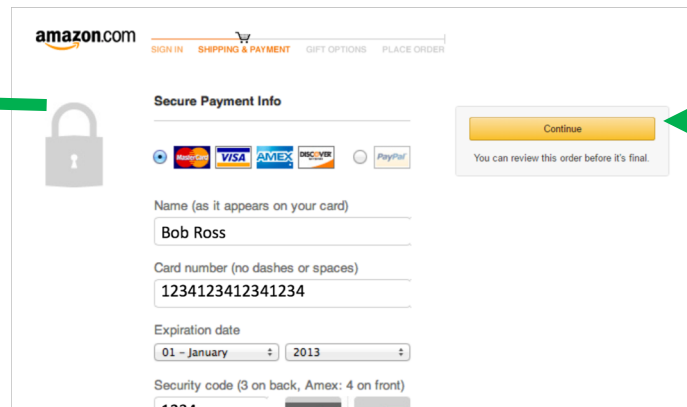
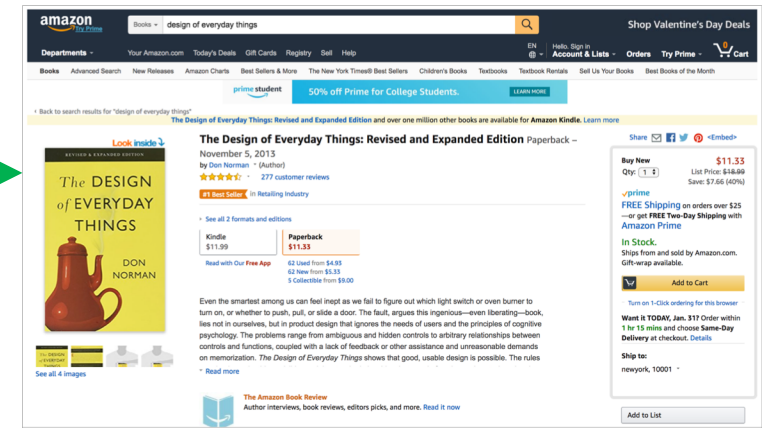
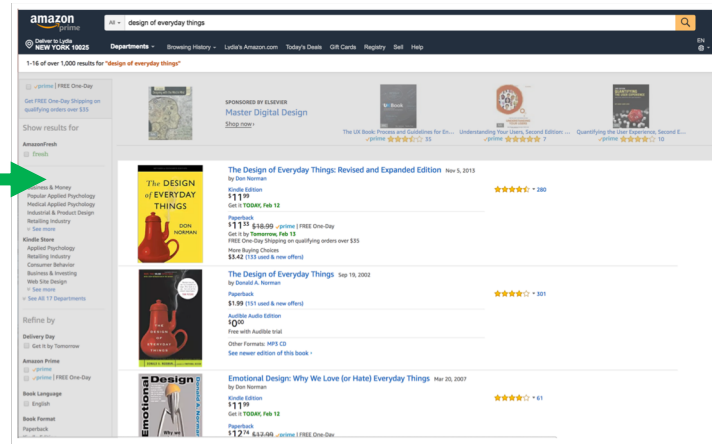
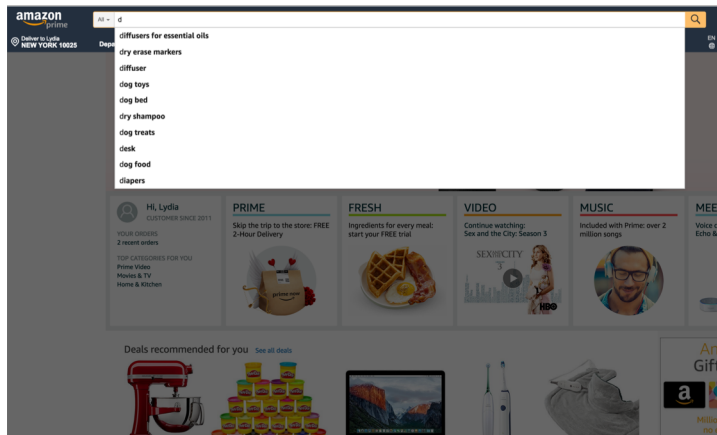
Buying a book on Amazon:

- Search for the book
- Select the edition
- See the reviews
- Look at the index
- How many pages does it have?
- Put it in your cart
- Shop around for other things
- Select a payment method

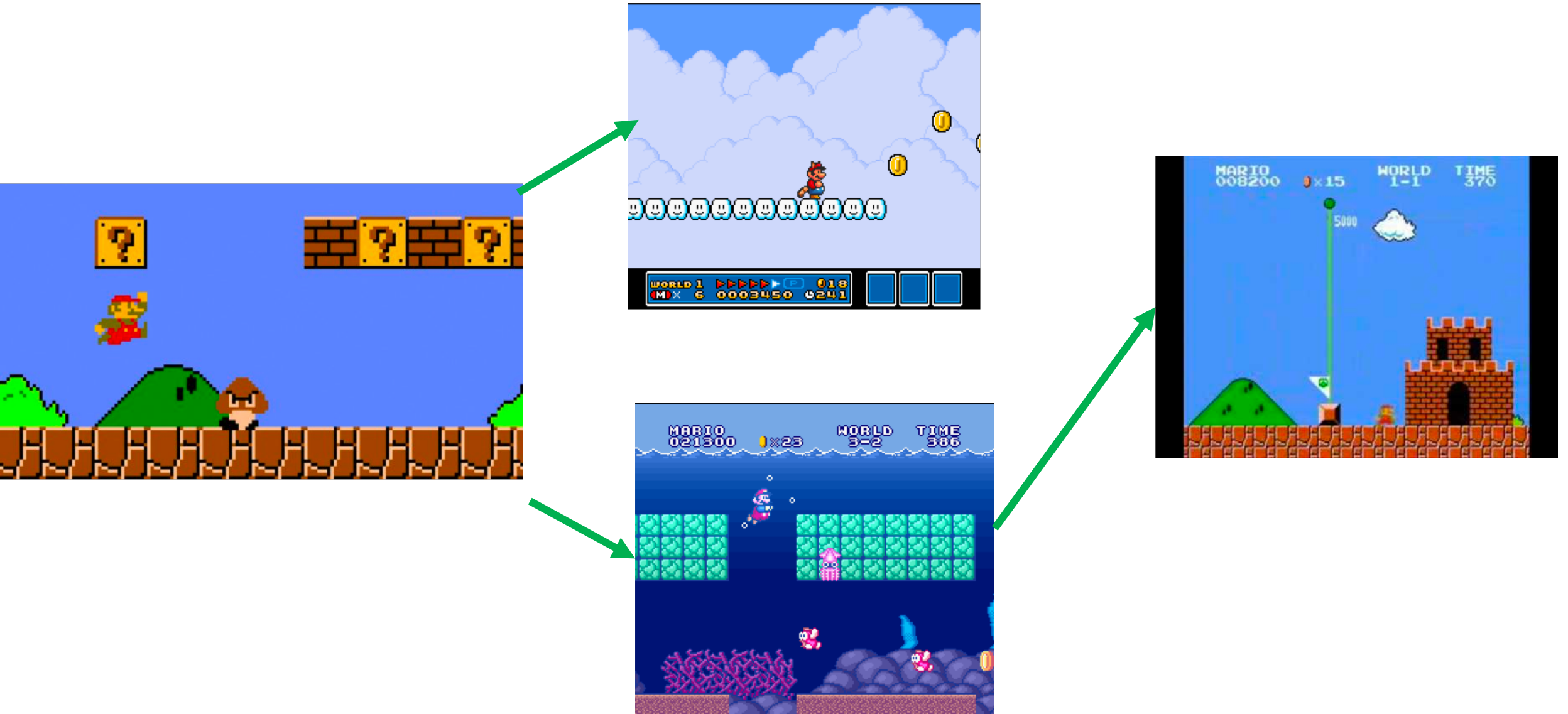
How should we break it up?

- Enter payment method information
- Enter shipping information
- Go back and put something else in the cart
- Change to rush delivery
- Remove something from the cart

For complex goals, break the task into states, options, and transitions to new states.



Think of it like a video game and
You are designing the experience of your user



Examples of

States, Options and Transitions

Goal: Find “The Design of Everyday Things”

What **state** am I in?

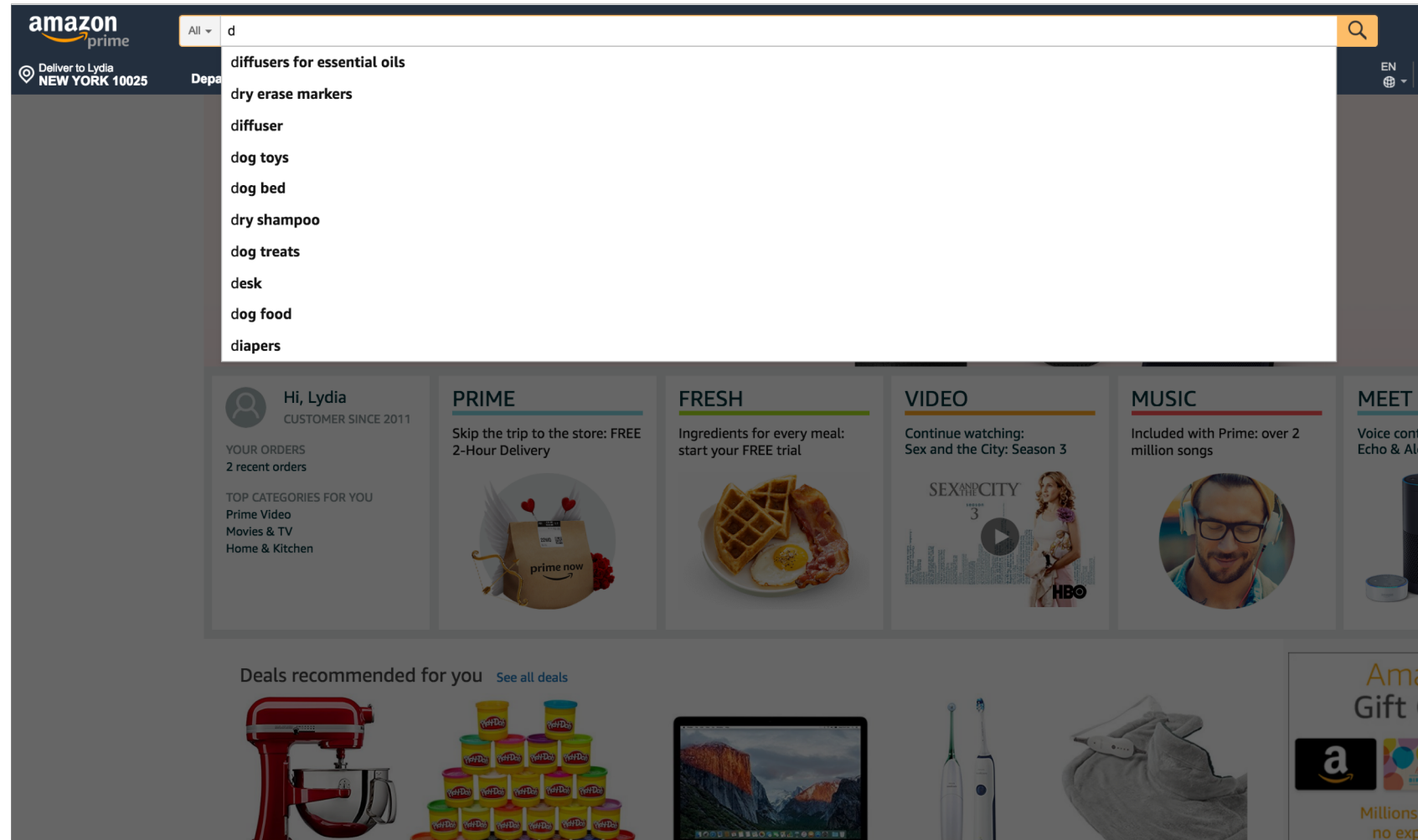
Product Search

What **options** do I have?

All the products

How do I **transition**?

Select an product name



The image shows a screenshot of the Amazon website. At the top, the Amazon Prime logo is visible on the left, and the search bar is on the right. The search bar contains the letter 'd' and a dropdown menu with suggestions: 'diffusers for essential oils', 'dry erase markers', 'diffuser', 'dog toys', 'dog bed', 'dry shampoo', 'dog treats', 'desk', 'dog food', and 'diapers'. Below the search bar, the homepage features a personalized greeting: 'Hi, Lydia, CUSTOMER SINCE 2011'. There are sections for 'YOUR ORDERS' (2 recent orders), 'TOP CATEGORIES FOR YOU' (Prime Video, Movies & TV, Home & Kitchen), 'PRIME' (Skip the trip to the store: FREE 2-Hour Delivery), 'FRESH' (Ingredients for every meal: start your FREE trial), 'VIDEO' (Continue watching: Sex and the City: Season 3), and 'MUSIC' (Included with Prime: over 2 million songs). At the bottom, there are 'Deals recommended for you' with images of a red stand mixer, a stack of yellow containers, a laptop, a toothbrush, and a white bag. A partial 'Amazon Gift' section is visible on the far right.

Goal: find “The Design of Everyday Things”

What **state** am I in?

Product search results

What **options** do I have?

All the products –
different editions

How do I **transition**?

Select an product name

The screenshot shows the Amazon website interface for a search query. At the top, the Amazon Prime logo is visible, along with the location 'Deliver to Lydia NEW YORK 10025'. The search bar contains the text 'design of everyday things'. Below the search bar, there are navigation links for 'Departments', 'Browsing History', 'Lydia's Amazon.com', 'Today's Deals', 'Gift Cards', 'Registry', 'Sell', and 'Help'. The search results are displayed in a grid format. The first result is 'The Design of Everyday Things: Revised and Expanded Edition' by Don Norman, published on Nov 5, 2013. It is available in Kindle Edition for \$11.99 and Paperback for \$11.33 (originally \$19.99). The second result is 'The Design of Everyday Things' by Donald A. Norman, published on Sep 19, 2002. It is available in Paperback for \$1.99 (151 used & new offers) and Audible Audio Edition for \$0.00. The third result is 'Emotional Design: Why We Love (or Hate) Everyday Things' by Don Norman, published on Mar 20, 2007. It is available in Kindle Edition for \$11.99 and Paperback for \$12.74 (originally \$17.99). The left sidebar contains filters for 'AmazonFresh', 'Books', 'Kindle Store', and 'Refine by'.

Goal: Decide if I'll buy "The Design of Everyday Things"

What **state** am I in?

Product info page

What **options** do I have?

Kindle/paper back,

Look in book, reviews

Add to cart

How do I **transition**?

Add to cart OR

Go back

The screenshot shows the Amazon product page for the book "The Design of Everyday Things: Revised and Expanded Edition" by Don Norman. The page includes the Amazon logo, a search bar with the query "design of everyday things", and navigation links for Departments, Your Amazon.com, Today's Deals, Gift Cards, Registry, Sell, and Help. A Prime Student banner offers 50% off for college students. The product title is "The Design of Everyday Things: Revised and Expanded Edition Paperback". The author is Don Norman, and the publication date is November 5, 2013. The book has a 4.5-star rating from 277 customer reviews and is a #1 Best Seller in the Retailing Industry. The price for the paperback is \$11.33, with a list price of \$18.99. The page also features a "Look inside" button, a "Read with Our Free App" button, and a "See all 2 formats and editions" link. The description of the book is visible, discussing the challenges of product design. The page includes social sharing options, a "Buy New" section with a quantity selector, a "FREE Shipping" offer, and an "Add to Cart" button. The shipping address is listed as New York, 10001.

Goal: Decide if I'm done.

What **state** am I in?

“Add to cart” feedback

What **options** do I have?

Check out

See cart

Keep shopping

How do I **transition**?

Click one of the options.

The screenshot shows the Amazon checkout process. At the top, the Amazon logo and navigation links are visible. The cart subtotal is \$11.33. A promotional banner for the Amazon Rewards Visa Card offers a \$50 gift card. Below this, a table shows the current total of \$11.33, a savings of \$50.00, and a remaining amount of \$38.67. A section titled 'Customers also bought these highly rated items' displays four book covers: 'Don't Make Me Think' by Steve Krug, '100 Things' by Susan M. Weinschenk, 'Set Phasers to Work' by Steve Krug, and 'Rocket Surgery Made Easy' by Steve Krug.

amazon Try Prime

All


Shop Vale

Departments

Your Amazon.com Today's Deals Gift Cards Registry Sell Help


EN Hello. Sign in Account & Lists Orders Try

Books Advanced Search New Releases Amazon Charts Best Sellers & More The New York Times® Best Sellers Children's Books Textbooks Textbook Rentals Sell Us Your Books Best Book

✓  Added to Cart

Cart subtotal (1 item): \$11.33
Add \$13.67 of eligible items for [FREE Shipping](#) or sign up for [Amazon Prime](#) and get faster, FREE Two-Day Shipping.

Cart Proceed to checkout (1 item)

 Get a **\$50 Amazon.com Gift Card instantly** upon approval for the **Amazon Rewards Visa Card**

Current Total:	\$ 11.33
Savings:	- \$ 50.00
Cost After Savings:	\$ 0.00 Apply now
Savings Remaining:	\$ 38.67

Customers also bought these highly rated items

Steve Krug
DON'T MAKE ME THINK
pensited
A Common Sense Approach to Web Usability

100 THINGS
EVERY DESIGNER NEEDS TO KNOW ABOUT PEOPLE
SUSAN M. WEINSCHEK, Ph.D.

SET PHASERS TO WORK
AND OTHER TALK TALES OF DESIGN TECHNOLOGY AND USER RESEARCH

Steve Krug
ROCKET SURGERY MADE EASY
The Do-It-Yourself Guide to Finding and Fixing Usability Problems

Goal: Pay for it.

What **state** am I in?

Enter payment

What **options** do I have?

Which payment methods

How do I **transition**?

Press Continue

The screenshot shows the Amazon.com payment page. At the top, the Amazon logo is on the left, and navigation links for 'SIGN IN', 'SHIPPING & PAYMENT', 'GIFT OPTIONS', and 'PLACE ORDER' are on the right. The main section is titled 'Secure Payment Info' and features a large grey padlock icon on the left. Below the title, there are radio buttons for selecting a payment method: MasterCard, VISA, AMEX, DISCOVER, and PayPal. The 'Continue' button is highlighted in yellow. Below the payment options, there are four input fields: 'Name (as it appears on your card)' with the value 'Bob Ross', 'Card number (no dashes or spaces)' with the value '1234123412341234', 'Expiration date' with a dropdown for '01 - January' and a year selector for '2013', and 'Security code (3 on back, Amex: 4 on front)' with the value '1234'. A small inset box on the right contains the 'Continue' button and the text 'You can review this order before it's final.'

amazon.com

SIGN IN SHIPPING & PAYMENT GIFT OPTIONS PLACE ORDER

Secure Payment Info

MasterCard VISA AMEX DISCOVER PayPal

Continue

You can review this order before it's final.

Name (as it appears on your card)
Bob Ross

Card number (no dashes or spaces)
1234123412341234

Expiration date
01 - January 2013

Security code (3 on back, Amex: 4 on front)
1234

Goal: Buy it.

What **state** am I in?

Review and place order

What **options** do I have?

Shipping options,

Change payment options

How do I **transition**?

Press “Place your order”

The screenshot displays the Amazon.com checkout process. At the top, the Amazon logo is followed by navigation links: SIGN IN, SHIPPING & PAYMENT, GIFT-WRAP, and PLACE ORDER. Below this is the 'Review Your Order' section, which includes a disclaimer about the privacy notice and conditions of use.

The main content area is divided into several sections:

- Shipping Address:** Chris Customer, 742 EVERGREEN TERRACE, SPRINGFIELD, WV 20025, United States, Phone: 1234567890. A 'Change' link is provided.
- Billing Information:** Rewards Points ending in 1234. A 'Change' link is provided.
- Billing Address:** Same as shipping address. A 'Change' link is provided.
- Gift Cards & Promotional Codes:** A text input field and an 'Apply' button.
- Estimated delivery:** Sept. 26, 2011.
- Item:** Apple iPad Camera Connection Kit (MC531ZM/A) for \$29.95. It is marked as Prime. Quantity: 1. Sold by: -Media-Mart. Links for 'Change', 'Add gift options', and 'Change' are present.
- Shipping Options:** Choose your Prime shipping speed:
 - FREE Standard Shipping (3-5 business days)
 - FREE Two-Day Shipping –get it Monday, September 26
 - \$3.99/item One-Day Shipping –get it Saturday, September 24
- Order Summary:** Items: \$29.95, Shipping & Handling: \$0.00, Total Before Tax: \$29.95, Estimated Tax To Be Collected: \$0.00, Rewards Points: -\$4.58. **Order Total: \$25.37**
- How are shipping costs calculated?** Amazon Prime Shipping has been applied to the eligible items in your order.

After I buy, what state do I transition to?

Deals recommended for you [See all deals](#)



\$229.99
Ends in 13:41:22



\$6.14 - \$49.69
Ends in 13:41:22



\$999.99
Ends in 13:36:23



\$47.99
\$79.99
Ends in 13:41:22



\$32.00
\$49.99
Ends in 13:41:22

Amazon Gift Cards



Millions of items,
no expiration.

> Shop now

[Ad feedback](#)

Your Dash Buttons

[Manage buttons](#)

[Learn more](#)

TAP HERE for info

TAP HERE to buy



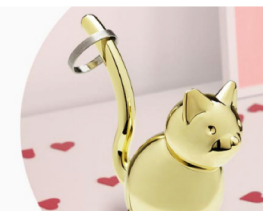
New for you [See more](#)



Budget women's apparel

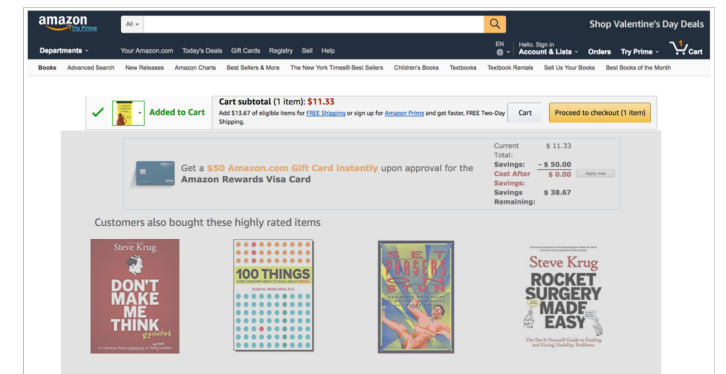
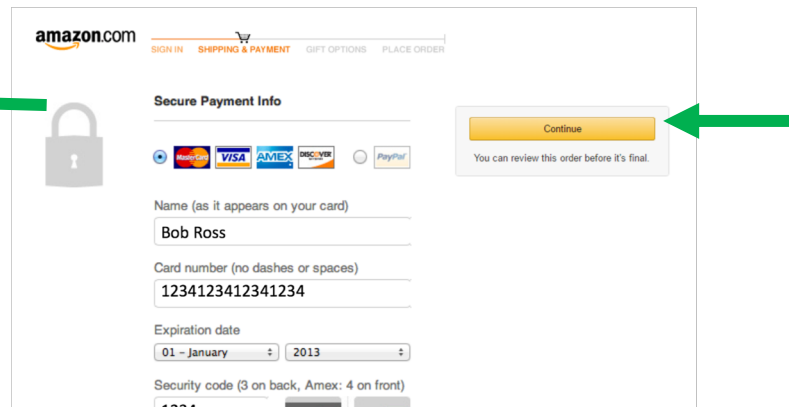
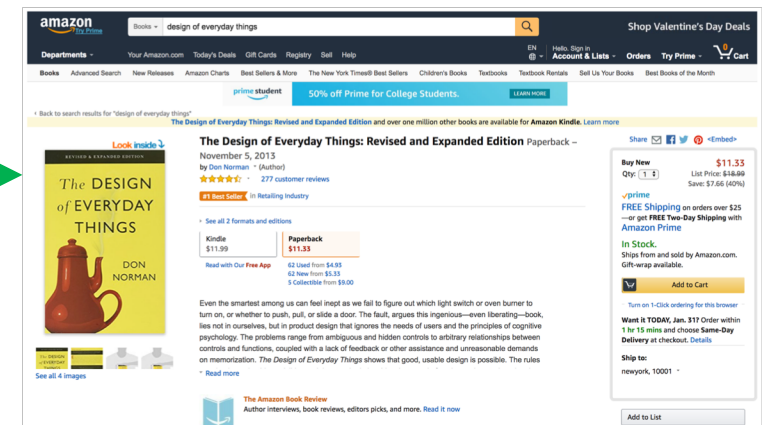
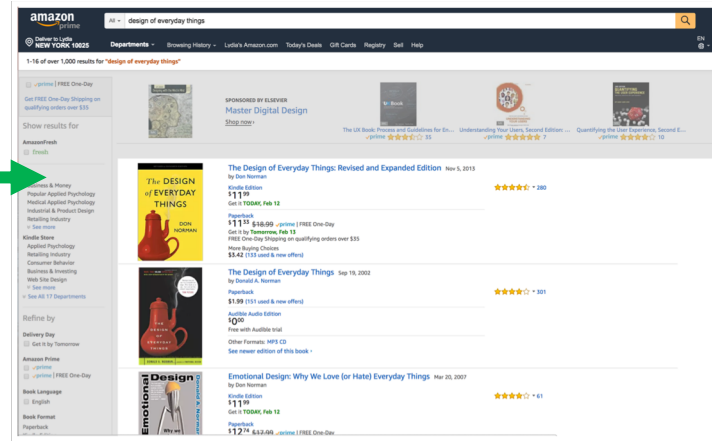
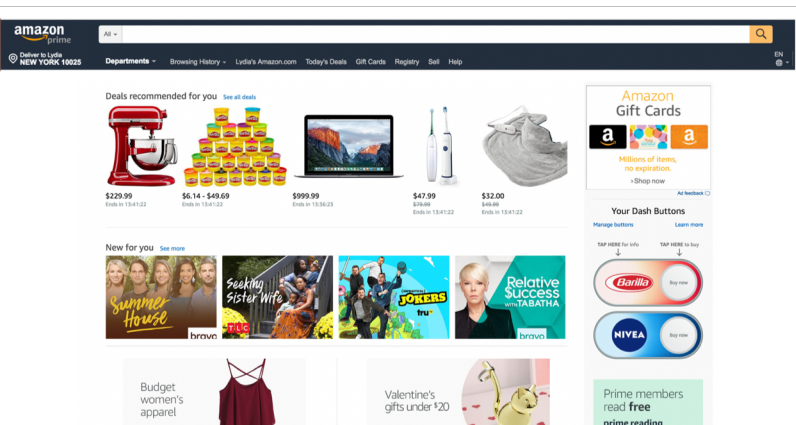


Valentine's gifts under \$20



Prime members read **free** prime reading

For complex goals, break the task into states, options, and transitions to new states.



Goal: Tell Uber where to find me.

What **state** am I in?

Set pickup location

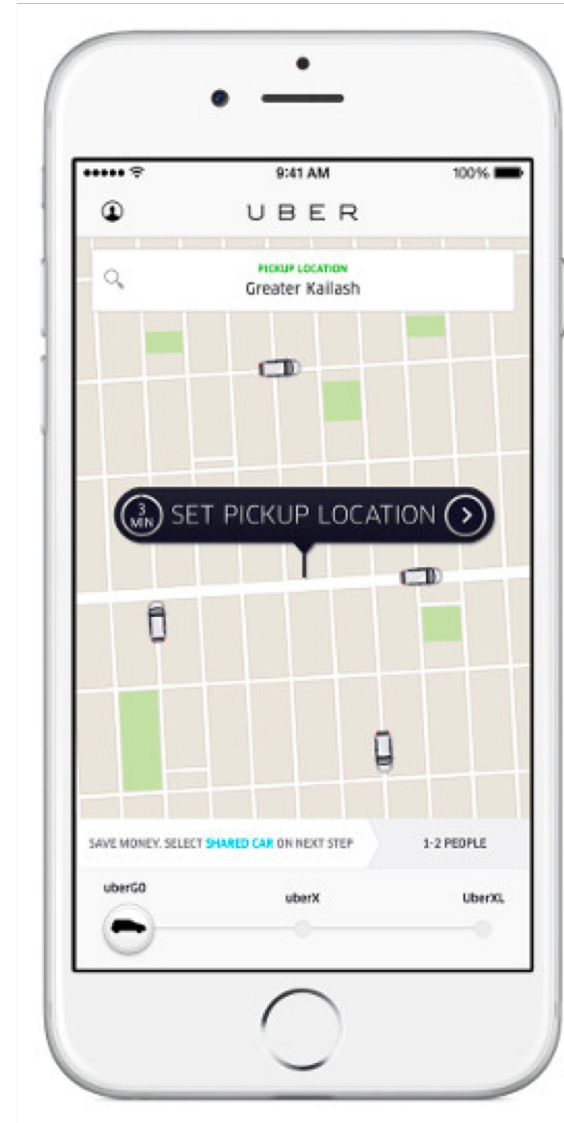
What **options** do I have?

Move pin to different location

What size car: pool/X/XL

How do I **transition**?

Press “Set Pickuplocation”



Goal: Pay for it.

What **state** am I in?

Payment/Confirmation

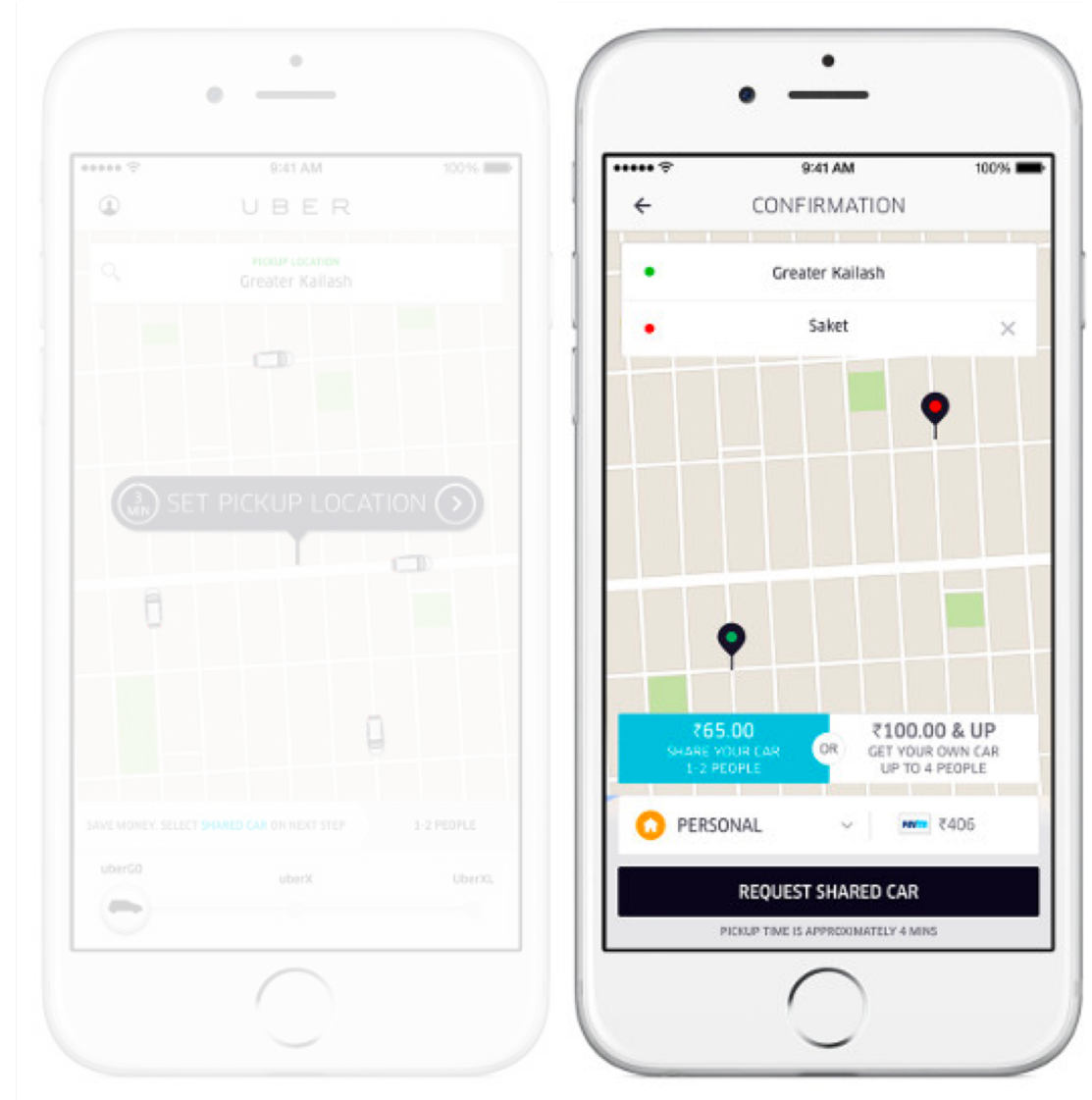
What **options** do I have?

Switch credit cards

Upgrade to your

How do I **transition**?

Press “Request shared car”



Goal: Find car

What **state** am I in?

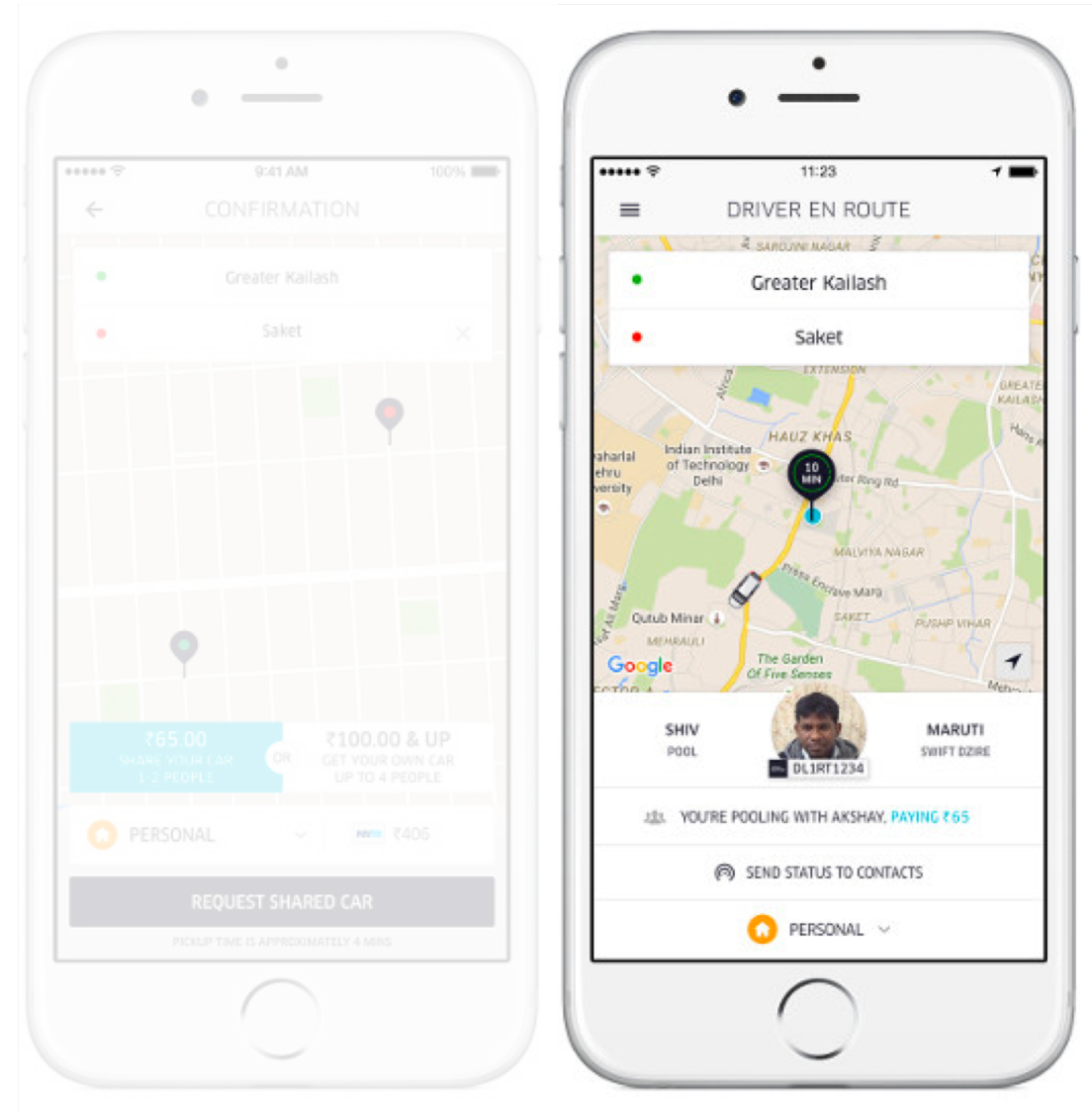
Waiting/"Driver en route"

What **options** do I have?

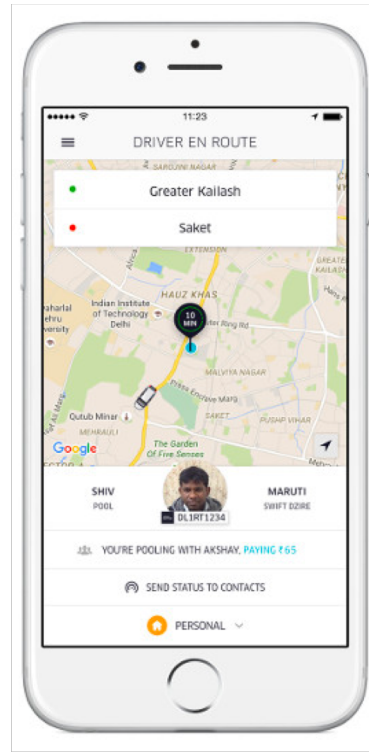
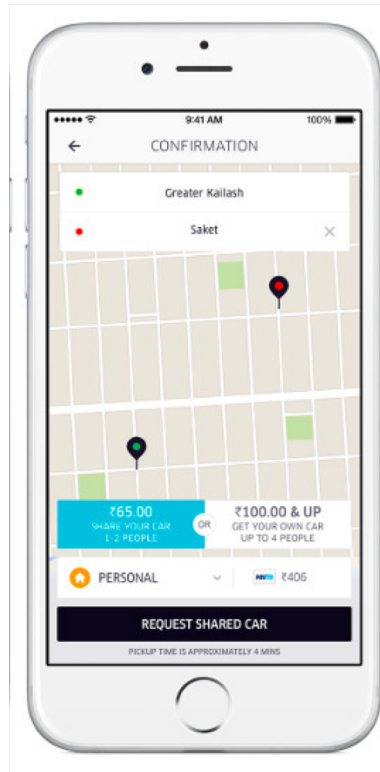
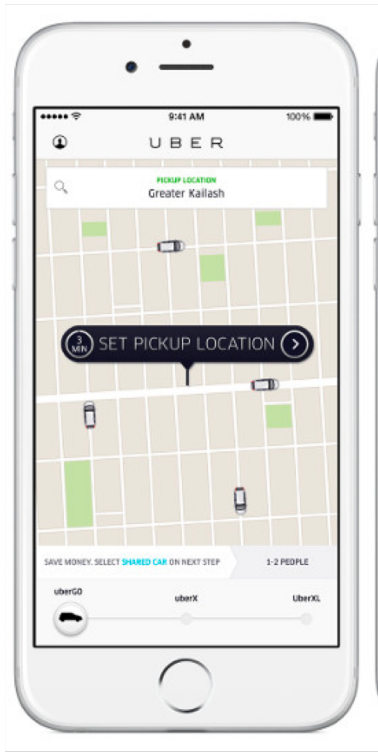
Contact driver

How do I **transition**?

Just wait



For complex goals, break the task into states, options, and transitions to new states.



Goal: Change the font

What **state** am I in?

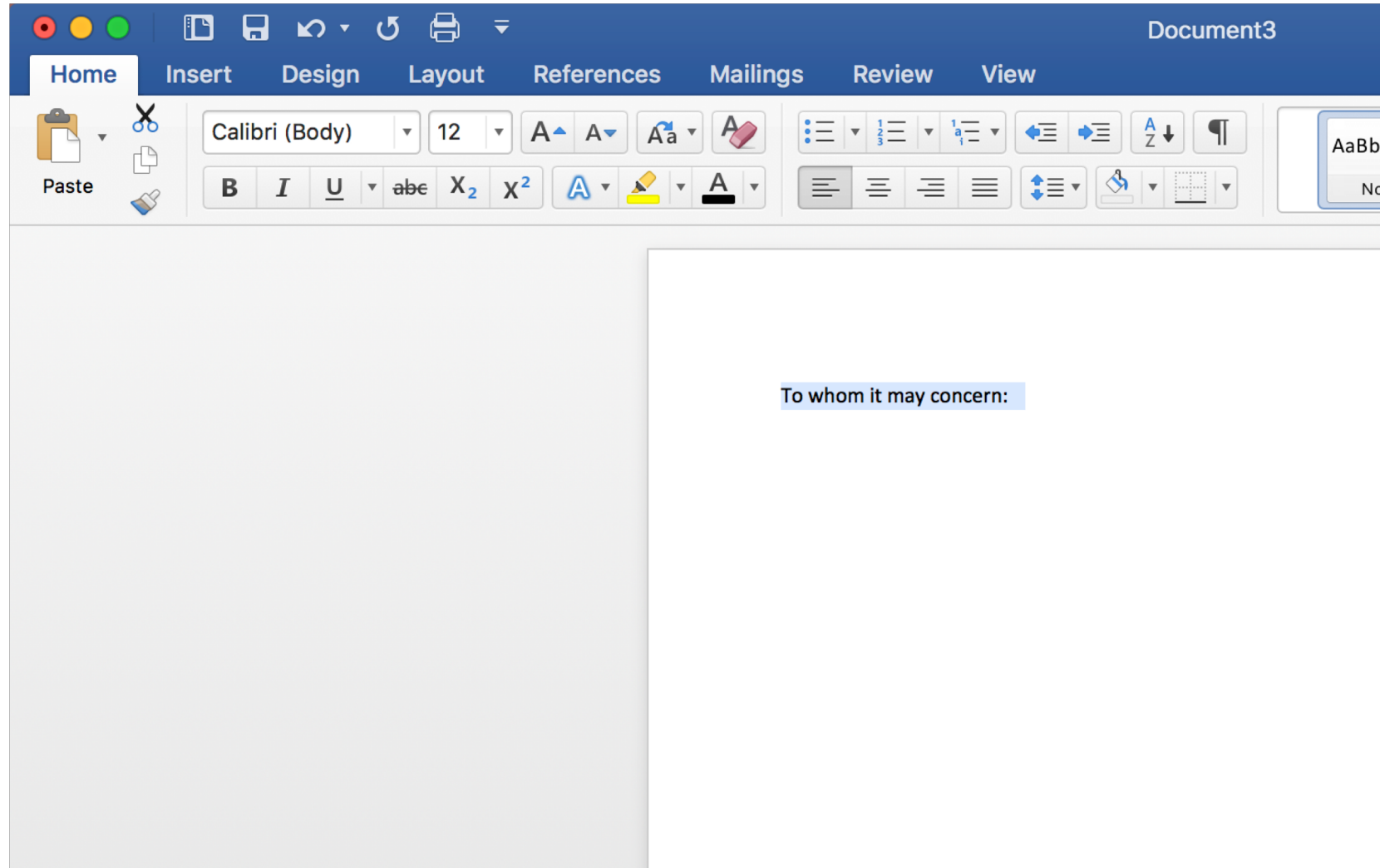
Selected Text

What **options** do I have?

All the menu options –
Font, size, color, bullet pts

How do I **transition**?

Click on the document



Goal: Find a font I like

What **state** am I in?

Font selection

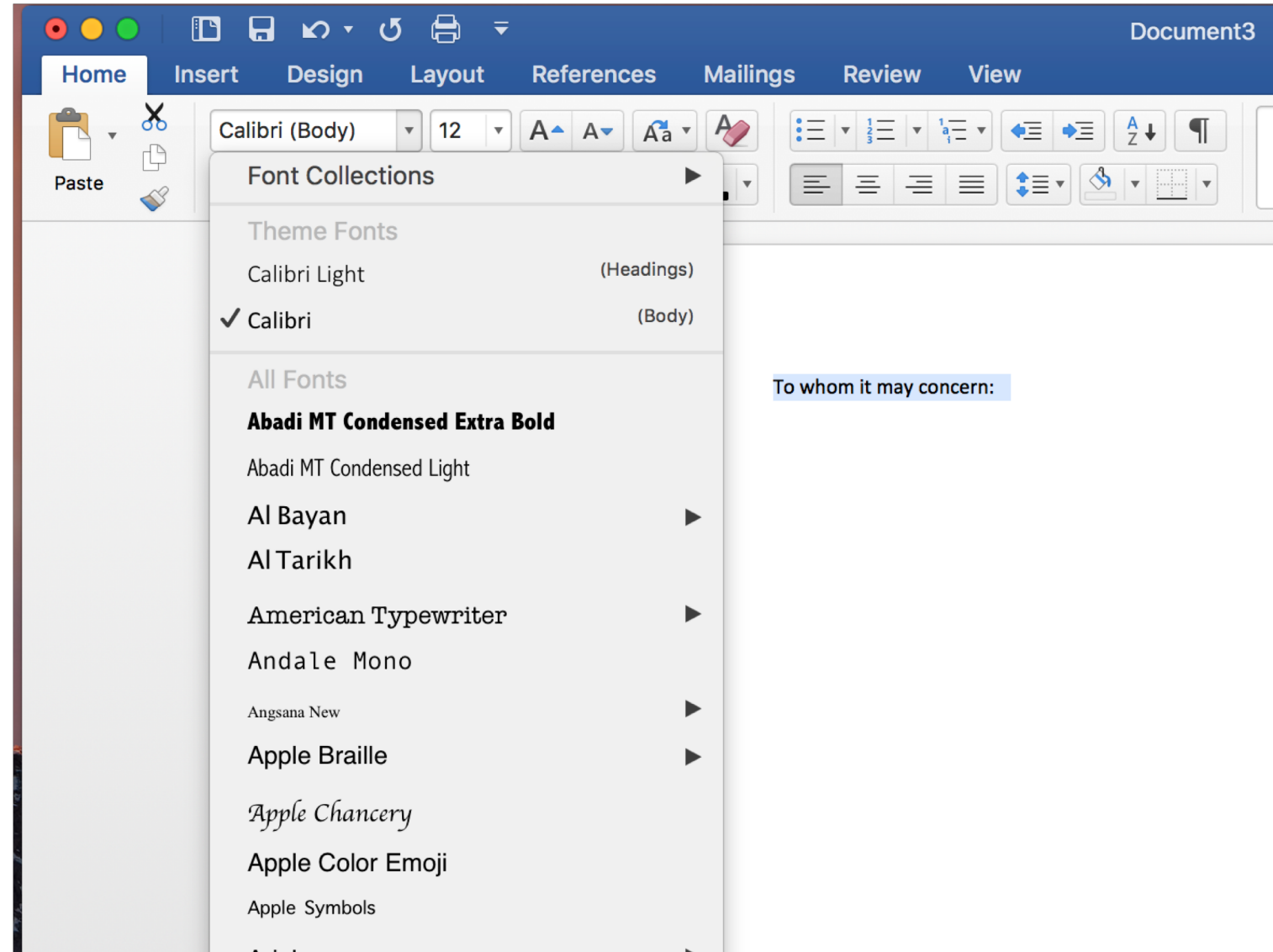
What **options** do I have?

Hundreds of fonts

How do I **transition**?

Select a font OR

Click outside the font menu.



Goal: ?

What **state** am I in?

Selected Text

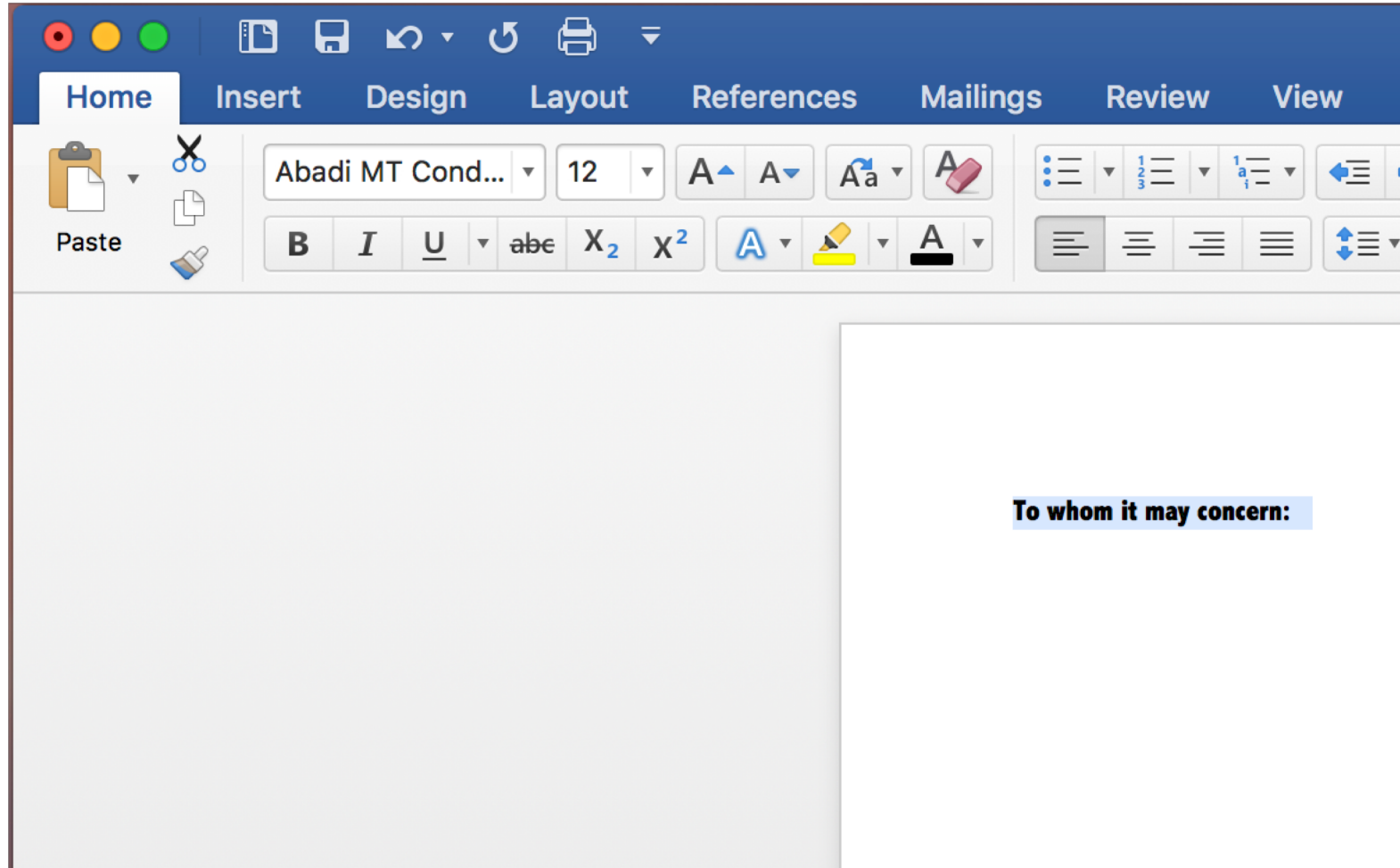
What **options** do I have?

All the menu options

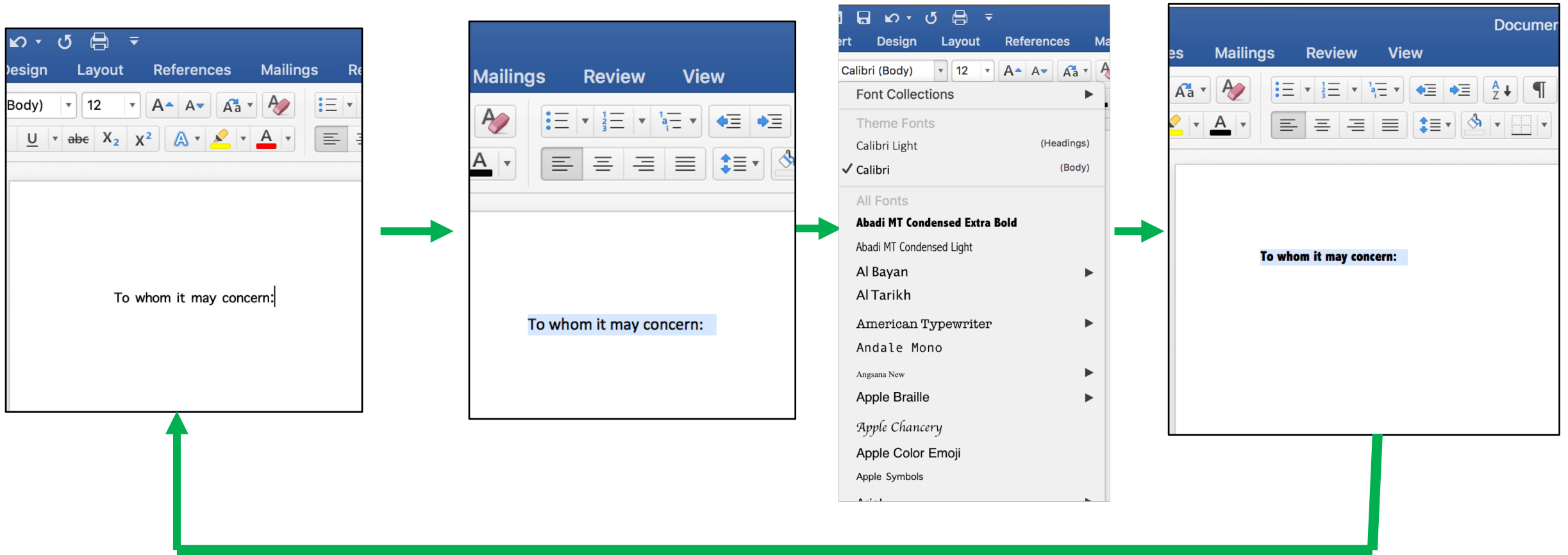
How do I **transition**?

Select a new menu option OR

Click outside the selection



For complex goals, break the task into states, options, and transitions to new states.

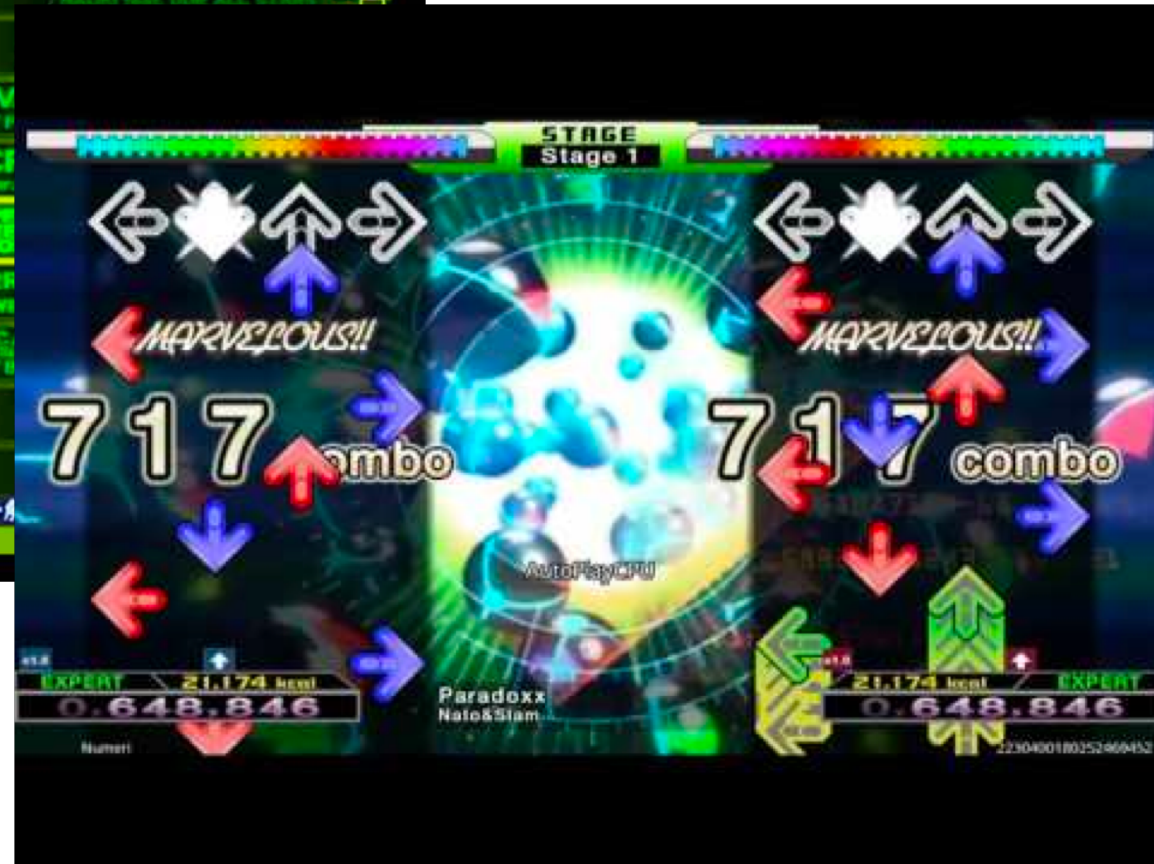


DDR: What state are we in?

What are the options in this state?



DDR: What state are we in?



DDR: What state are we in?

What state will we transition to?

The image displays three overlapping screenshots from the DDR game interface:

- Top Left:** "Select Music" screen showing "SPEED OVER BEETHOVEN" by FROSE at 169bpm. It includes various settings like "全体密度" (Overall Density) and "適用度" (Applicability).
- Middle Left:** "Play" screen showing a "MARVELOUS!!" hit, a "717" combo, and a score of "0.648.846".
- Right:** "RESULTS EXTRA STAGE" screen for "New Century" by Sota F. It shows two players achieving "AAA" grades with scores of 991,650 and 995,420. It includes detailed performance statistics for each player.

Category	Count
MAX COMBO	639
MARVELOUS	554
PERFECT	103
GREAT	11
GOOD	0
O.K.	80
Miss	1

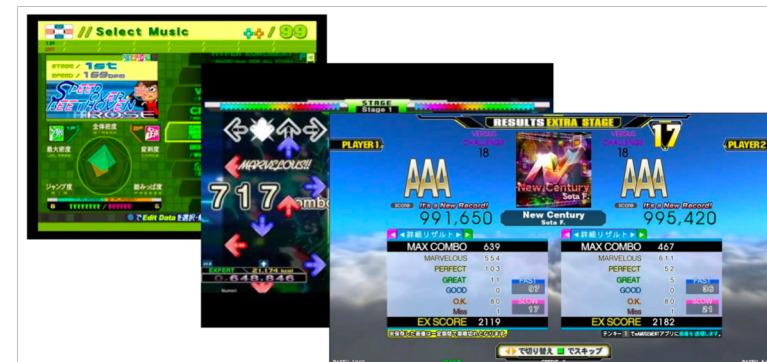
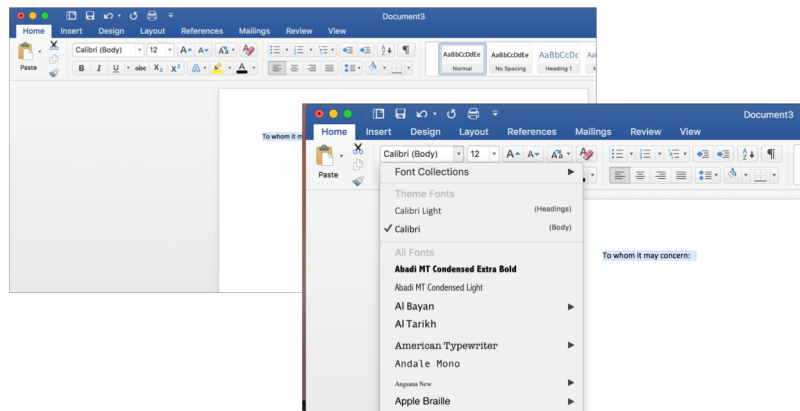
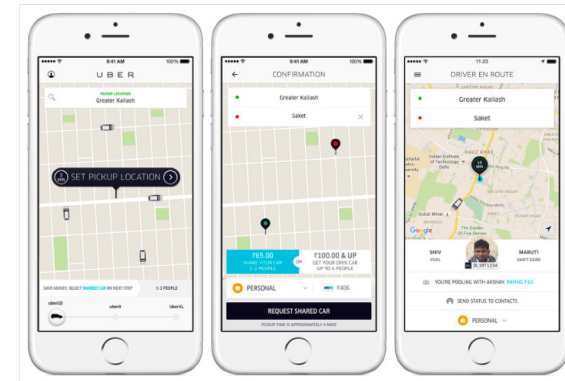
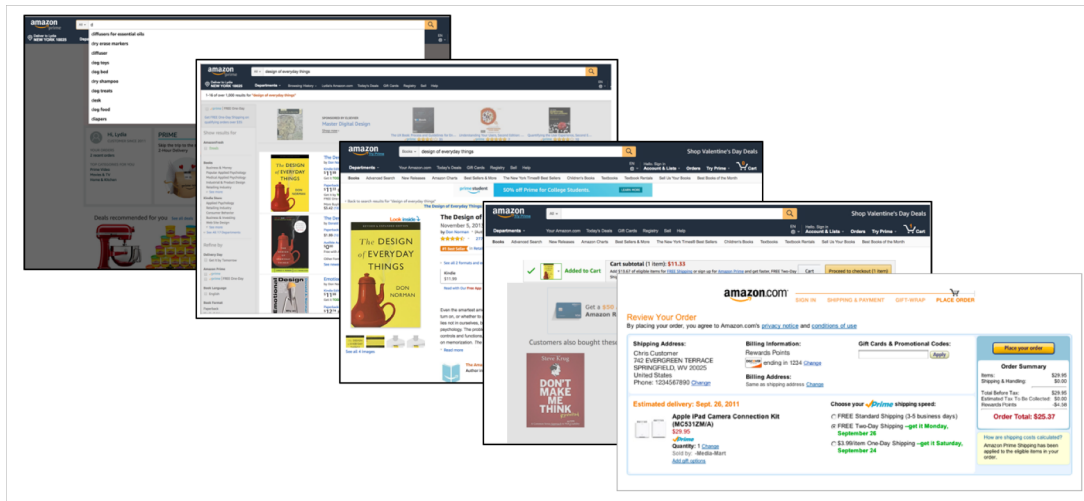
Category	Count
MAX COMBO	467
MARVELOUS	611
PERFECT	52
GREAT	5
GOOD	0
O.K.	80
Miss	1

Additional UI elements include "PASEL: 1060", "ONLINE", "CREDIT: 0", and "PASEL: 5469".

DDR: Returns users to the song selection state.

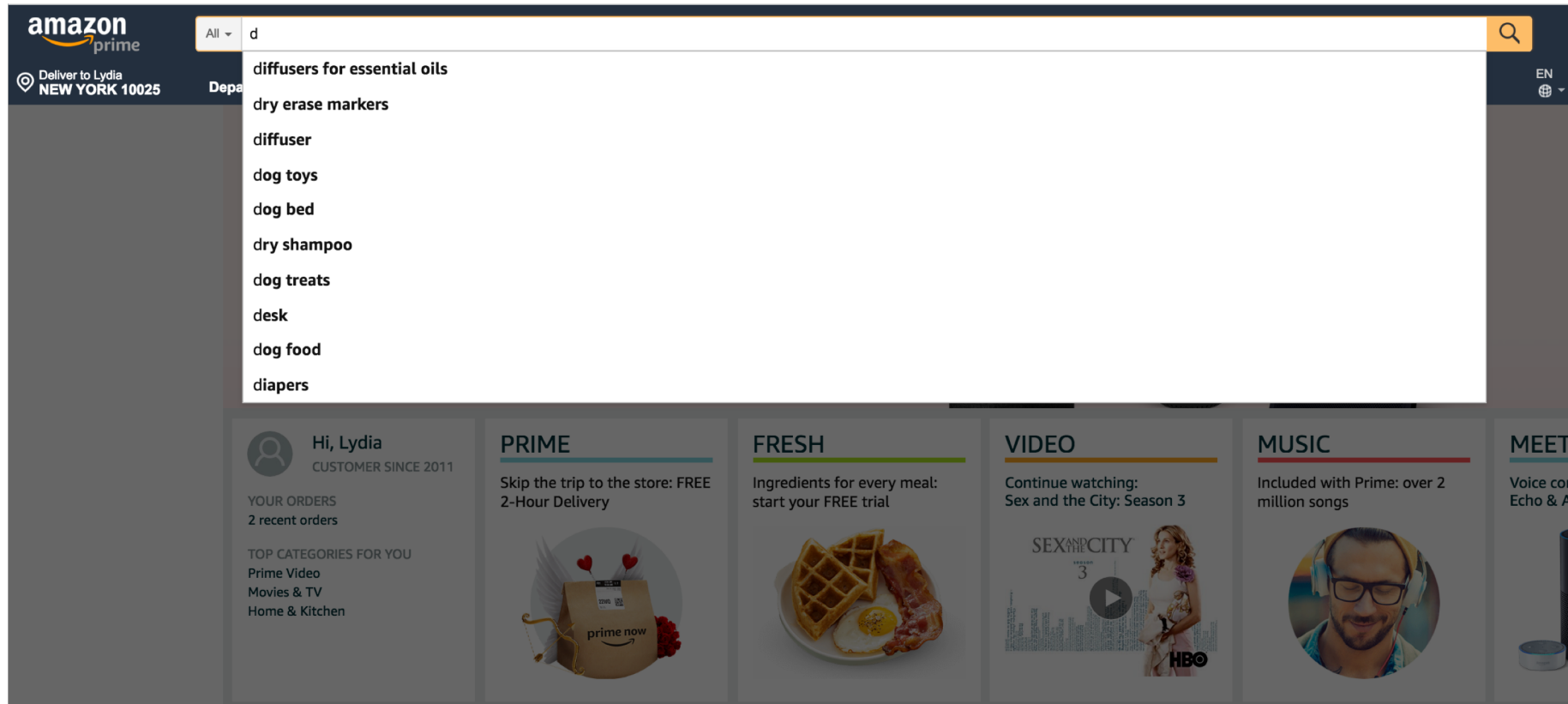


When you have too much information for one screen, design states, options and transitions for the user to navigate through to complete their goal.



Presenting users with options

Product search: How many options are there?



Billions

Search Results: How many (relevant) options are there?

amazon prime

Deliver to Lydia NEW YORK 10025

Departments Browsing History Lydia's Amazon.com Today's Deals Gift Cards Registry Sell Help

1-16 of over 1,000 results for "design of everyday things"

The Design of Everyday Things: Revised and Expanded Edition Nov 5, 2013
by Don Norman
Kindle Edition **\$11.99** ★★★★★ * 280
Get it TODAY, Feb 12
Paperback **\$11.99** ~~\$18.00~~ -prime | FREE One-Day
Get it by Tomorrow, Feb 13
FREE One-Day Shipping on qualifying orders over \$35
More Buying Choices **\$3.42** (134 used & new offers)

The Design of Everyday Things Sep 19, 2002
by Donald A. Norman
Paperback **\$1.99** (151 used & new offers) ★★★★★ * 301
Audible Audio Edition **\$0.00**
Free with Audible trial
Other Formats: MP3 CD
See newer edition of this book *

Emotional Design: Why We Love (or Hate) Everyday Things Mar 20, 2007
by Don Norman
Kindle Edition **\$11.99** ★★★★★ * 61
Get it TODAY, Feb 12
Paperback **\$12.74** ~~\$12.99~~ -prime | FREE One-Day
Get it by Tomorrow, Feb 13
FREE One-Day Shipping on qualifying orders over \$35
More Buying Choices **\$4.01** (130 used & new offers)
Other Formats: Hardcover

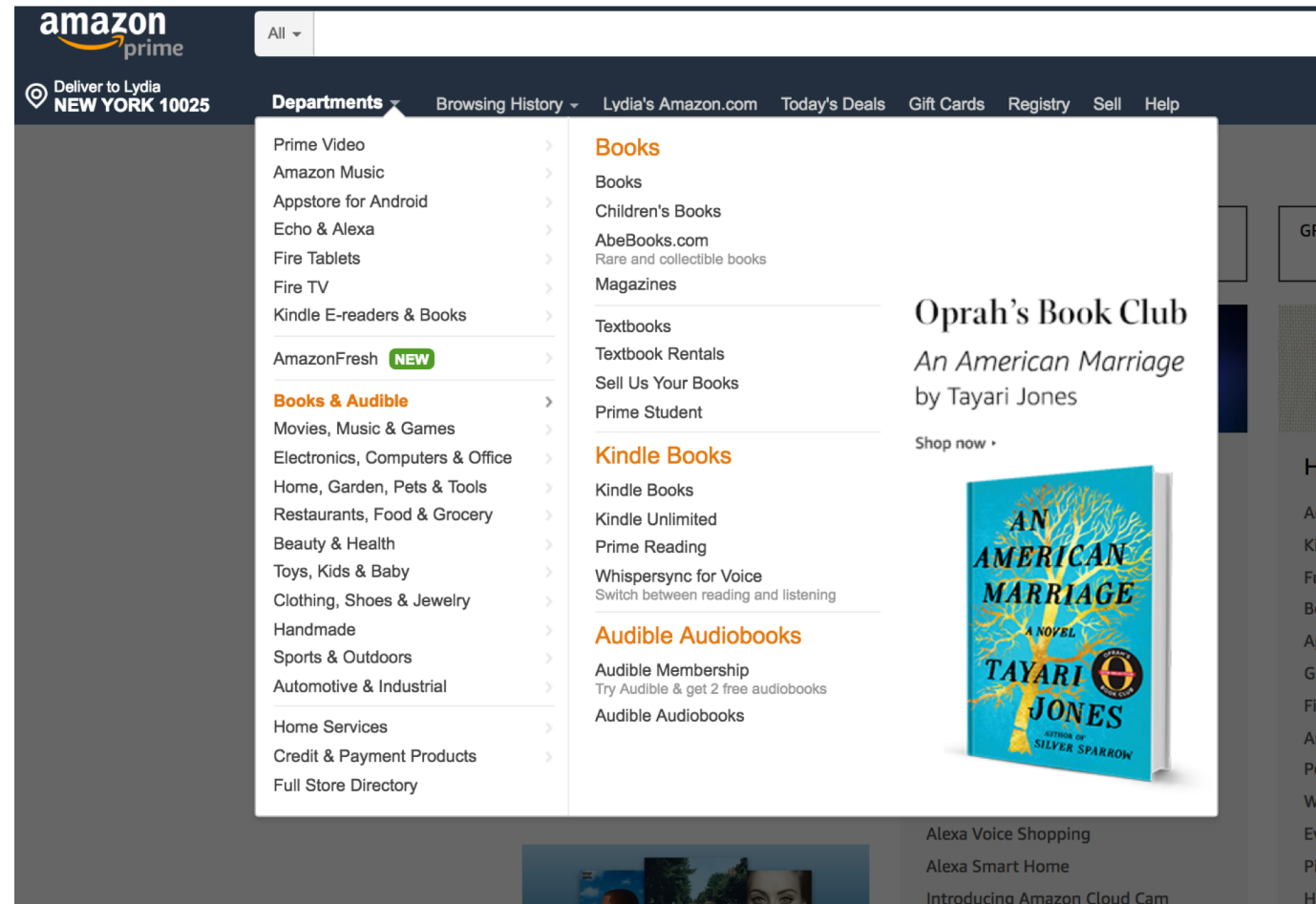
100 Things Every Designer Needs to Know About People (Voices That Matter) Apr 14, 2011
by Susan Weinschenk
Kindle Edition **\$9.60** ★★★★★ * 168
Get it TODAY, Feb 12
Paperback **\$25.24** ~~\$24.99~~ -prime
More Buying Choices **\$15.90** (98 used & new offers)

The Psychology Of Everyday Things Jun 15, 1988
by Don Norman
Hardcover **\$30.00** -prime | FREE One-Day
FREE One-Day Shipping on qualifying orders over \$35
Only 20 left in stock - order soon.
More Buying Choices **\$2.49** (98 used & new offers)

Hooked: How to Build Habit-Forming Products Nov 4, 2014
by Nir Eyal and Ryan Hoover
Kindle Edition **\$11.99** ★★★★★ * 10
Get it TODAY, Feb 12
Hardcover **\$17.12** ~~\$25.95~~ -prime
Get it by Tomorrow, Feb 13
More Buying Choices **\$10.23** (118 used & new offers)
Audible Audio Edition **\$0.00**
Free with Audible trial
Other Formats: Paperback, Audio CD

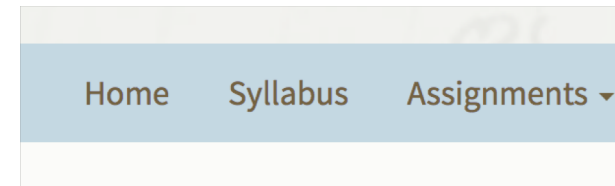
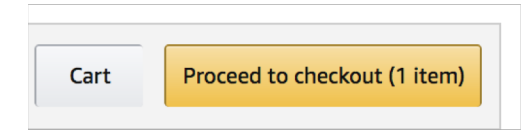
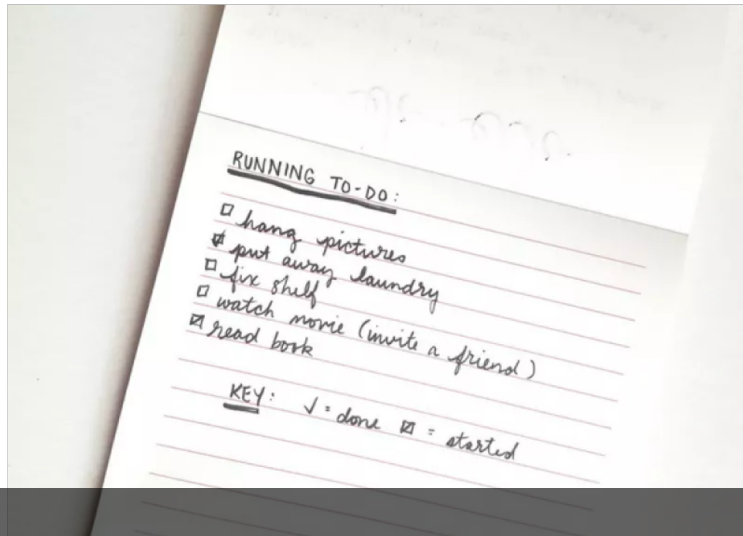
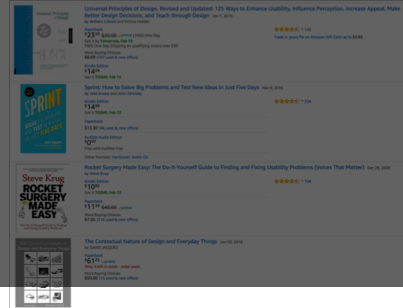
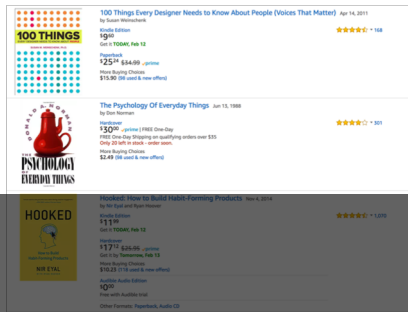
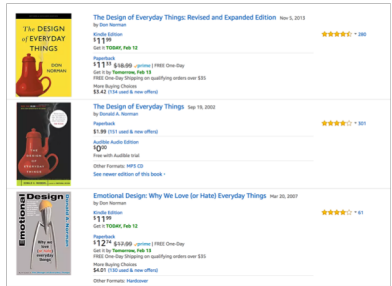
About 10

Amazon Departments: How many options are there?



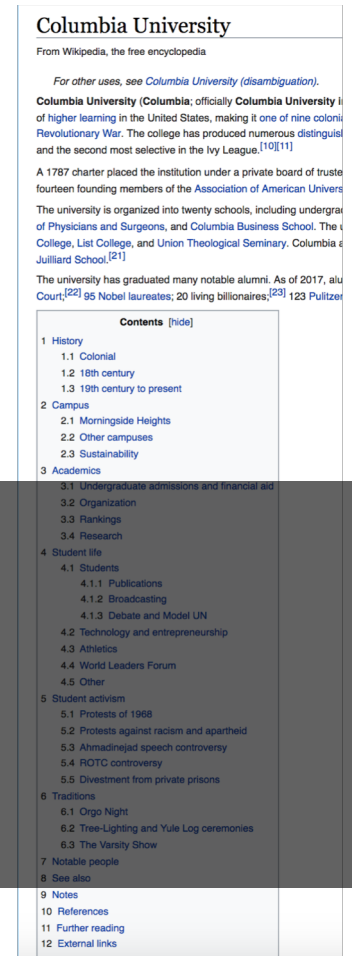
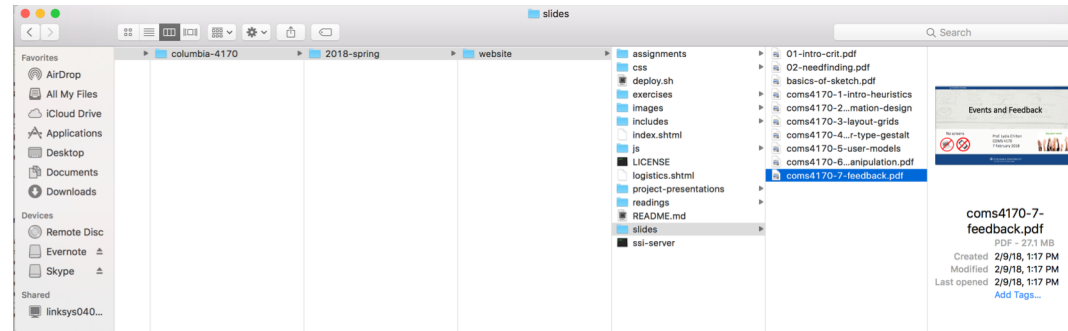
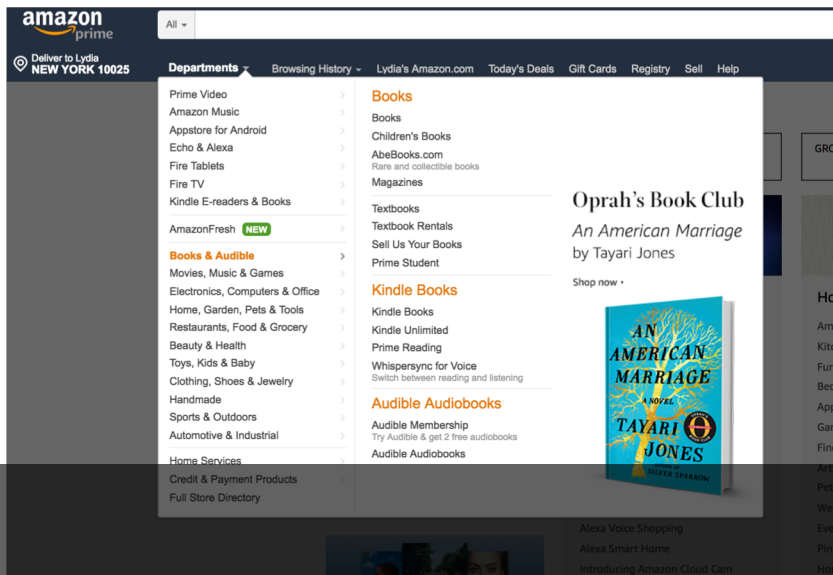
About 100

When displaying ~10 options, how do you display them to suit the needs and abilities of people?



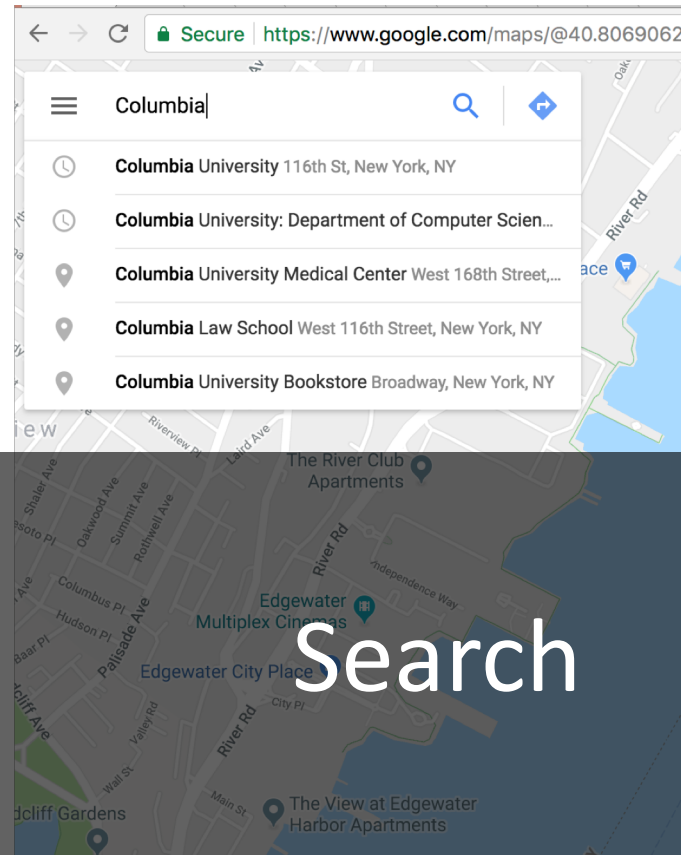
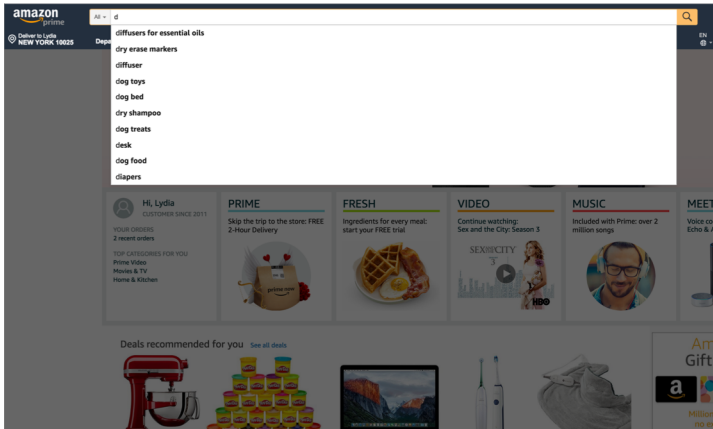
List

When displaying ~100 options, how do you display them to suit the needs and abilities of people?



A tree

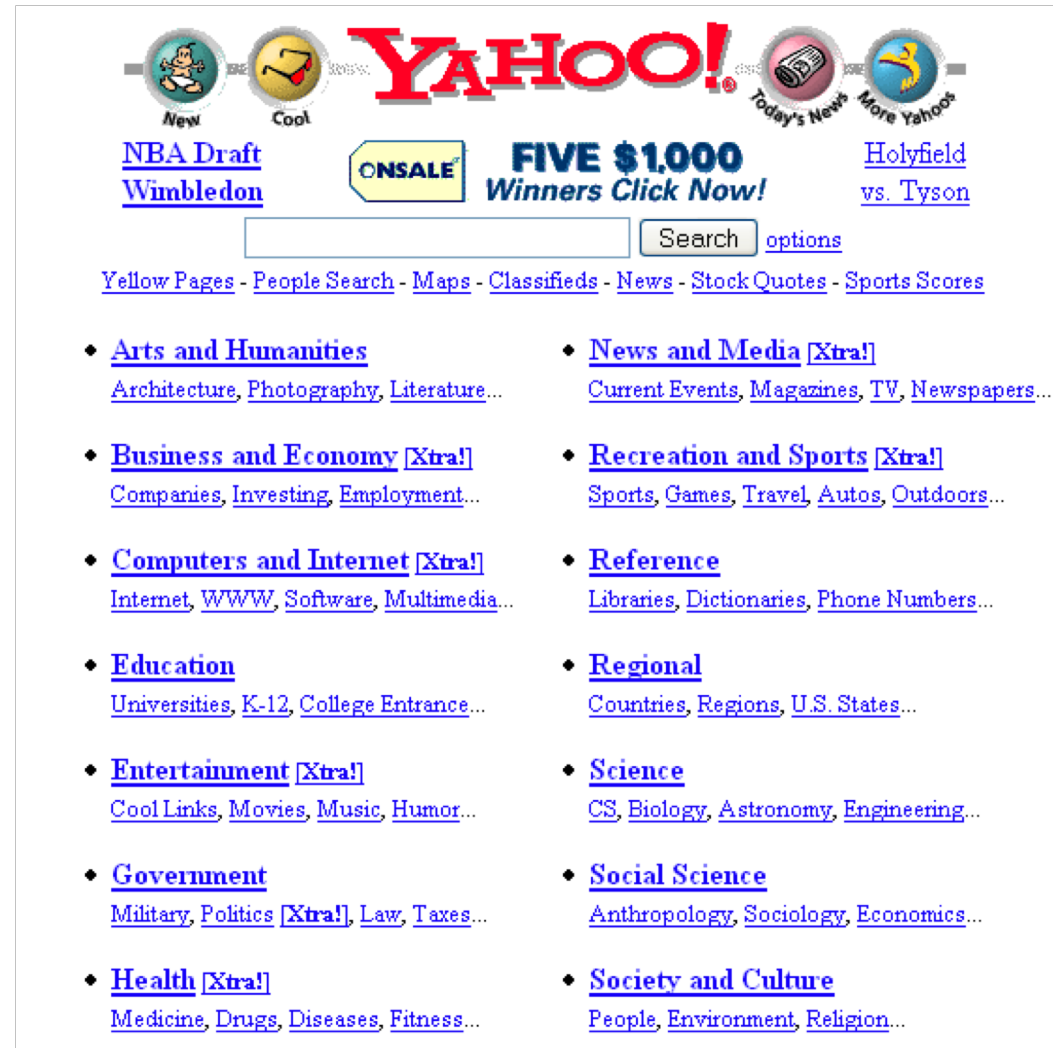
When displaying ~1000 options, how do you display them to suit the needs and abilities of people?



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137   $(document).ready(function(){
138     window.website = new Website();
139     window.website.loadCodeEditor();
140     website.setCurrentPageElement($("#home"));
141     add
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```

Search

Yahoo 1995: What interaction style is this?



The image shows a screenshot of the 1995 Yahoo! homepage. At the top, the word "YAHOO!" is written in large, red, stylized letters. To the left of the logo are two circular icons: one with a baby and the word "New" below it, and another with a red ribbon and the word "Cool" below it. To the right of the logo are two more circular icons: one with a newspaper and the words "Today's News" below it, and another with a blue figure and the words "More Yahoos" below it. Below the logo, there are several links: "NBA Draft", "Wimbledon", "ONSALE" (in a yellow box), "FIVE \$1,000 Winners Click Now!", "Holyfield vs. Tyson", and a search bar with a "Search" button and a link to "options". Below the search bar, there is a horizontal line of links: "Yellow Pages", "People Search", "Maps", "Classifieds", "News", "Stock Quotes", and "Sports Scores". The main content area is a grid of category links, each starting with a diamond symbol and followed by a category name and a list of sub-links.

[NBA Draft](#)
[Wimbledon](#)

ONSALE **FIVE \$1,000**
Winners Click Now!

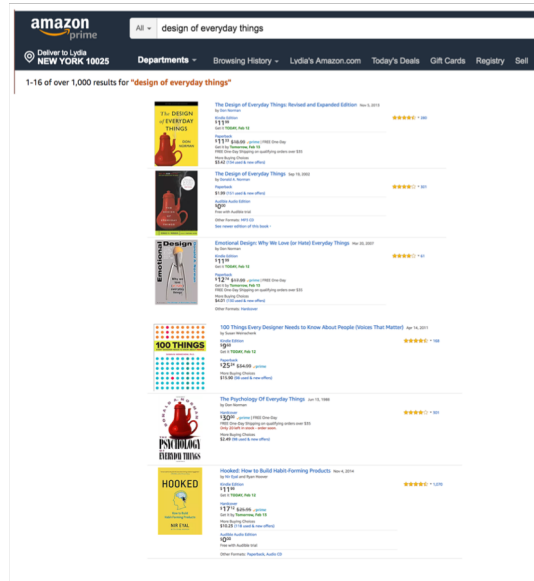
[Holyfield vs. Tyson](#)

[options](#)

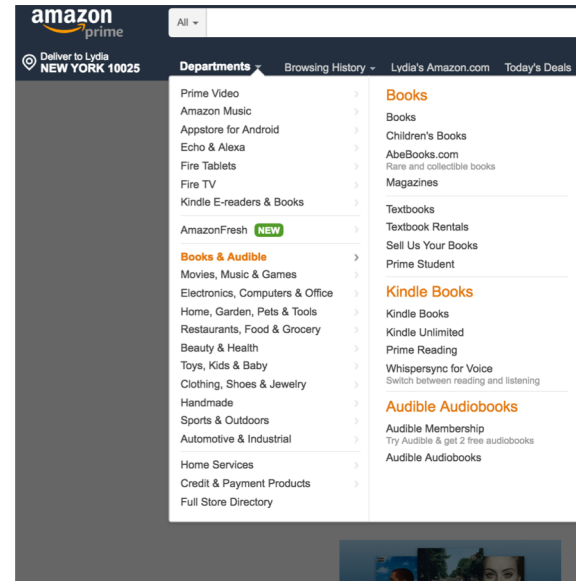
[Yellow Pages](#) - [People Search](#) - [Maps](#) - [Classifieds](#) - [News](#) - [Stock Quotes](#) - [Sports Scores](#)

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[Architecture](#), [Photography](#), [Literature](#)...
- ◆ [Business and Economy \[Xtra!\]](#)
[Companies](#), [Investing](#), [Employment](#)...
- ◆ [Computers and Internet \[Xtra!\]](#)
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[Universities](#), [K-12](#), [College Entrance](#)...
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- ◆ [Recreation and Sports \[Xtra!\]](#)
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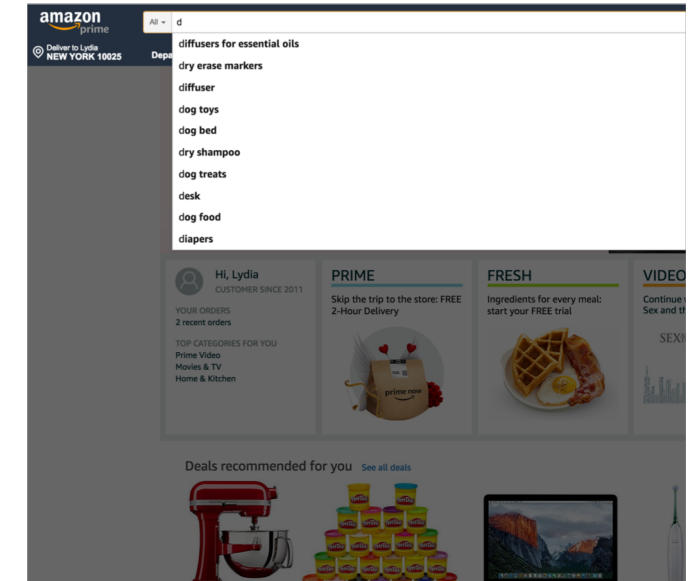
When displaying options, the number of options determines the interaction style.



~10 items = list



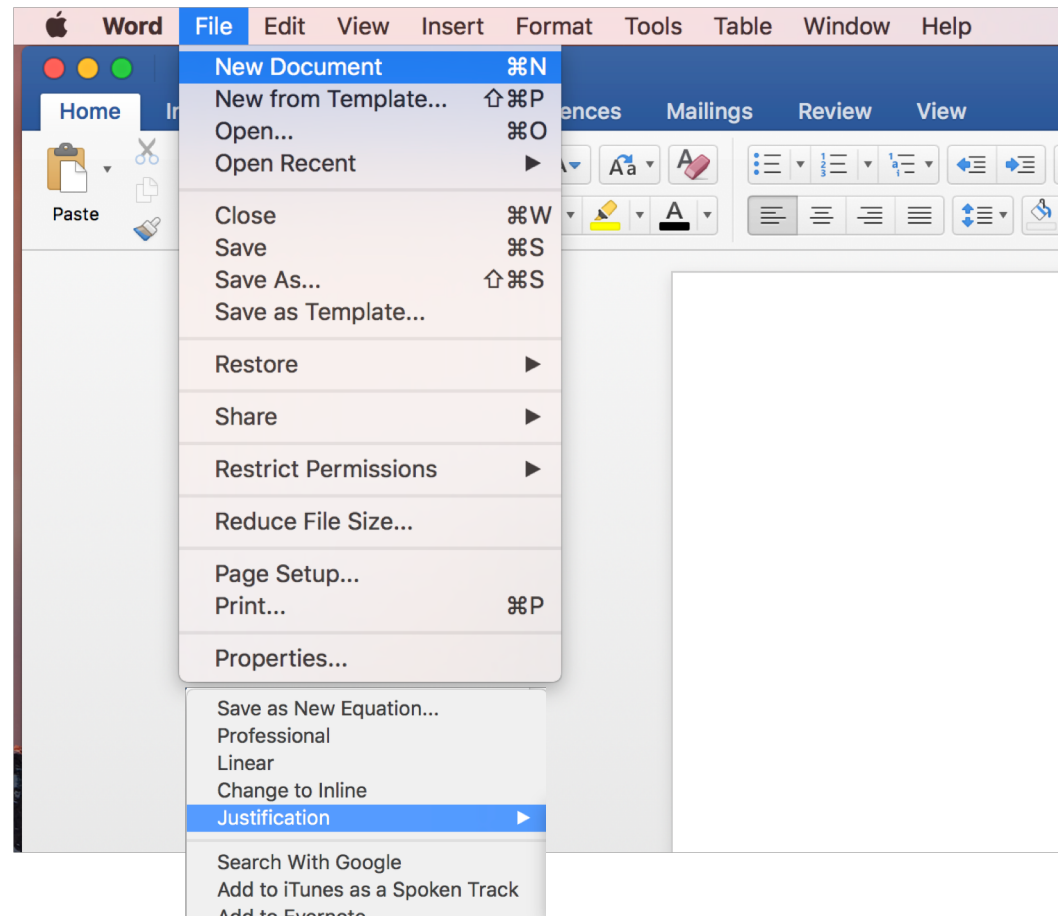
~100 items = tree



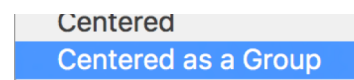
~1000 items = search

Designing Menu Options

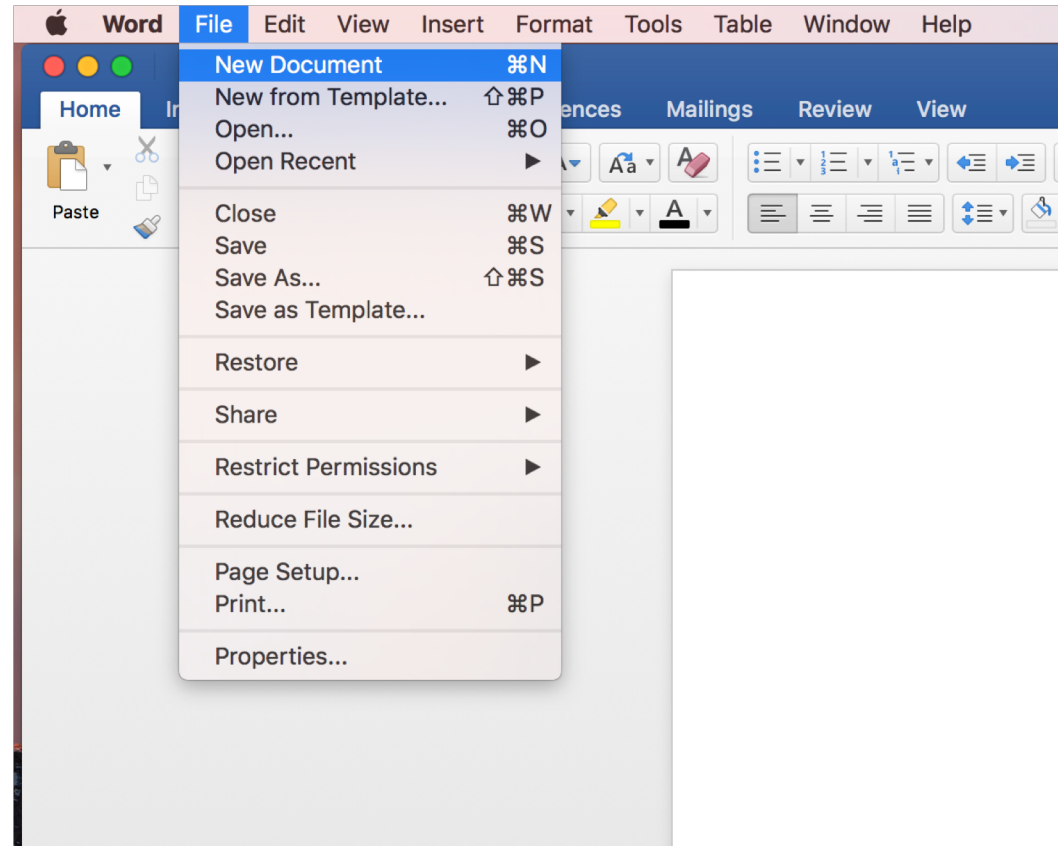
What would happen if one menu listed all the commands?



Items that are **infrequently** used can be more **difficult** to access

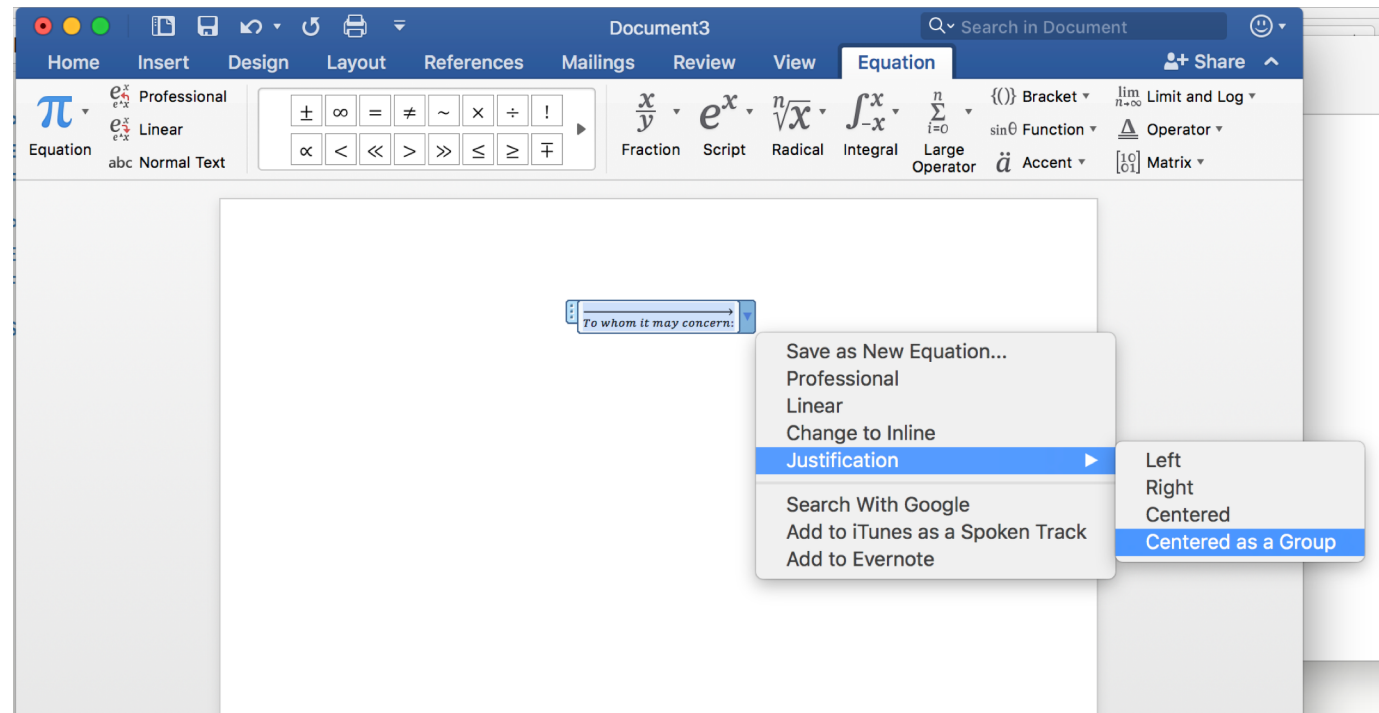


Why is “New Document” the first menu item?



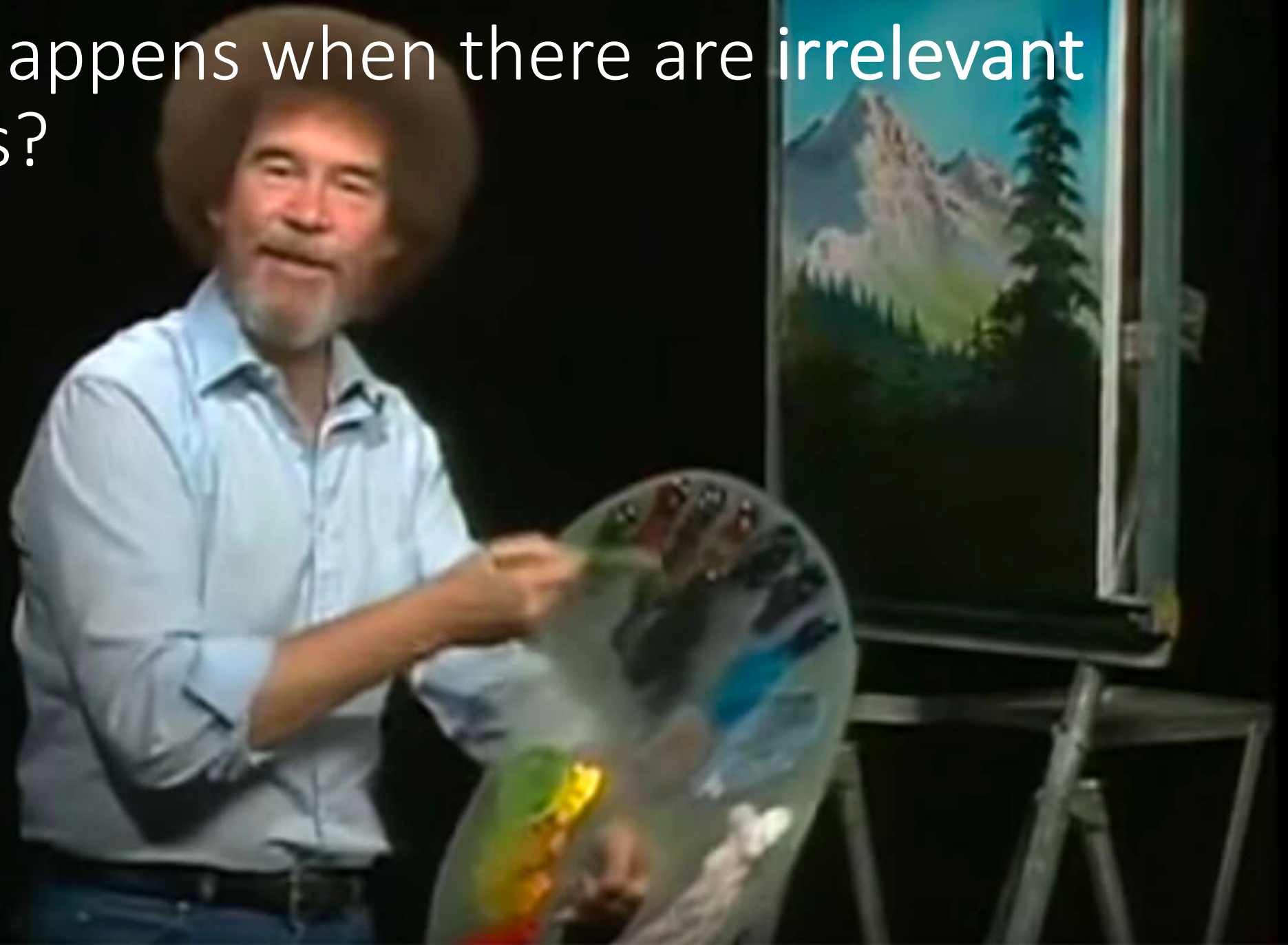
Items that are **frequently** used should be **easy** to access

Why is the function “*Word Equation -> Fraction -> Denominator -> Justification -> Centered as a Group*” buried 4 levels deep in the menu?



Items that are **infrequently** used can be more **difficult** to access

What happens when there are irrelevant options?

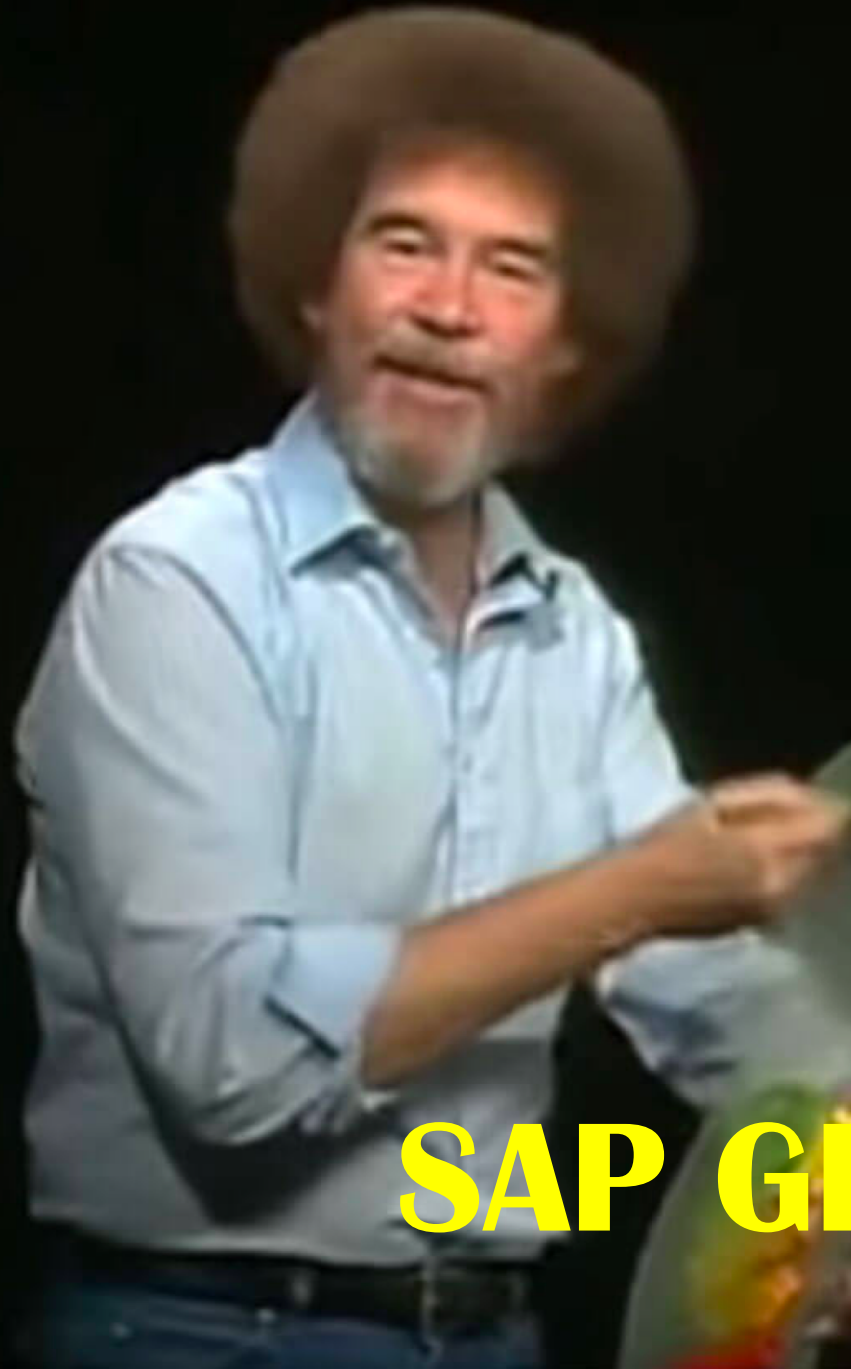


A man with a large afro hairstyle, wearing a light blue button-down shirt and jeans, is painting a landscape on a canvas. He is holding a palette with various colors of paint. The painting on the canvas depicts a mountain range with a large evergreen tree in the foreground. The text "TITANIUM WHITE" is overlaid in yellow at the bottom of the image.

TITANIUM WHITE

A man with a large afro hairstyle, wearing a light blue button-down shirt and jeans, is painting a landscape on a canvas. He is holding a palette with various colors of paint. The painting on the canvas shows a mountain range with a large evergreen tree in the foreground. The text "CADMIUM YELLOW" is overlaid in large, bold, yellow letters at the bottom of the image.

CADMIUM YELLOW



SAP GREEN



PHTHALO BLUE

Why not do this?



4

ELECTRIC PINK

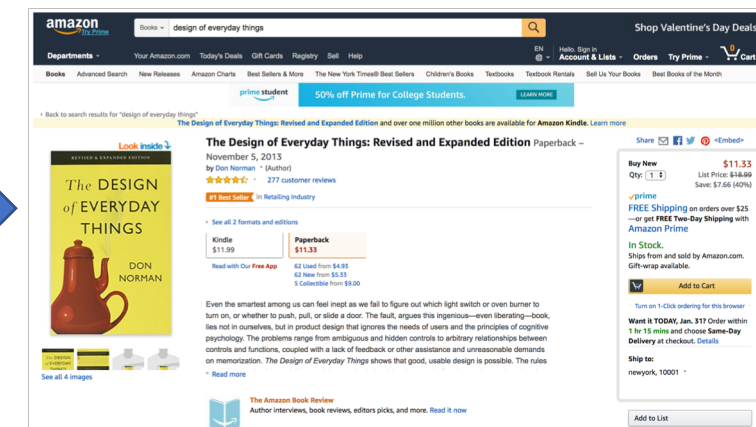
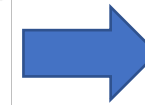
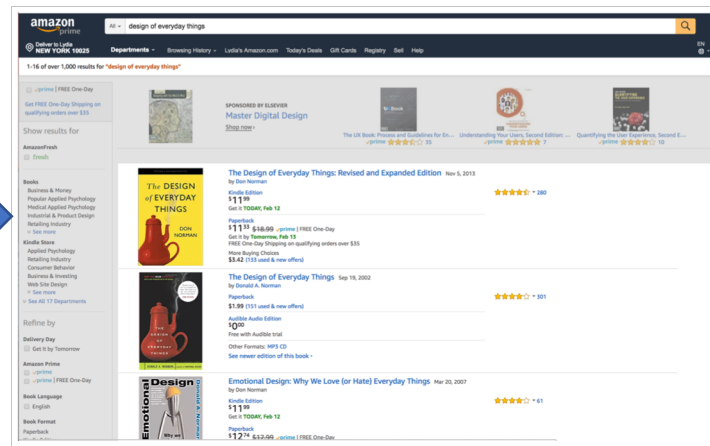
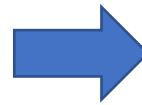
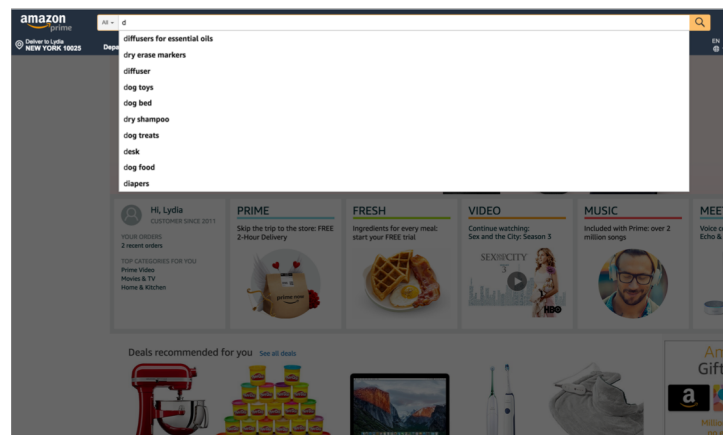
Irrelevant options create distractions



Users will expend energy to focus.
OR make mistakes

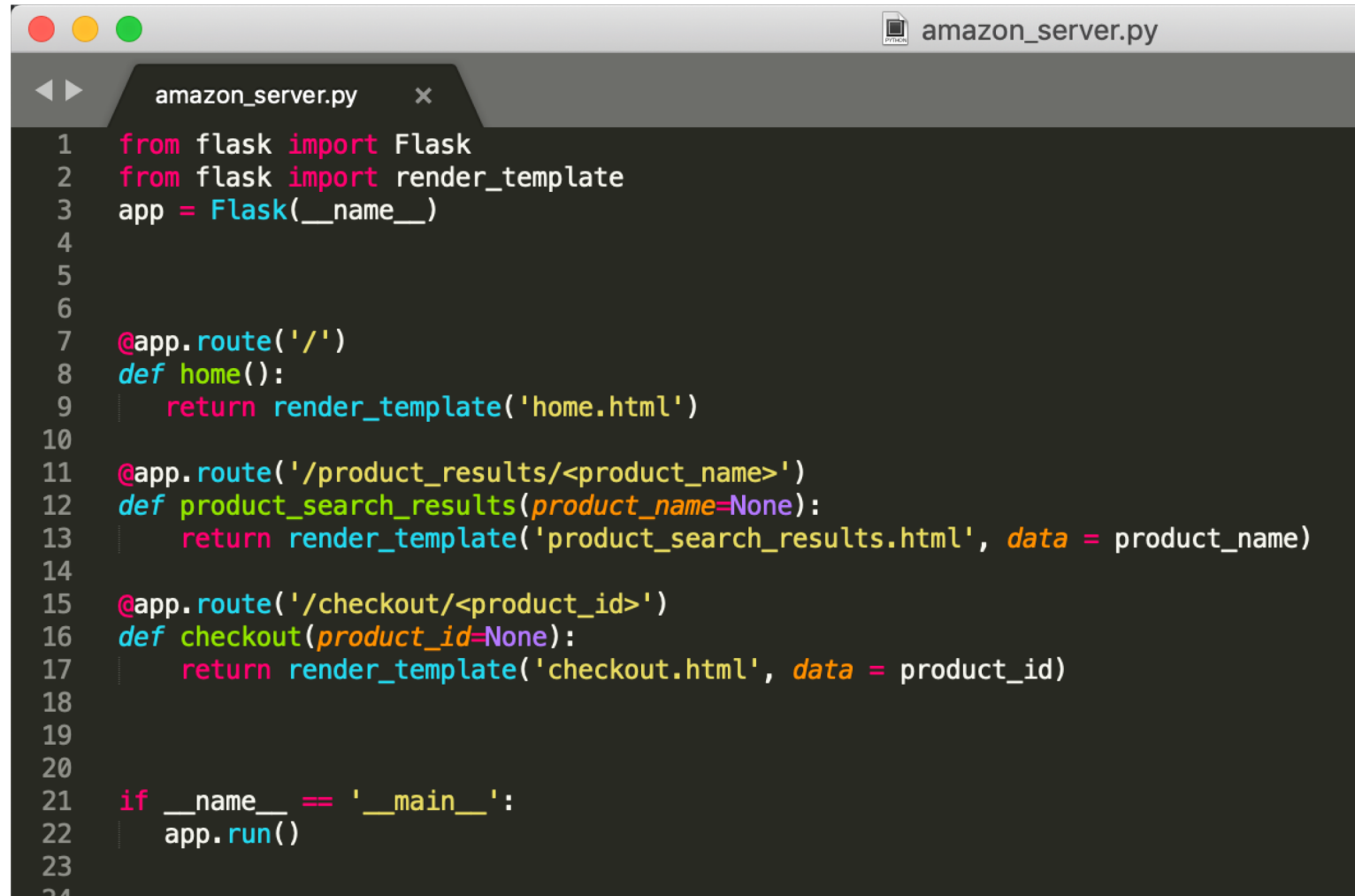
Implementing Navigation on the web

How is each state instantiated?



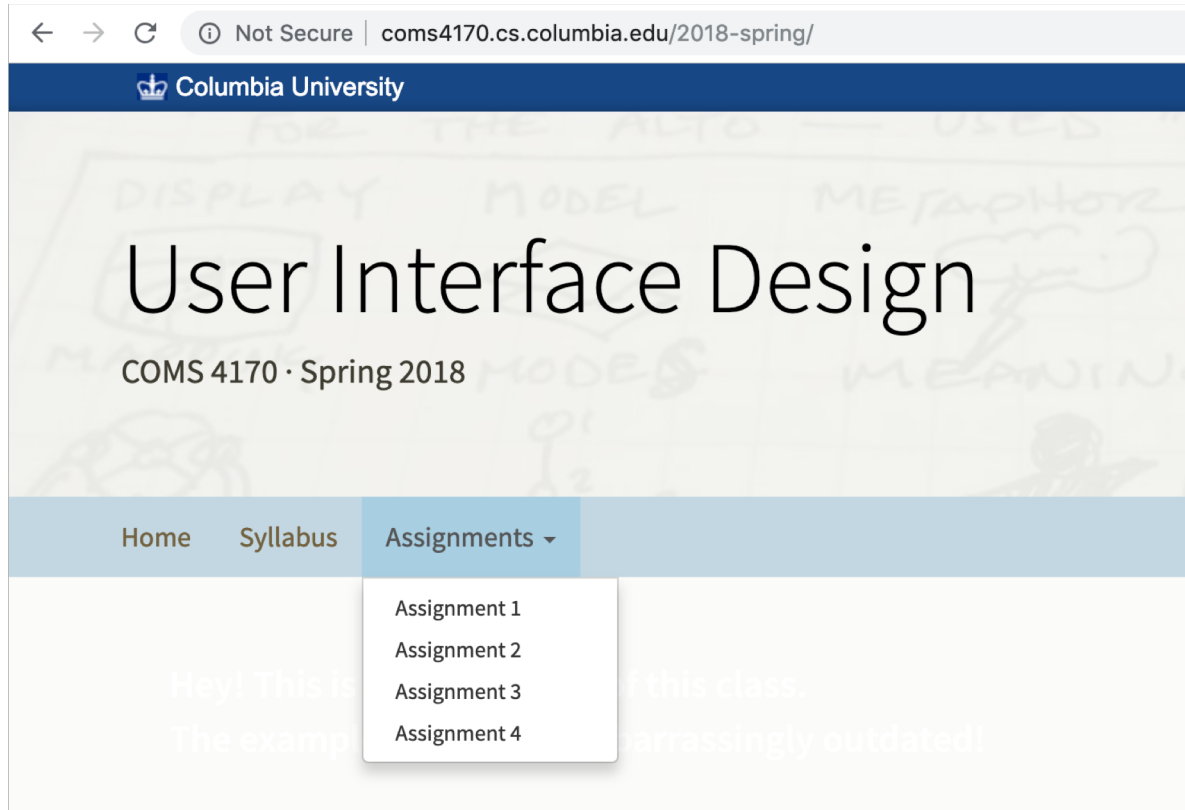
Typically, each page is a state

To create a website with multiple pages we need a **server** on the backend.



```
amazon_server.py
amazon_server.py x
1 from flask import Flask
2 from flask import render_template
3 app = Flask(__name__)
4
5
6
7 @app.route('/')
8 def home():
9     return render_template('home.html')
10
11 @app.route('/product_results/<product_name>')
12 def product_search_results(product_name=None):
13     return render_template('product_search_results.html', data = product_name)
14
15 @app.route('/checkout/<product_id>')
16 def checkout(product_id=None):
17     return render_template('checkout.html', data = product_id)
18
19
20
21 if __name__ == '__main__':
22     app.run()
23
24
```

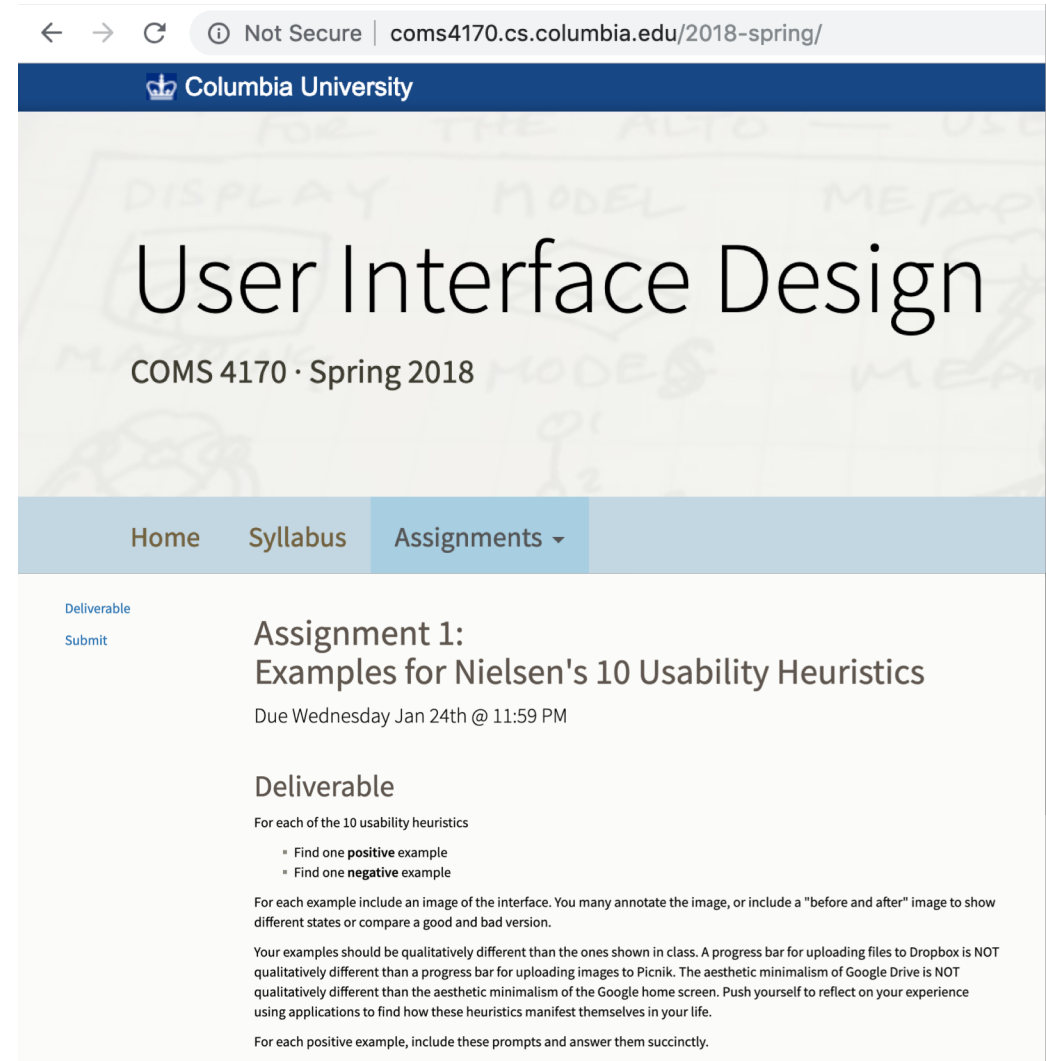
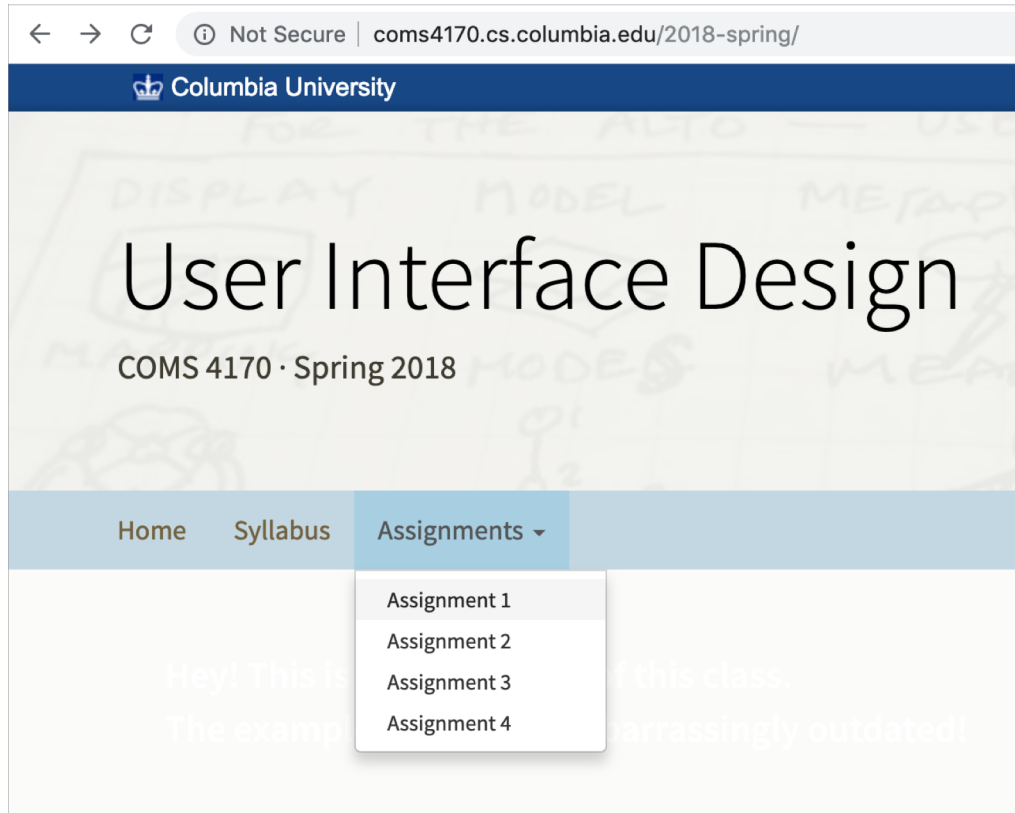
Menus are implemented as Bootstrap NavBars



```
<nav class="navbar navbar-default navbar-static-top" role="navigation">
  <div class="container">
    <div class="navbar-header">
      <button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse">
        <span class="sr-only">Toggle navigation</span>
        <span class="icon-bar"></span>
        <span class="icon-bar"></span>
        <span class="icon-bar"></span>
      </button>
      <a class="navbar-brand" href="/2018-spring/index.shtml">Home</a>
    </div>
    <div class="navbar-collapse collapse">
      <ul class="nav navbar-nav">
        <li><a href="/2018-spring/index.shtml#calendar">Syllabus</a></li>

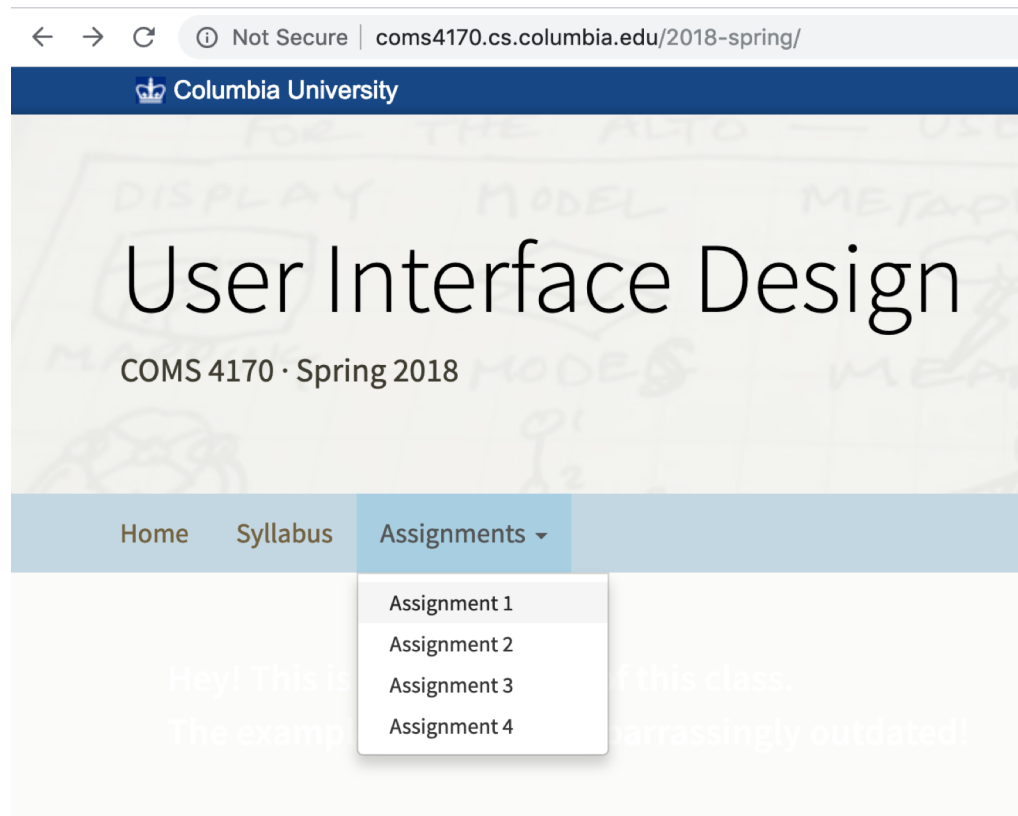
        <li class="dropdown">
          <a href="#" class="dropdown-toggle" data-toggle="dropdown" role="button" aria-haspopup="true"
            aria-expanded="false">Assignments <span class="caret"></span></a>
          <ul id="assignments" class="dropdown-menu">
            <!--<li class="disabled"><a href="">coming soon!</a></li-->
            <li><a href="/2018-spring/assignments/a1.shtml">Assignment 1</a></li>
            <li><a href="/2018-spring/assignments/a2.shtml">Assignment 2</a></li>
            <li><a href="/2018-spring/assignments/a3.shtml">Assignment 3</a></li>
            <li><a href="/2018-spring/assignments/a4.shtml">Assignment 4</a></li>
          </ul>
        </li>
        <!--
        <li><a href="/2018-spring/project-presentations/index.shtml">Project Presentations</a></li>
        -->
      </ul>
      <ul class="nav navbar-nav navbar-right">
        <a class="navbar-link" href="http://piazza.com/columbia/spring2018/comsw4170_001_2018_userinterfacedesign/home"><button type="button" class="btn btn-default btn-su navbar-btn">Piazza</button></a>
      </ul>
    </div>
  </div>
</nav>
```


NavBars are the same across all your pages.

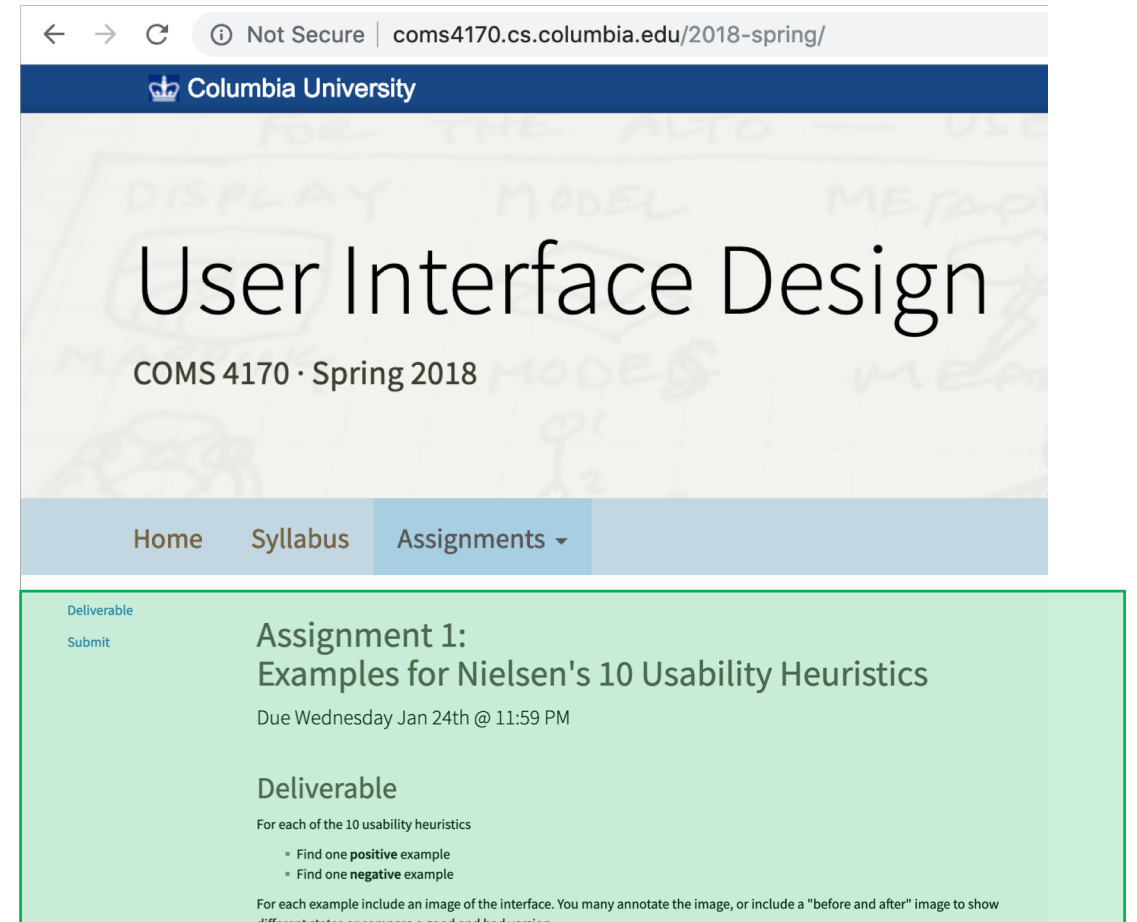


NavBars HTML is not copied across pages.
NavBars is part of the *layout*.

layout



Content block



“home.html” extends “layout.html”

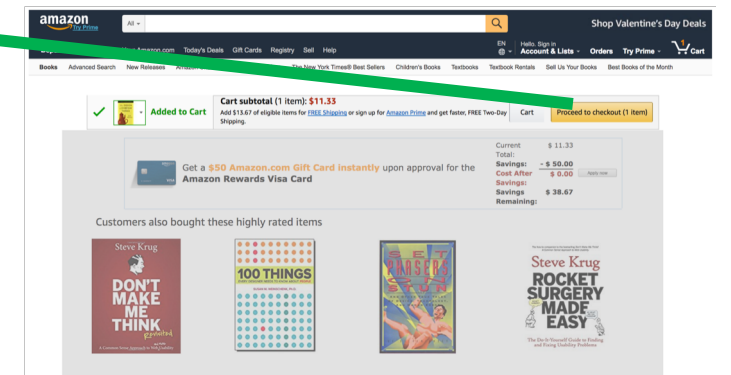
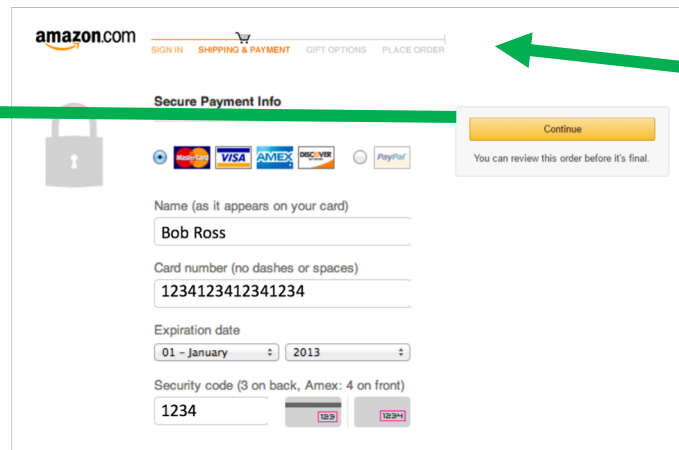
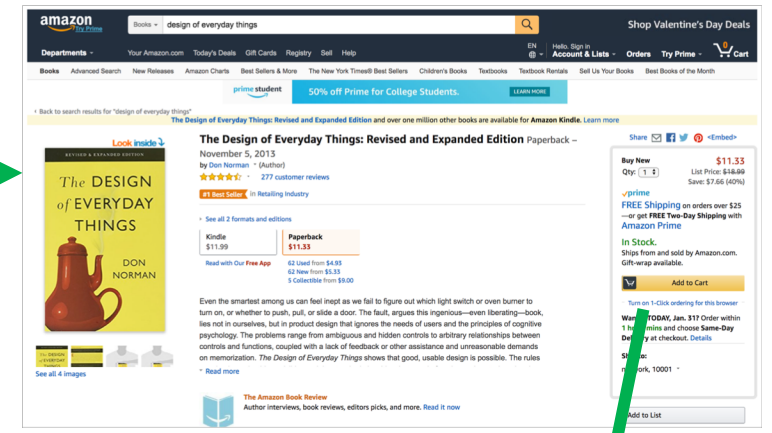
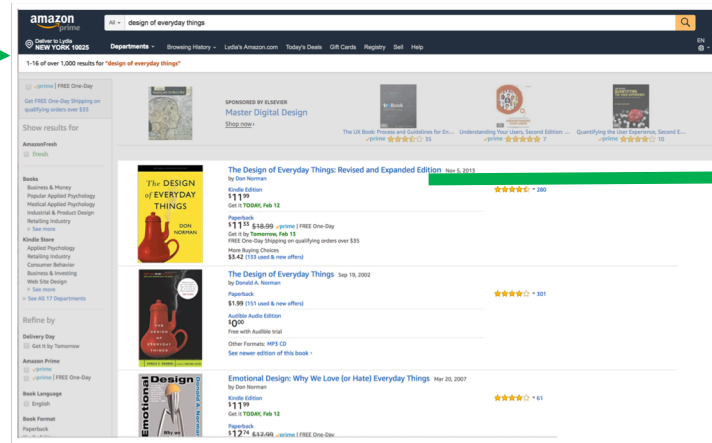
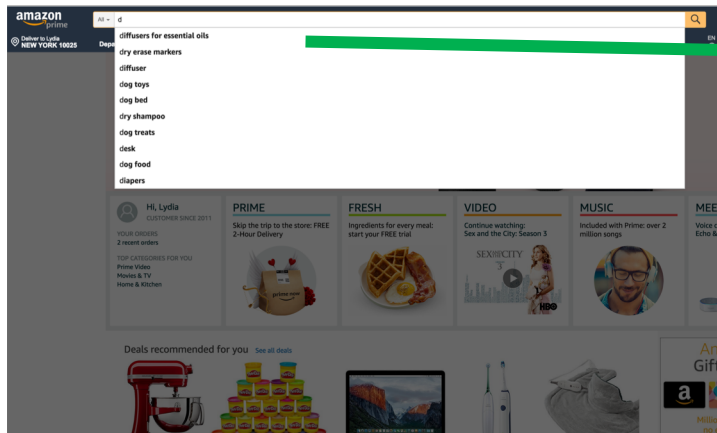
```
home-test.html layout-test.html x
1 {% extends "layout.html" %}
2
3
4 {% block content %}
5 <div>
6   <h1> Assignment 1</h1>
7
8   <p>
9     Your assignment for this week is to ...
10  </p>
11 </div>
12 {% endblock %}
13
14
15
16
```

“layout.html” specifies where to add the content block

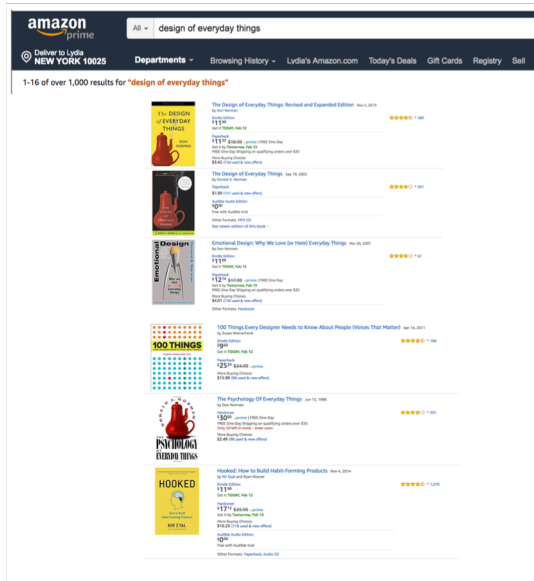
```
layout-test.html x home-test.html x
1
2 <html>
3 <head>
4 <link href="http://netdna.bootstrapcdn.com/bootstrap/3.0.0/css/bootstrap.min.css" >
5 </head>
6
7 <body>
8 <nav class="navbar navbar-inverse" role="navigation">
9 <div class="container-fluid">
10 <div class="navbar-header">
11 <button type="button" class="navbar-toggle" data-toggle="collapse" data-target="
12 #bs-example-navbar-collapse-1">
13 <span class="sr-only">Toggle navigation</span>
14 <span class="icon-bar"></span>
15 <span class="icon-bar"></span>
16 <span class="icon-bar"></span>
17 </button>
18 <a class="navbar-brand" href="/">Home</a>
19 </div>
20 <div class="collapse navbar-collapse" id="bs-example-navbar-collapse-1">
21 <ul class="nav navbar-nav navbar-right">
22 <li><a href="#">Link</a></li>
23 <li class="dropdown">
24 <a href="#" class="dropdown-toggle" data-toggle="dropdown">Dropdown <b class="caret"></b></a>
25 <ul class="dropdown-menu">
26 <li><a href="#">Action</a></li>
27 <li><a href="#">Another action</a></li>
28 <li><a href="#">Something else here</a></li>
29 <li class="divider"></li>
30 <li><a href="#">Separated link</a></li>
31 </ul>
32 </li>
33 </ul>
34 </div><!-- /.navbar-collapse -->
35 </div><!-- /.container-fluid -->
36 </nav>
37 <div class="container">
38   {% block content %}
39
40
41   {% endblock %}
42
43 </div>
44
45 </body>
46 </html>
47
```

Summary

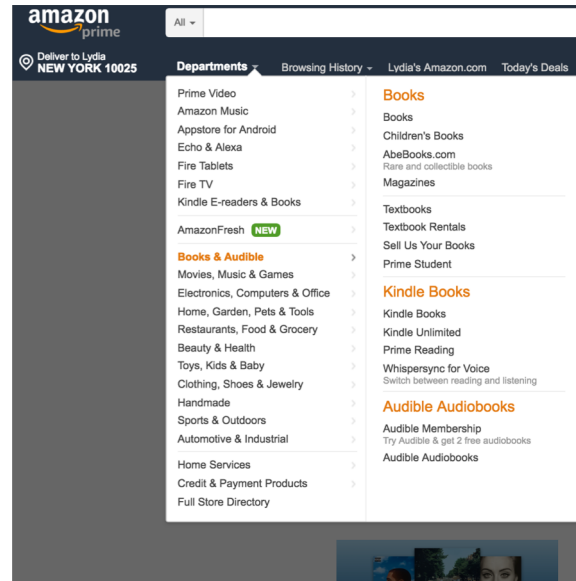
For complex tasks, guide users attention by breaking the task into: states, options, and transitions to new states.



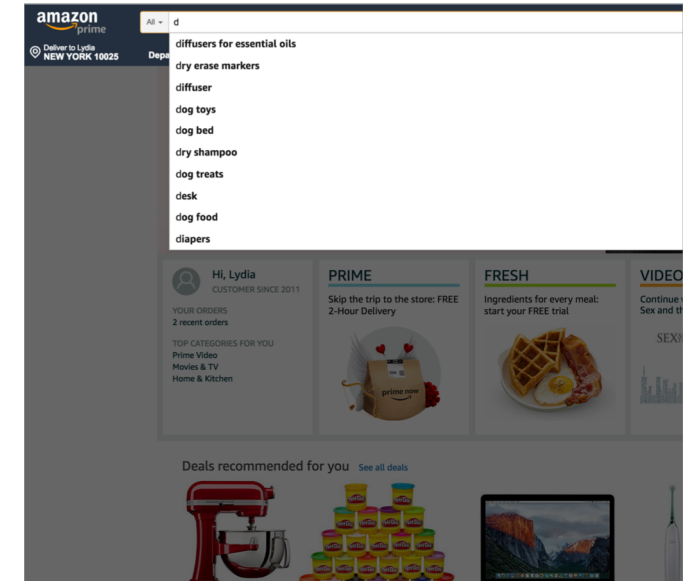
When displaying options, the number of options determines the interaction style.



~10 items = **list**



~100 items = **tree**

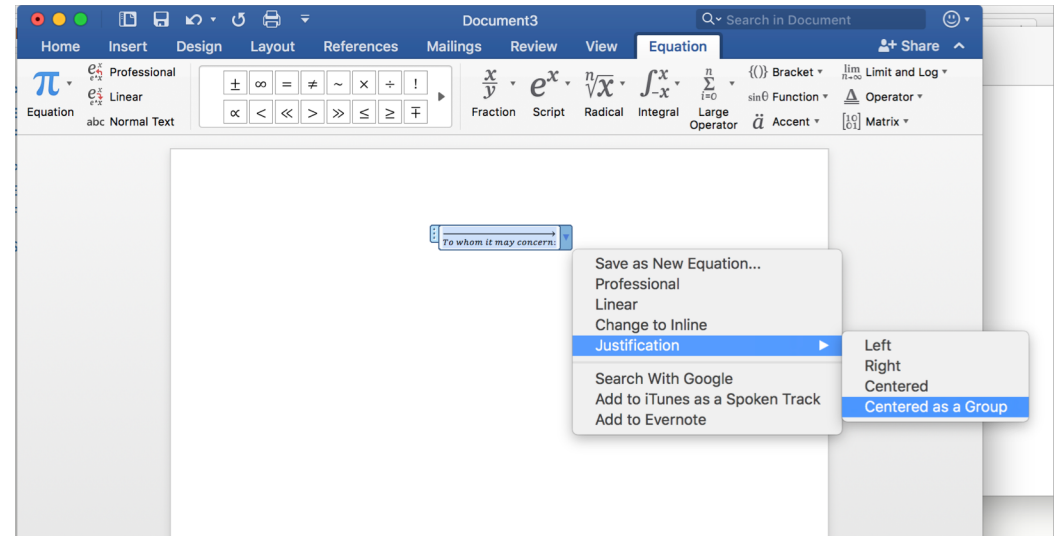
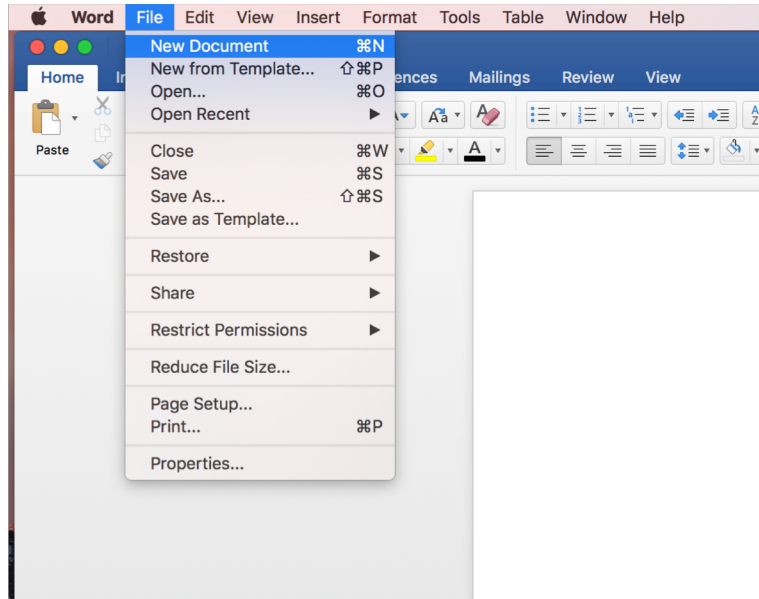


~1000 items = **search**

People have limited time.

Make frequently used options easier to access

Make rarely used options harder to access



People have limited focus.

Within a state, provide options that are relevant to the user completing their goal.

YES

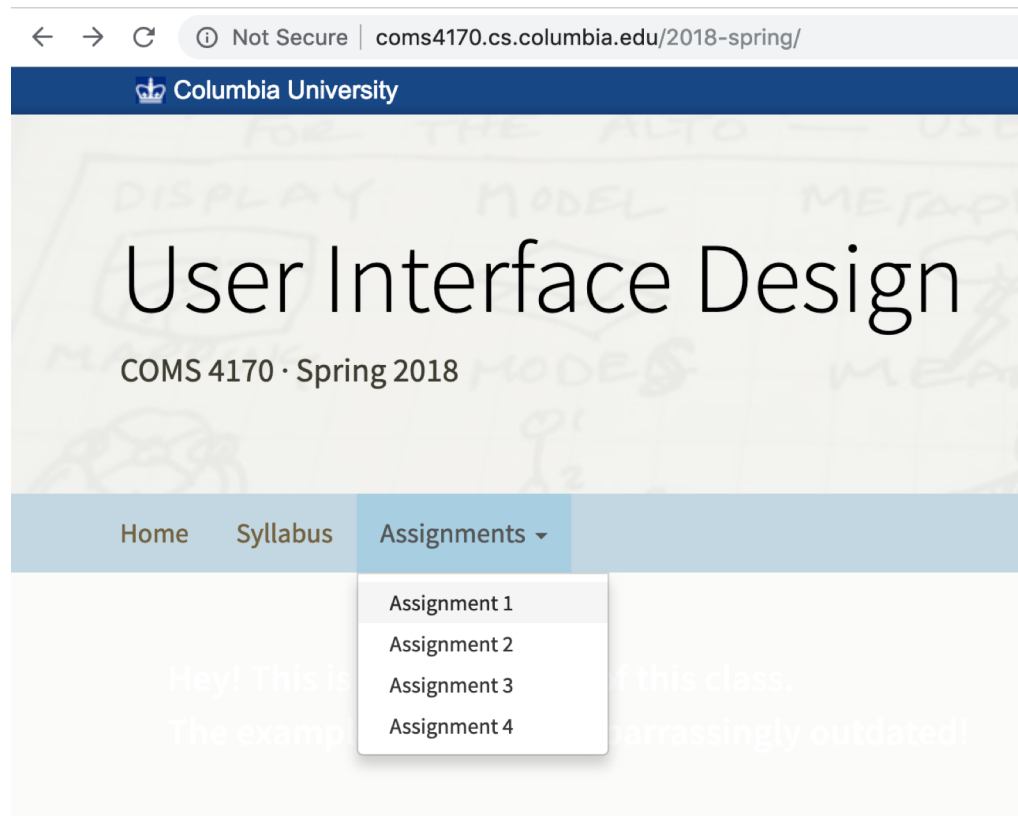


NO



Implement navigation as a shared layout page.
Insert a content block for unique content

layout



Content block

