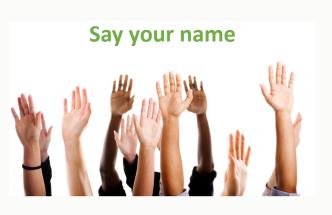
User Interaction Models

No screens





Prof. Lydia Chilton COMS 4170 3 February 2020

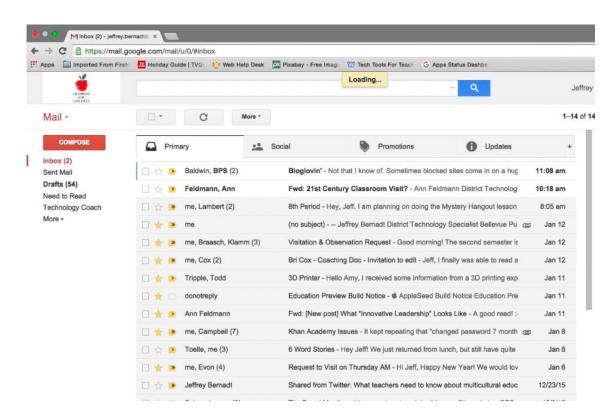




Interfaces display information in a way that helps users accomplish a goal.

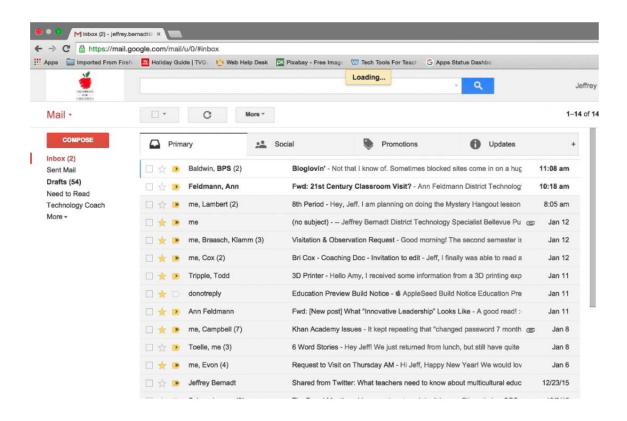
```
Aug 03 T Martinez
                             ( 37) Loans with tiny points are here now
625 0 Jul 01 R. Jackson
                          ( 123) Loans with tiny rates are here now
      Aug 05 Benjamin E. Mag ( 50) Long time no hear
       May 17 Krista Aaron ( 44) long time no see....
      Jun 03 Josiah House ( 35) Looking for a hot date tonight, tomorrow, or next week?
       Jul 03 Brigitte I. Hay ( 63) Looking for a N.ew H.Ome?
       May 17 Joe Burns
                             ( 58) Looking for you
       Jun 01 Save in a poor ( 145) Low Rate Consolidation Mortgage Loan
     + Jul 02 Igiel@virtualig ( 2) LowCost SoftWare OnCD
×-Mutt: Mail/junk/spam [Msgs:950 Old:142 10M]---(subject/date)-
ate: Mon, 17 May 2004 03:40:09 +0100
rom: Krista Aaron <Christinefeminine@highstream.com>
ubject: long time no see....
  Autoview using /usr/bin/elinks -force-html -dump ''/tmp/mutt.html'' --]
My name is Jen and I'm new to this dating thing. I've checked out your profile
you put up and it's interesting. =) I just want to get to know you a little
          better if you don't mind, come check my profile out at:
                         www.livejen.com/chat.html
also got a webcam so we can make it interesting, anyways hope you get back to
                                   bye :)
                         gxsnkxxgnduvyjwyceudcjobxs
                            zcozccrociesbehgbpow
                        rnxlfujnqpblipdkgwwygofracsz
                        xmqawbxsbjrppoibvlpfhqowldtp
                          bixhghvrxtqgfeoqcofzycb
                         hugzffaffulsklpzhrfxbtt
                          btpztlfotqmmoaiwlosqv
   - 627/950: Krista Aaron
                                    long time no see....
  is not bound. Press '?' for help.
```





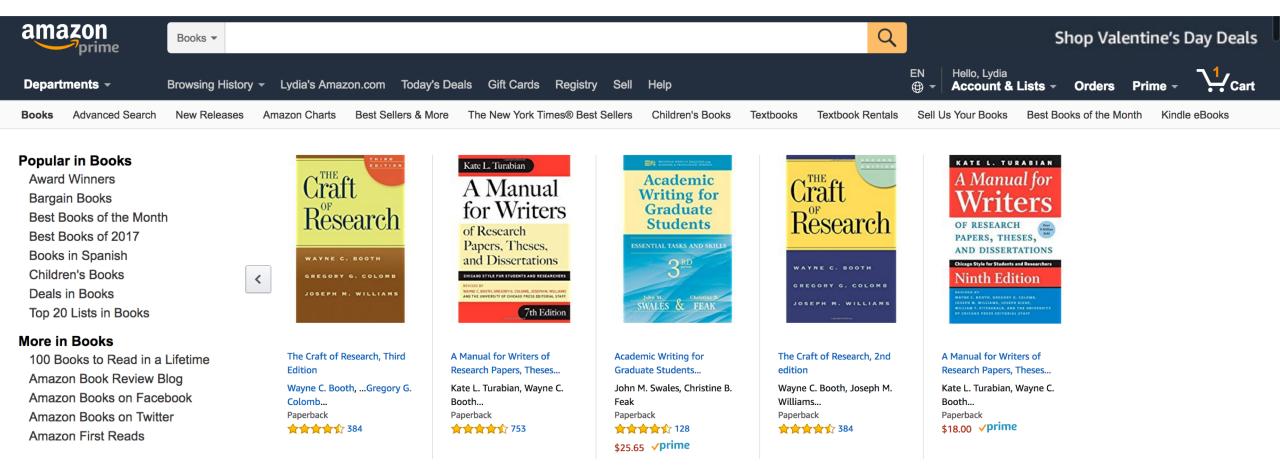
GMail

What is the primary goal of this interface?



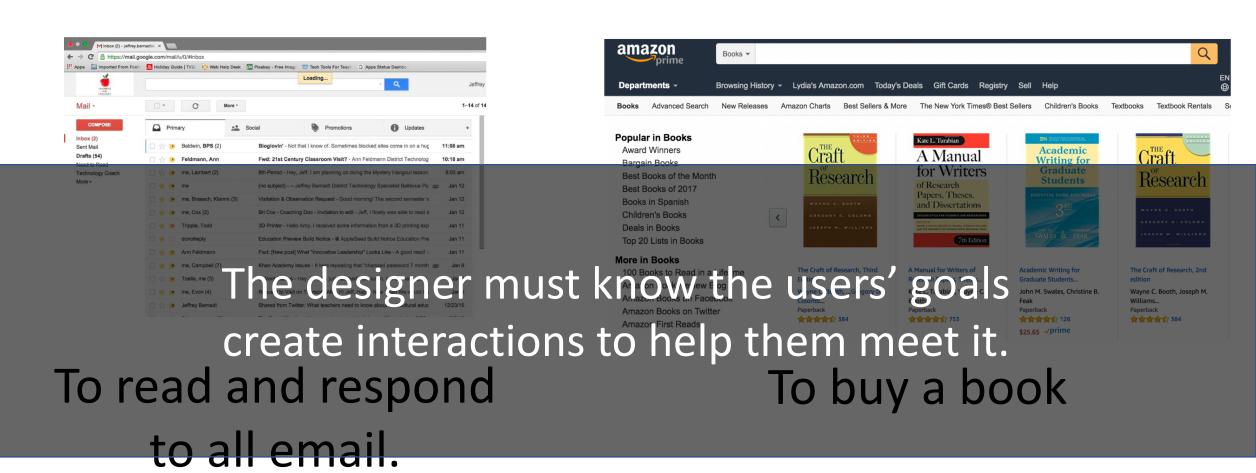
To read and respond to all email.

What is the primary goal of this interface?



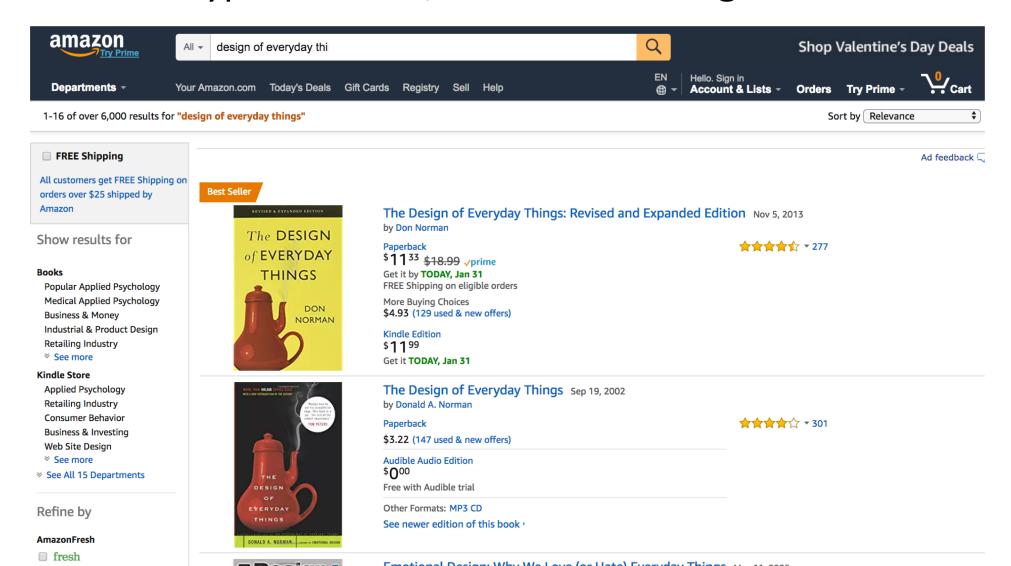
To buy a book.

Users interact with a system to accomplish a goal



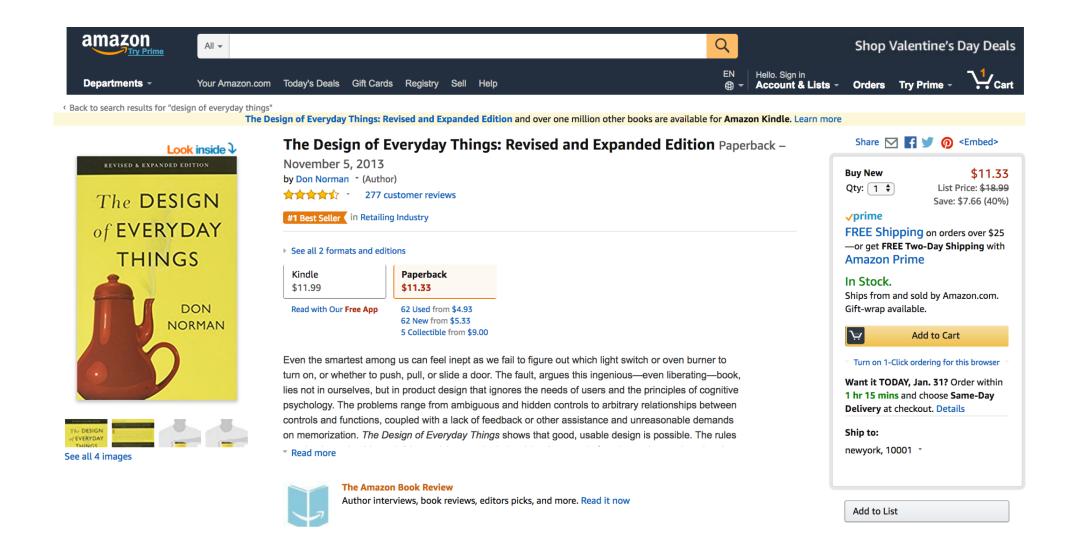
Subgoal: Search for book

Interaction: Type its name, click on the image of it



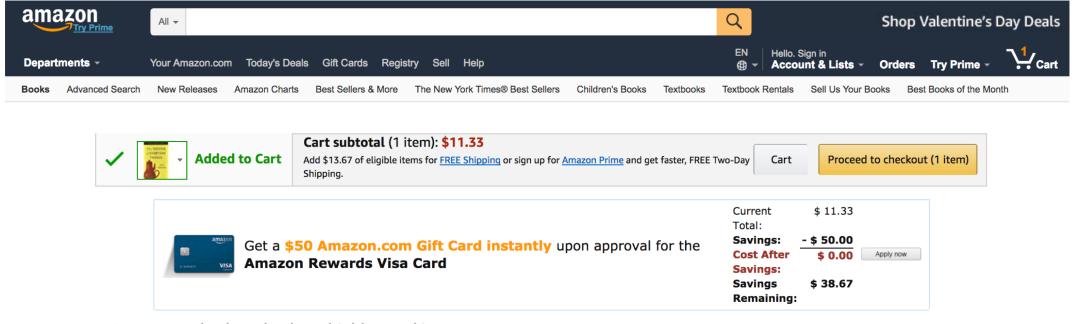
Subgoal: Add to cart

Interaction: Click "Add to cart" button

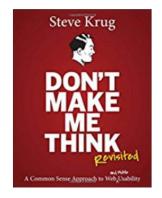


Subgoal: Checkout

Interaction: Click "Proceed to checkout" button

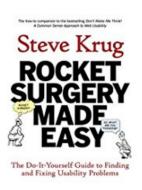


Customers also bought these highly rated items



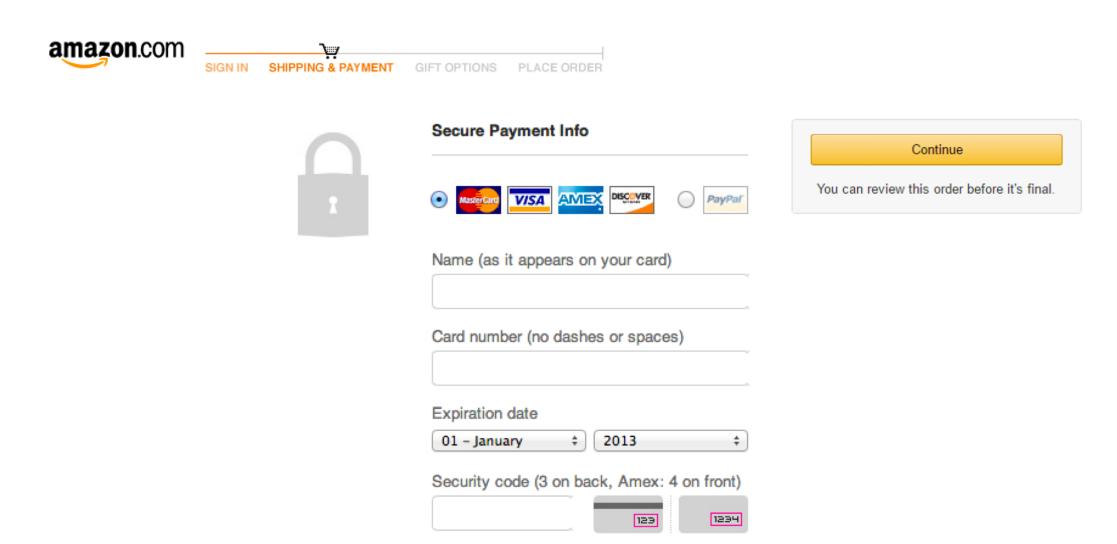






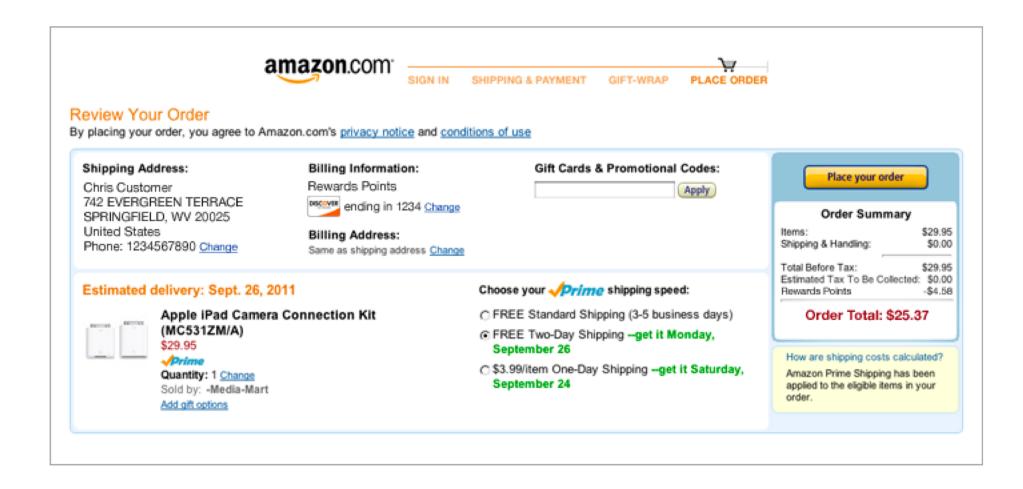
Subgoal: Enter payment information

Interaction: Click, type, move cursor, click "Continue"



Subgoal: If information is correct, place order

Interaction: Click "place your order"



The designer must know the users' goals create the subgoals and interactions to meet it.

Goal: Buy a book

Subgoal: Find it

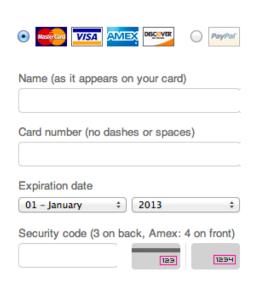
Interaction: Type, click

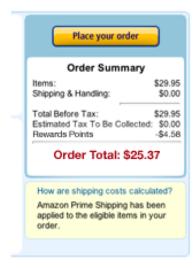
Add to cart click

Enter payment info Type, click, point Place order Click







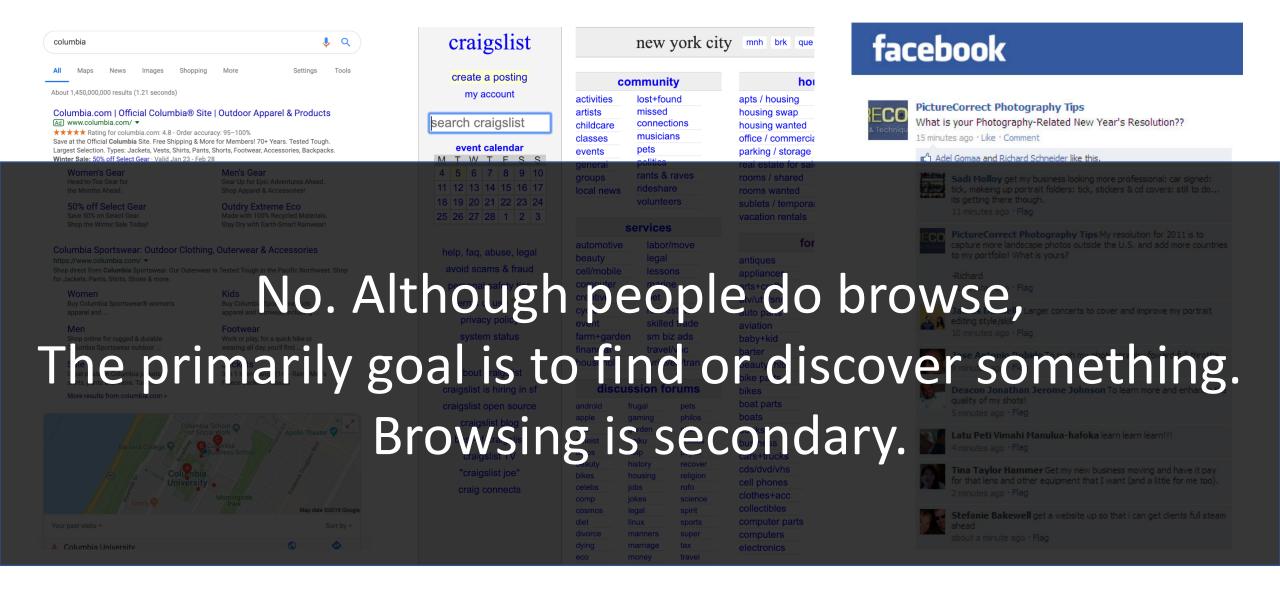


The designer must know the users' goals create the subgoals and interactions to meet it.

But sometimes on Amazon, I don't have a goal.

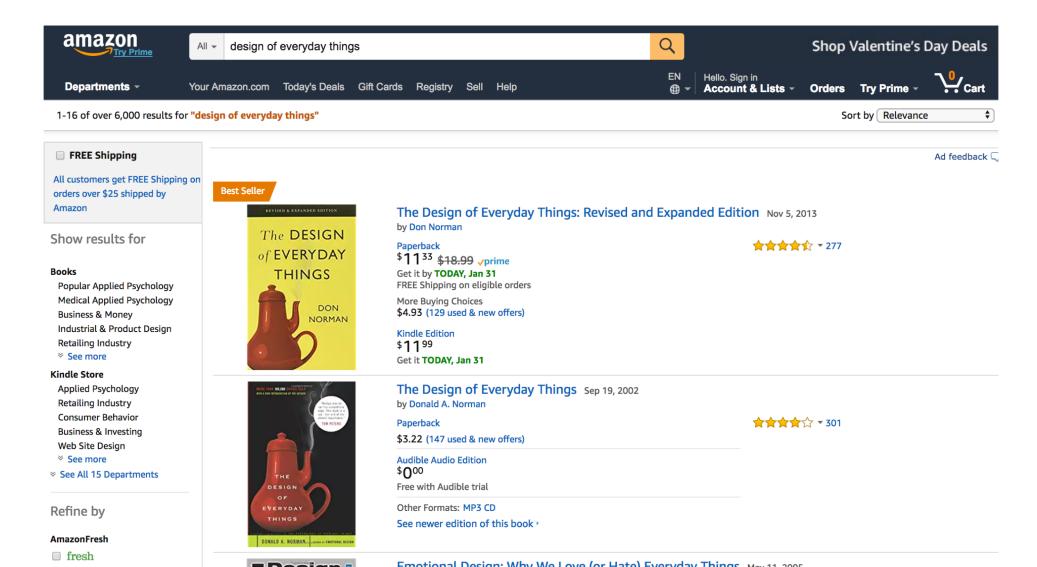
I'm just browsing.

Are these sites "just for browsing"?



The designer must know the users goals and

Create interactions that them meet it.



Low-level Interactions

amazon

Departme

Back to searce

See all 4 images

Books

What are interactions on this page?

Look inside ↓ REVISED & EXPANDED EDITION The DESIGN of EVERYDAY THINGS DON ORMAN

The Design of Everyday Things: Revised and Expanded Edition Paperback –

November 5, 2013

by Don Norman * (Author)

277 customer reviews

#1 Best Seller in Retailing Industry

See all 2 formats and editions

Kindle \$11.99

design of everyday things

Paperback \$11.33

Read with Our Free App

62 Used f

n \$5.33 62 New fro

5 Collectible from \$9.00

Smartest amor g us can feel inept as we fail of the light switch or oven burner to the contract of the light switch or oven burner to the contract of the light switch or oven burner to the li lies not in ourselves, but in product design that ignores the needs of users and the principles of cognitive psychology. The problems range from ambiguous and hidden controls to arbitrary relationships between controls and functions, coupled with a lack of feedback or other assistance and unreasonable demands

on memorization. The Design of Everyday Things shows that good, usable design is possible. The rules

Read more



Buv New

√prime

Amazon Prime

Qty: 1 \$

Ships from and sold by Amazon.com. Gift-wrap available.

FREE Shipping on orders over \$25 -or get FREE Two-Day Shipping with

Share **▼ G** <Embed>

\$11.33

List Price: \$18.99

Save: \$7.66 (40%)



dd to Cart

Turn on 1-Click ordering for this browser

Want it TODAY, Jan. 31? Order within 1 hr 15 mins and choose Same-Day **Delivery** at checkout. Details

Ship to:

newvork, 10001



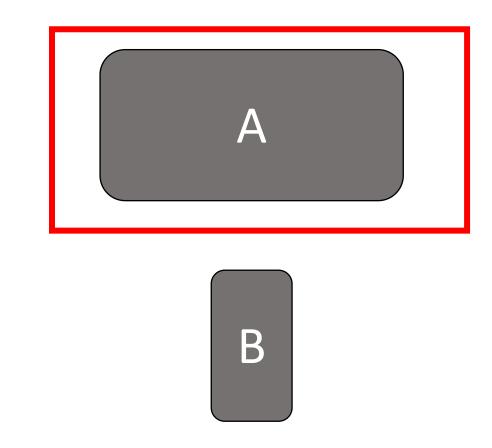
The Amazon Book Review

Author interviews, book reviews, editors picks, and more. Read it now

Add to List

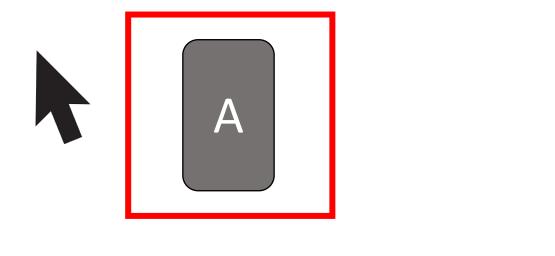
Interaction: Moving + Clicking

Which button is faster to click?



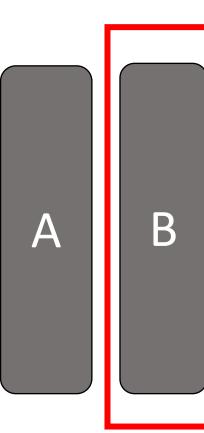


Which button is faster to click?

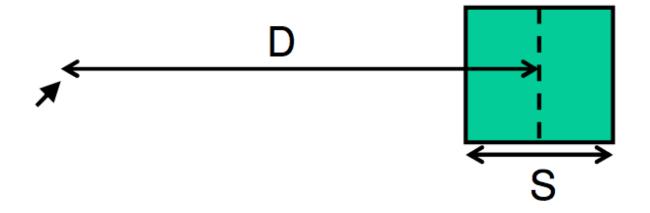


Which button is faster to click?





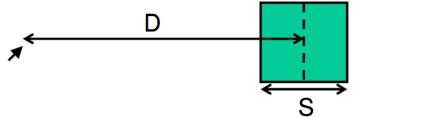
Fitts's Law



Time to move your pointer to a target

$$= a + b * log \left(\frac{2D}{S} \right)$$

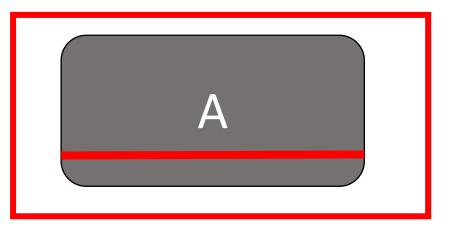
Using Fitts' law, why is A faster to click?



$$= a + b * log \left(\frac{2D}{S} \right)$$

S is bigger. Thus the time is lower.

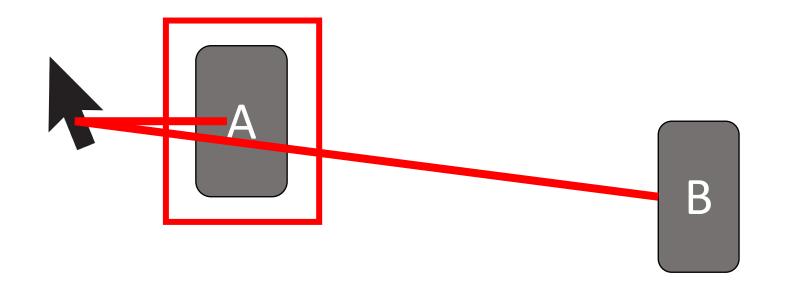






Using Fitts' law, why is A faster to click?



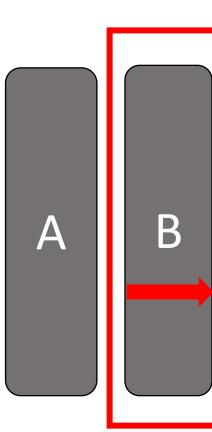


Using Fitts' law, why is B faster to click?

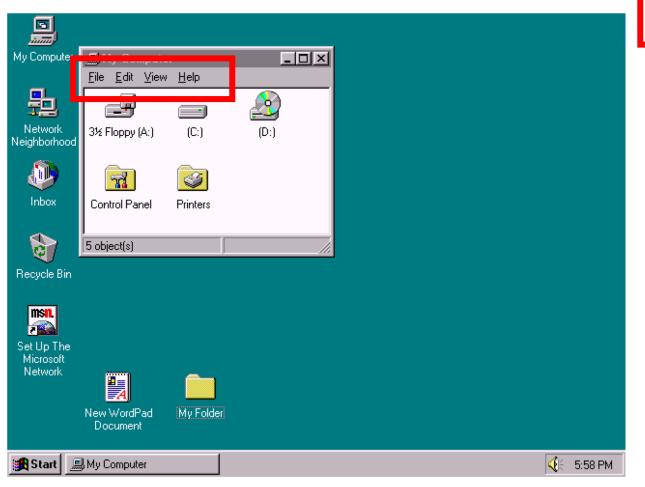
$$= a + b * log \left(\frac{2D}{S} \right)$$

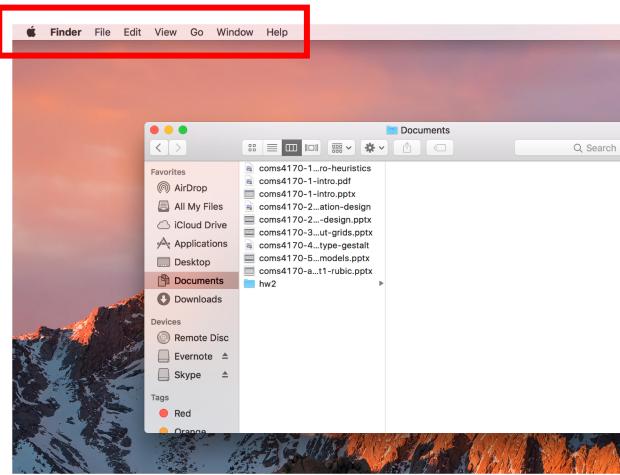
S is bigger (infinite). Thus the time is lower.



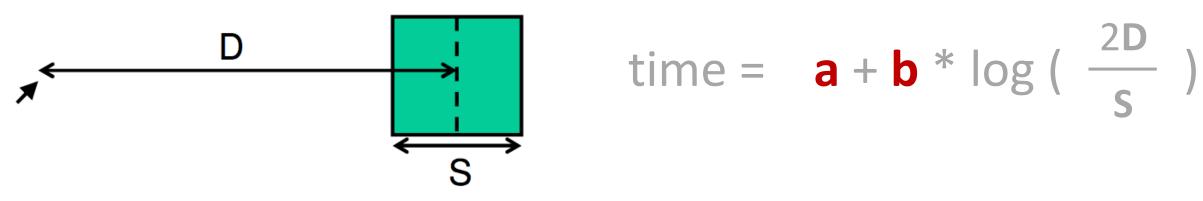


Why did iOS move the menu for applications?





Fitts's Law: What are a and b?



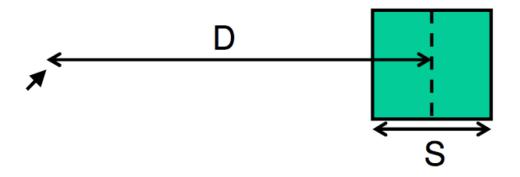








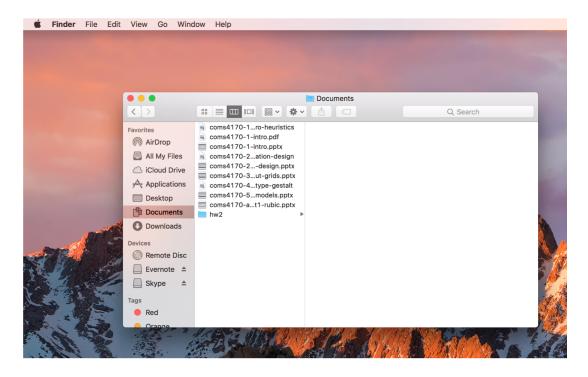
Time to move the pointer: Fitts's Law



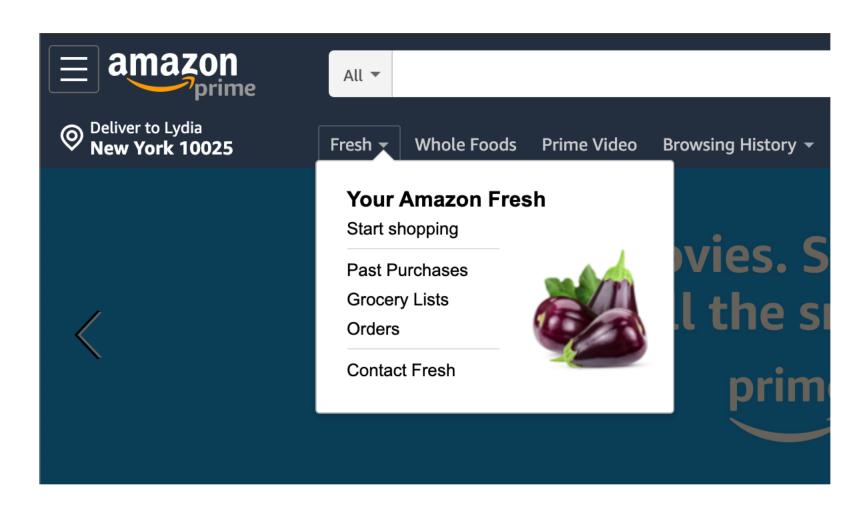
Time to move your pointer to a target

$$= a + b * log \left(\frac{2D}{S} \right)$$

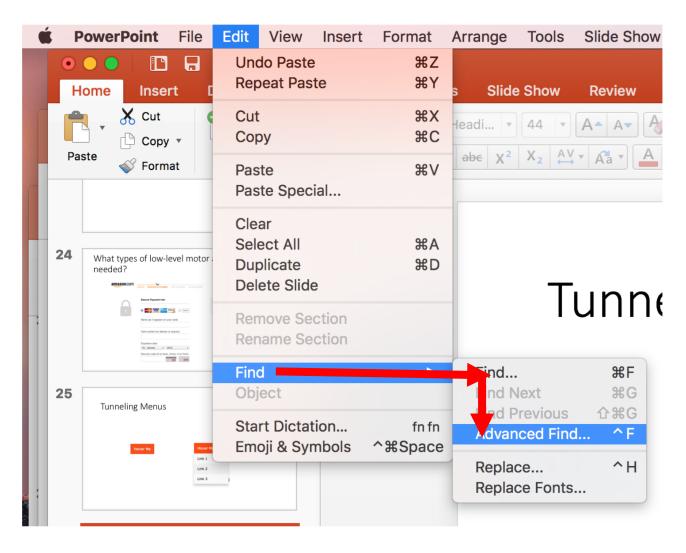
Buttons on the edges are fast to get to because they have infinite size



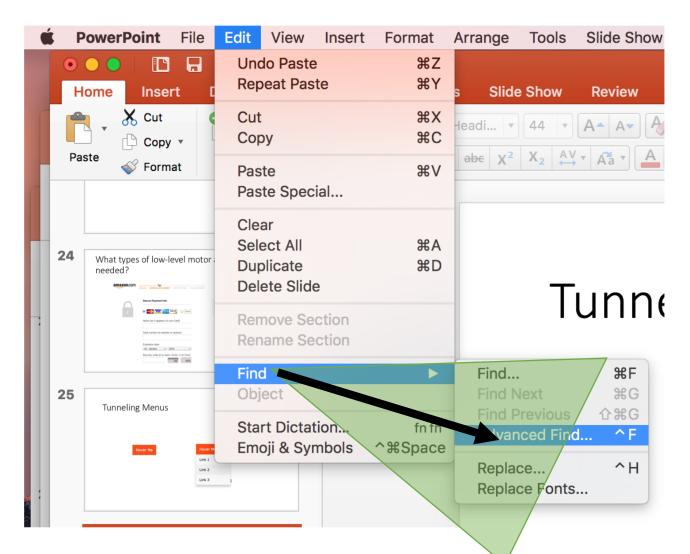
More moving + clicking: Tunneling Menus



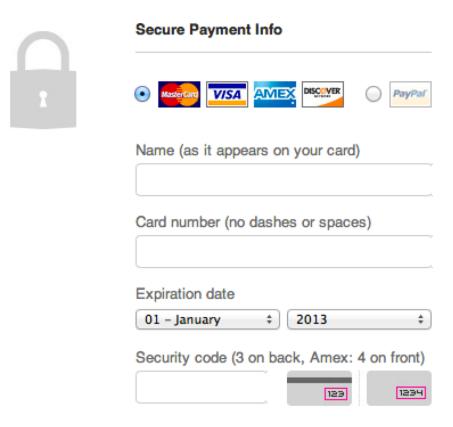
More moving + clicking: Cascading Tunnel Menus

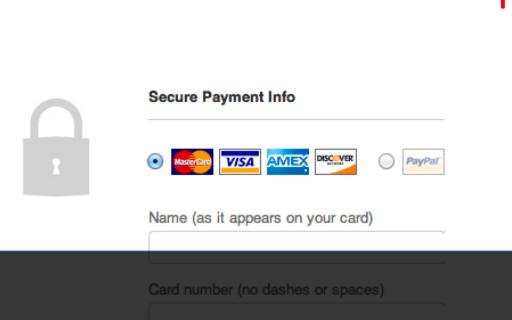


More moving + clicking: Cascading Tunnel Menus fix



What are all the low-level interactions are needed to accomplish this subgoal?





Move
Click

Move
Click

TypeTypeTypeType
Move
Click

TypeTypeTypeType

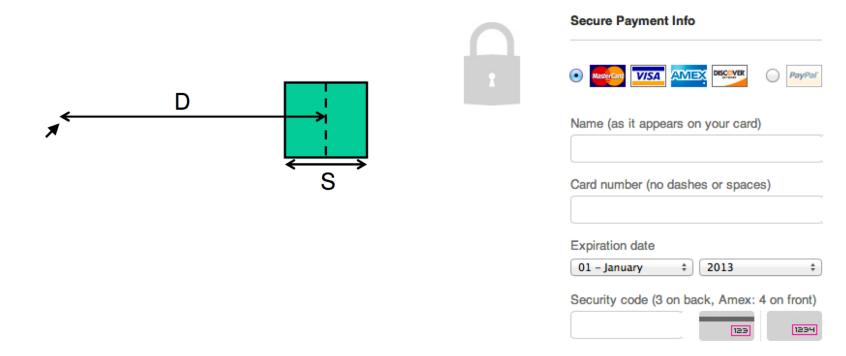
Every interaction takes time and effort, and is a potential source of error.

TypeTypeType

How could you improve this?



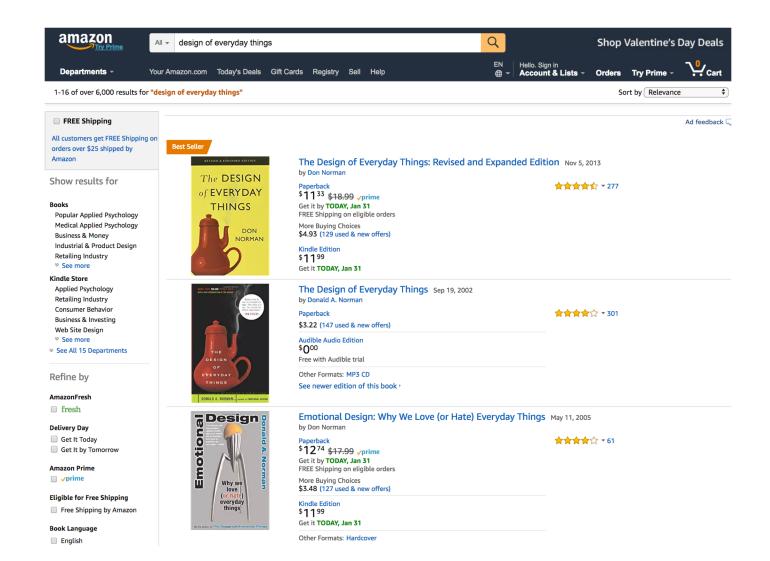
Low-level Interactions take time and effort. Minimize them because you do them a lot.



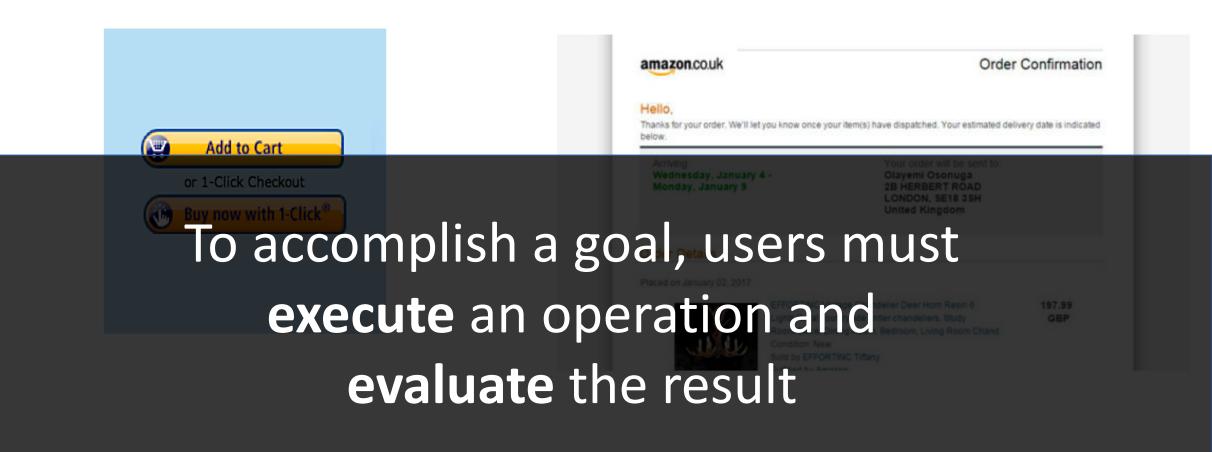


The Interaction Loop

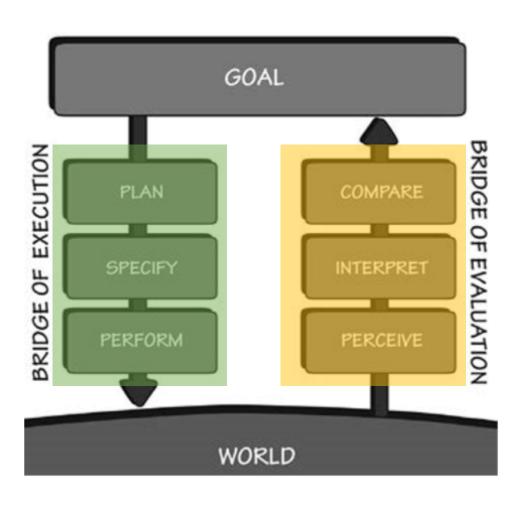
Establish a goal: Buy a book.



What happens after you place an order?



The Seven Stages of Action

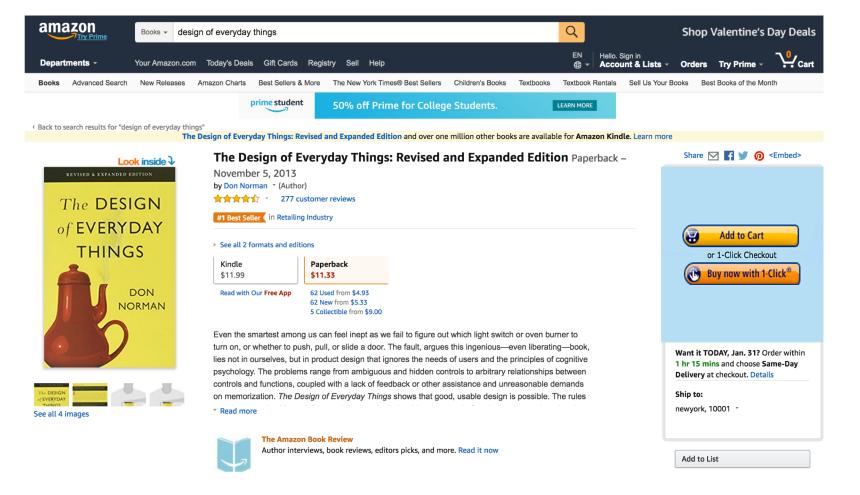


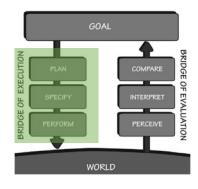
- 1. Form the goal
- 2. Plan the action
- 3. Specify the action sequence
- 4. Perform the action sequence
- 5. Perceive the state of the world
- 6. Interpret the perception
- 7. Compare the outcome with the goal

Goal Execution Step 1:

Plan the action

Specify the action sequence Perform the action sequence



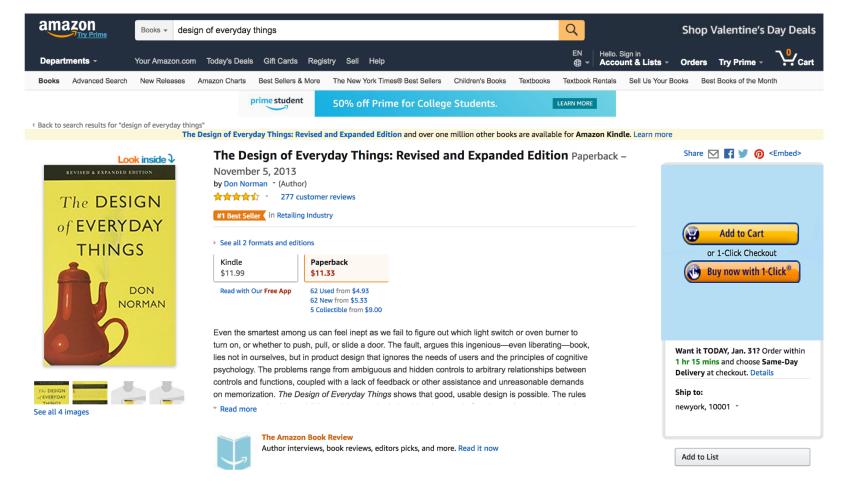


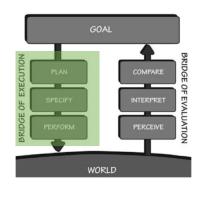
Goal Execution Step 2:

Plan the action

Specify the action sequence

Perform the action sequence

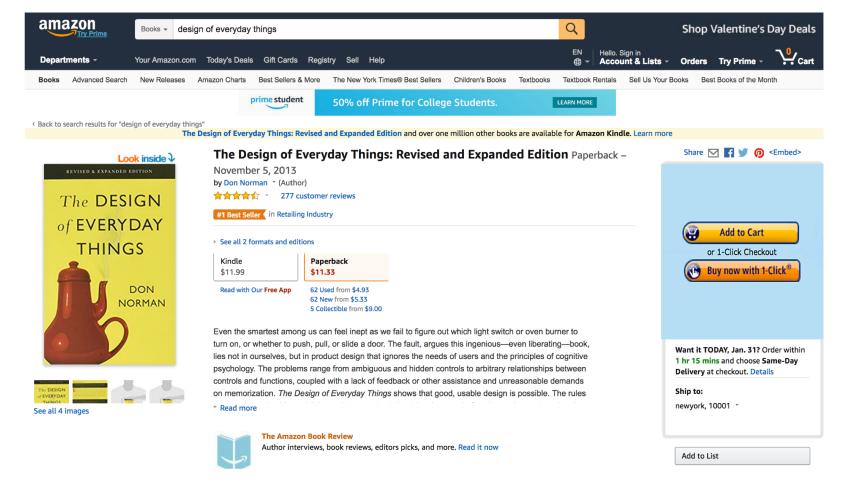


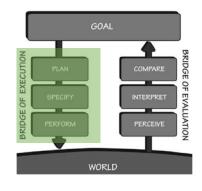


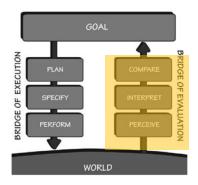
Goal Execution Step 3:

Plan the action Specify the action sequence

Perform the action sequence





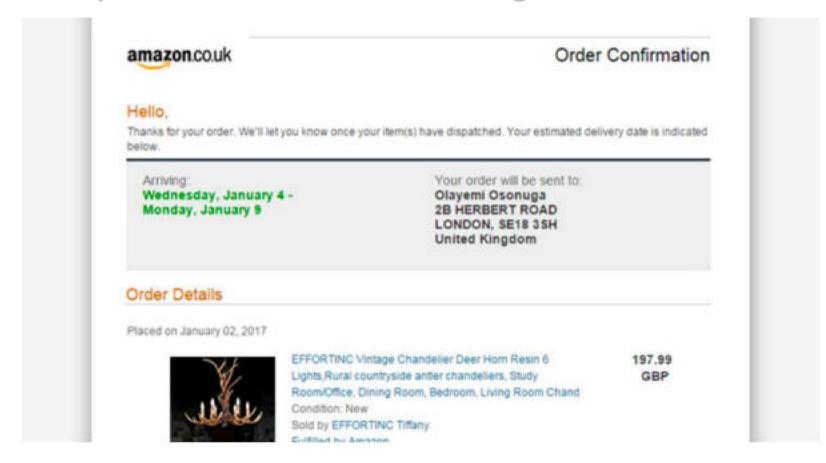


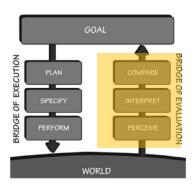
Goal Evaluation Step 1:

Perceive the State of the world

Interpret the perception

Compare the outcome with the goal



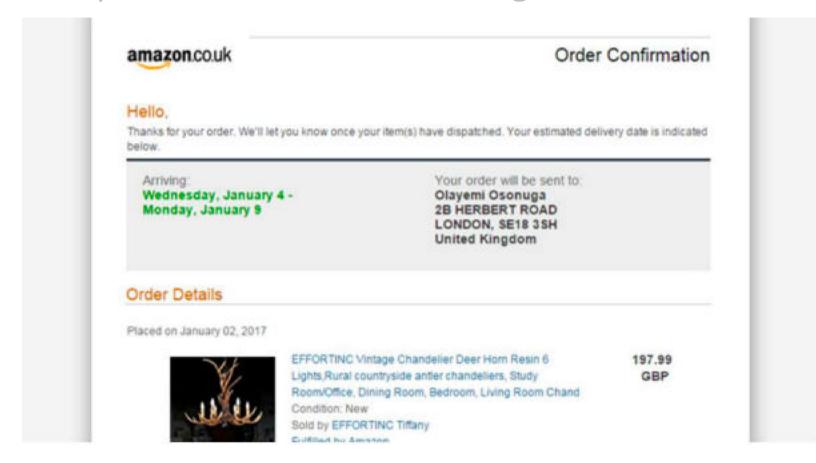


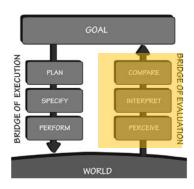
Goal Evaluation Step 2:

Perceive the State of the world

Interpret the perception

Compare the outcome with the goal

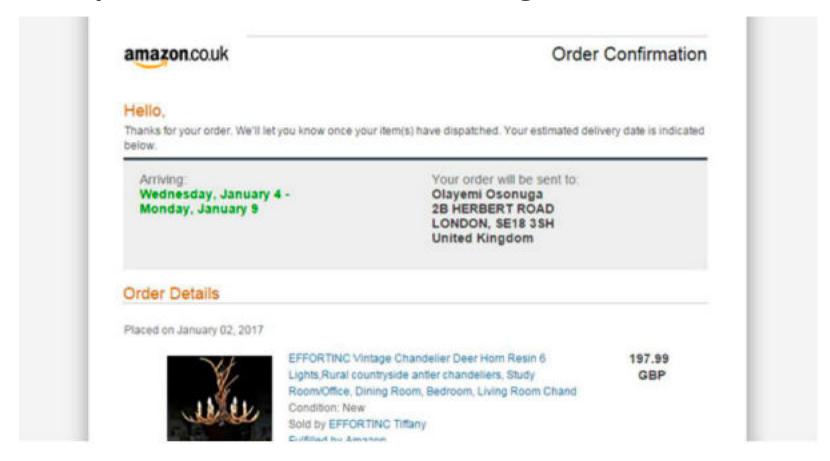




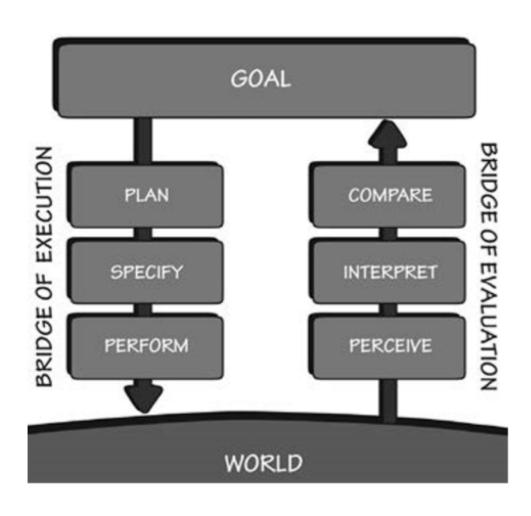
Goal Evaluation Step 3:

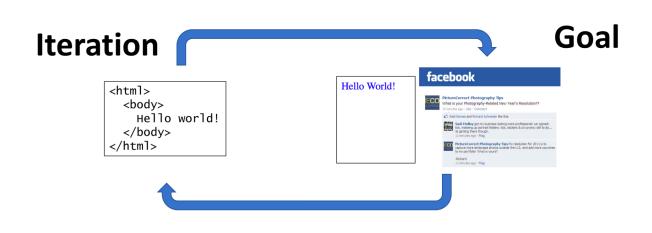
Perceive the State of the world Interpret the perception

Compare the outcome with the goal

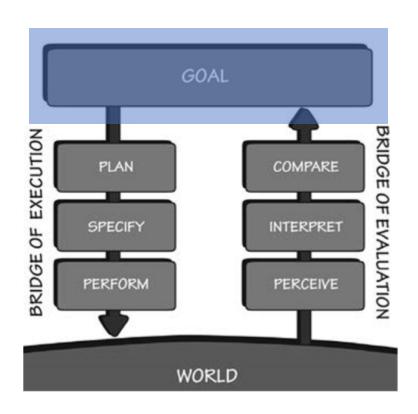


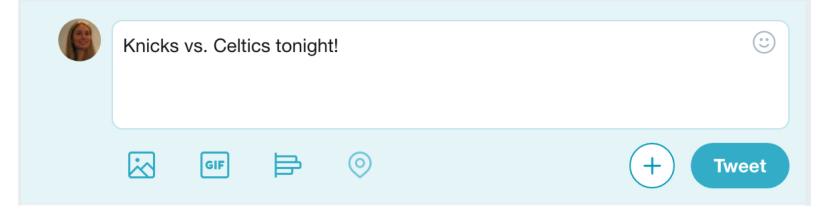
What does The 7 Stages of Action remind you of?



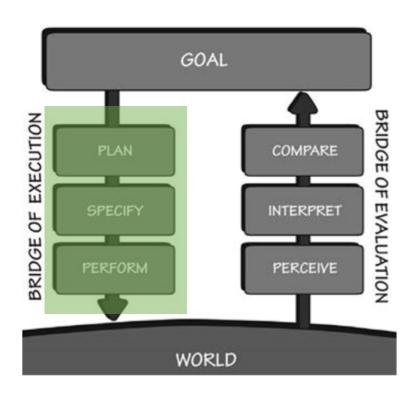


What's the users goal? Post a tweet

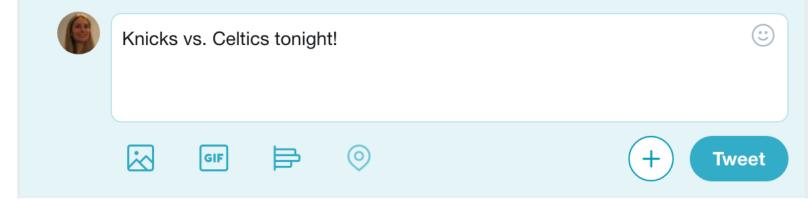




What does the execute?

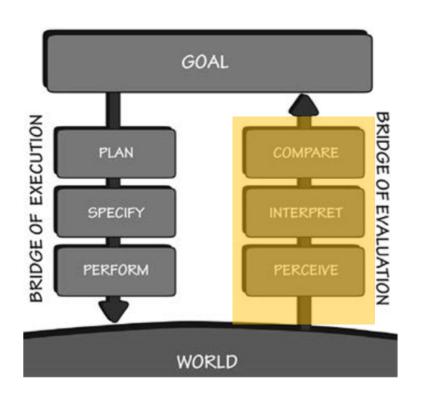


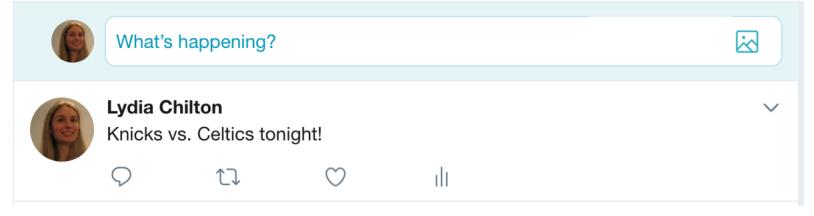
Put cursor in box
Type message
Move mouse to button and click



What does the user evaluate?

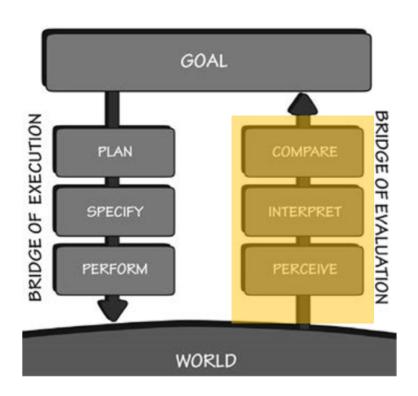
Did it get posted?

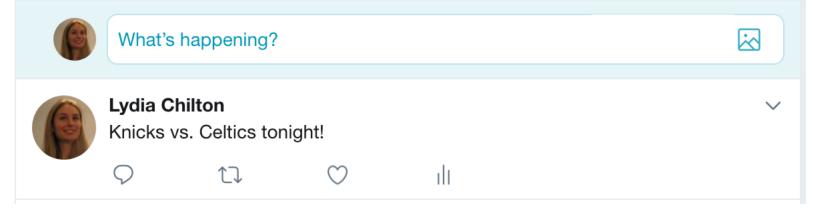




How does the user It's my face. know? It's my text.

It's my face.
It's my text.
It has new options.

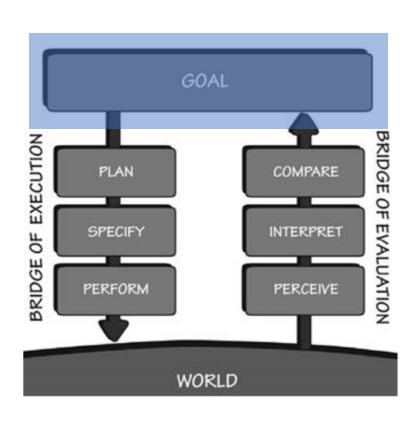




Goal: Perfect DDR score.

What's the users subgoal?

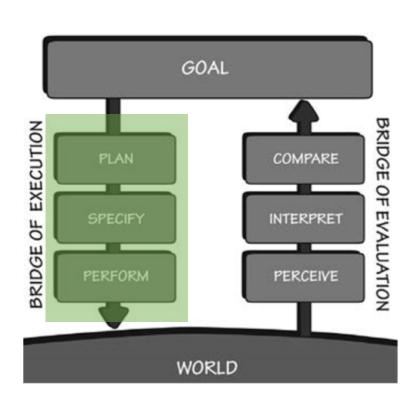
Step on the correct arrow at the correct time.





Execution 1: How does the user plan the action?

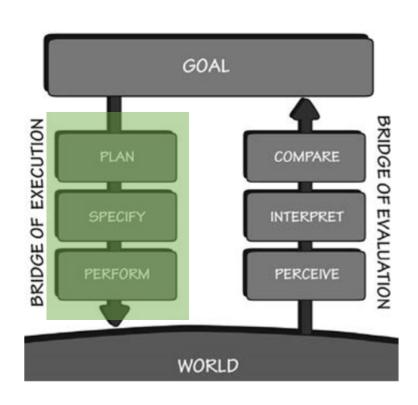
Look at the screen to see the correct arrow/timing





Execution 2&3: How does the user execute the action?

Lift your foot, move over arrow, Place it at the right time





Evaluation: How does the user evaluate the action?

BRIDGE OF EXECUTION

SPECIFY

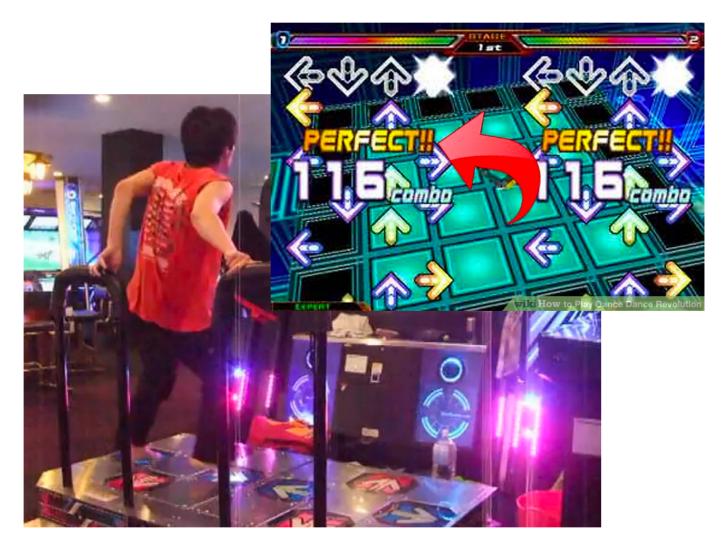
PERFORM

PERFORM

PERCEIVE

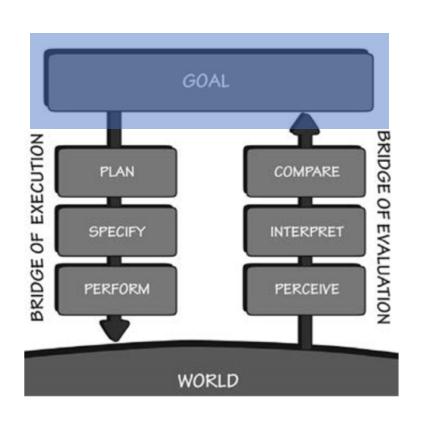
WORLD

You can see the arrow flash It tells you a grade



What's the users goal?

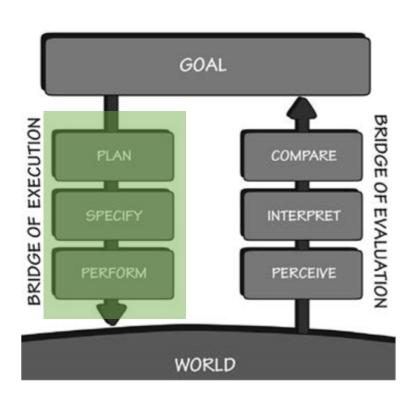
To set the alarm for 9:07am





Execution?

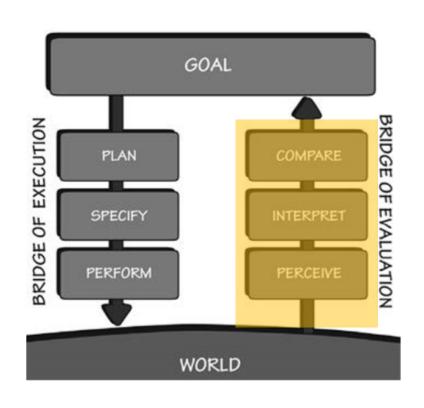
Move the wheel to the time Switch it to "on"

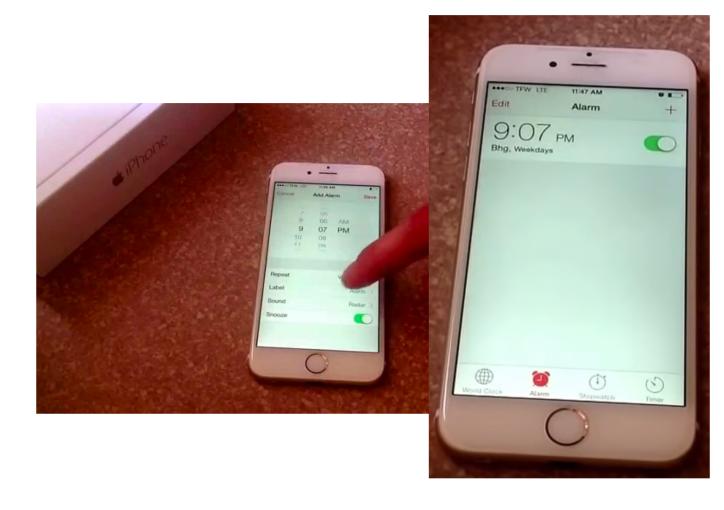




Evaluation?

Turns to an alarm screen



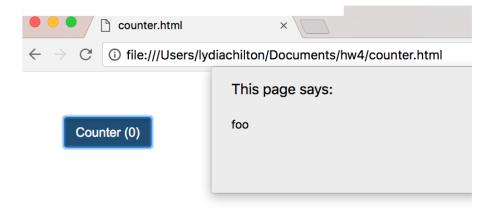


Next time:

Programing interactions in JavaScript?

HTML

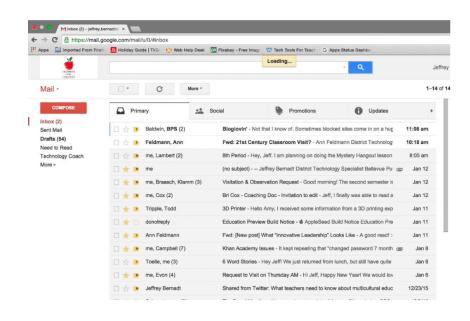
JavaScript



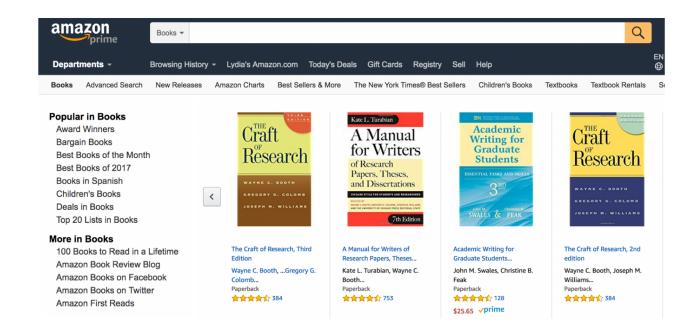
counter.html

Summary

Users interact with a system to accomplish a goal



To read and respond to all email.



To buy a book

The designer must create the subgoals and interactions to help them accomplish it.

Goal: Buy a book

Subgoal: Find it

Interaction: Type, click Add to cart click

Buy New \$11.33 List Price: \$18.99 Qty: 1 \$ Save: \$7.66 (40%) **√**prime FREE Shipping on orders over \$25 -or get FREE Two-Day Shipping with **Amazon Prime** In Stock. Ships from and sold by Amazon.com. Gift-wrap available. Add to Cart Turn on 1-Click ordering for this browser Want it TODAY, Jan. 31? Order within 1 hr 15 mins and choose Same-Day Delivery at checkout, Details Ship to: newyork, 10001

Add to List

Enter payment info Type, click, point

VISA AMEX DISCOVER

Name (as it appears on your card)

Card number (no dashes or spaces)

2013

Expiration date

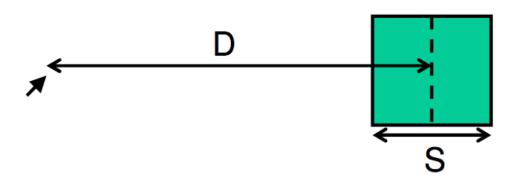
01 - January

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





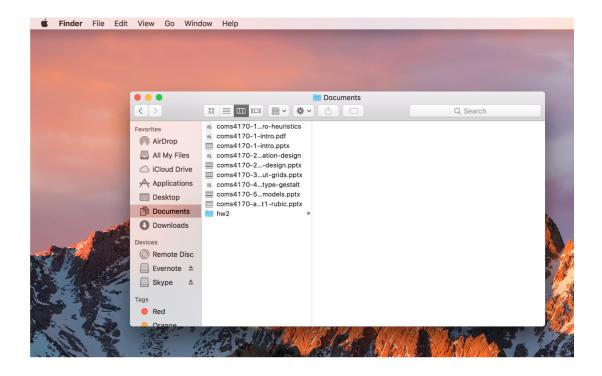
Time to move to a target: Fitts's Law



Time to move your pointer to a target

$$= a + b * log \left(\frac{2D}{S} \right)$$

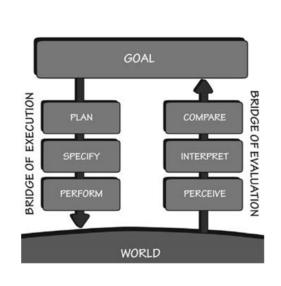
Buttons on the edges are fast to get to because they have infinite size

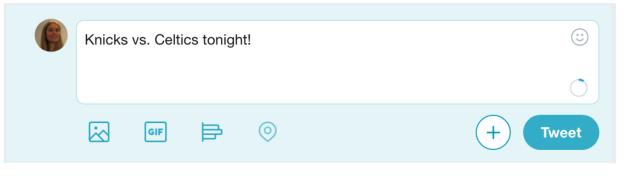


Low-level interactions take time and effort. Minimize them because you do them a lot.



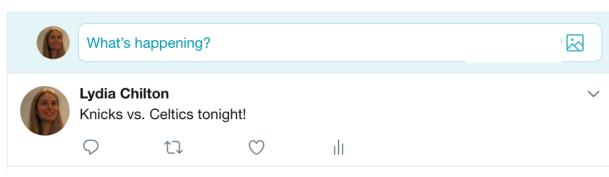
Know the users' goals and design interactions as: execution and evaluation





Execution

Plan the action
Specify the action sequence
Perform the action sequence



Evaluation

Perceive the state of the world
Interpret the perception
Compare the outcome with the goal



Fill out participation now!

2 JANUARY 27

Participation Form Information Design

JANUARY 29

Homework 1 due @ 4pm

Homework 2 out

Participation Form

Grids and Layouts

JANUARY 31

<u>Participation Form</u> Grids and Layouts