

Events and Feedback

No screens



Prof. Lydia Chilton
COMS 4170
13 February 2019

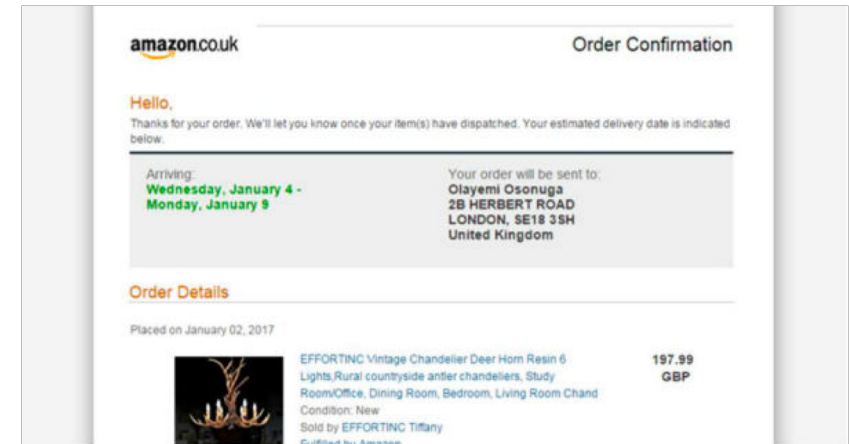
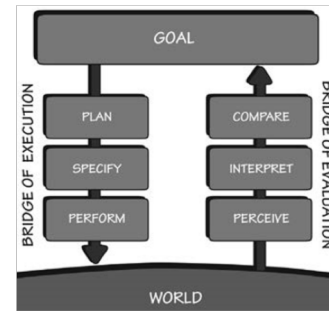
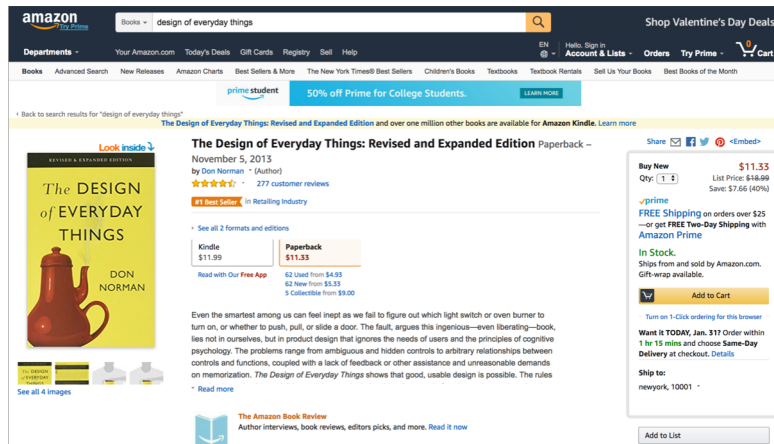
Say your name



Goal 1

Build websites that suit the needs and abilities of users

To accomplish a goal, users must **execute** an operation and **evaluate** the result



To help users **evaluate** the result, designers must provide **feedback**.

What goes wrong when you provide **no feedback**?



Thought: Users are **confused** about whether their goal has been achieved.

Action: They continue to **expend energy** to **accomplish the goal**.

What goes wrong when you provide **too little feedback**?

Submit Credit Card Payment

Order Summary

Total

\$412.97

Items

Description	Category	Qty	Unit Price	Amount
Mobile device for demos	Hardware	2	\$150.00	\$300.00
Video software upgrade	Software	1	\$50.99	\$50.99
Device accessories	Miscellaneous	2	\$30.99	\$61.98
			Total	\$412.97
				5 items

Payment Information

Information incorrect

Card Number *

1234123412341234

Expiration Date *

1220

CCV *

999

PLACE YOUR ORDER

Credit card transactions are handled by our secure payment processor. We do not store your credit card information.

When you click the 'Place Your Order' button, we'll send you an email message acknowledging receipt of your order. Your contract to purchase an item will not be complete until we send you an email notifying you that the item has been shipped.

CONTINUE

Thought: Users know something has happened, but they **don't know what**.

Action: They continue to **expend energy** to **figure out what to do**.

else



What goes wrong when you provide **too little feedback**?

BEEP



Thought: Users know something has happened, but they **don't know what**.

Action: They continue to **expend energy** to figure out **if it's important**.

What goes wrong when you provide **too much feedback**?



I am now booking your flight

I am now using Google flight search

I am now typing JFK into the departure location

I am now typing LAX into the arrival location

I am now selecting February 26, 2018 from the departure date box

I am now confirming the date I just selected from the Departure date box

Thought: Users get **annoyed** that some of the information is useless

Action: They **ignore all the feedback**.

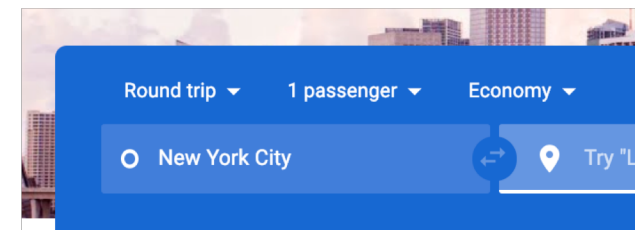
What goes wrong when **feedback too late**?



By the way, I booked that flight you asked for yesterday!

Thought: Users assume that **no feedback means no action**

Action: They **find another way** to reach their goal



What goes wrong when **feedback is not continuous?**

Student Services Online

► **Wait List**

See Class Roster Comments and Suggestions

Wait List Info

Spring 2019 COMS 4170 W sec: 001 **USER INTERFACE DESIGN**
Instructor: Lydia Chilton

Class capacity: 100 **Enrollment:** 108 **Available:** 0

Show All Details Refresh List

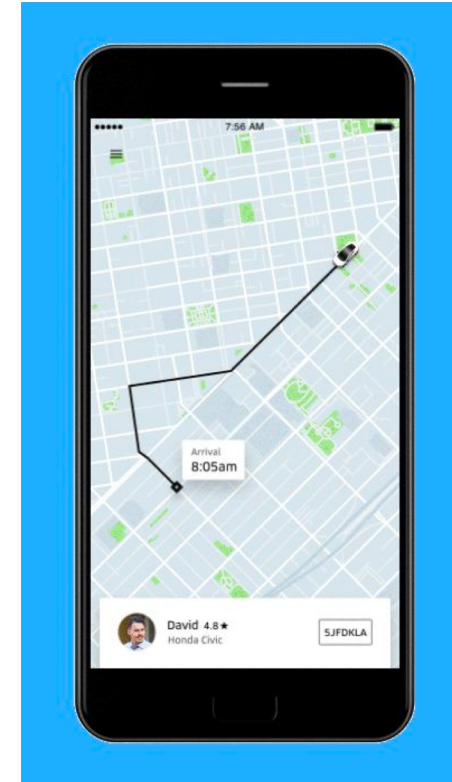
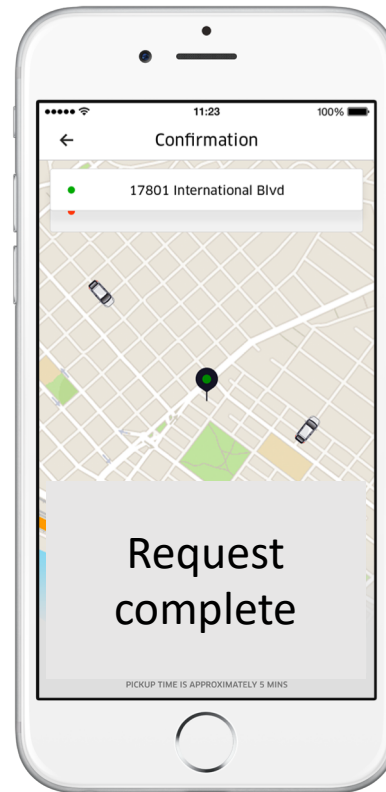
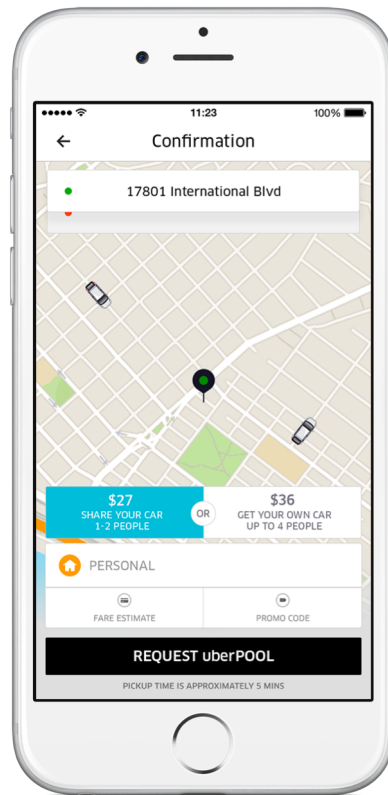
Wait List

Priority	Student PID	UNI	Student Name
----------	-------------	-----	--------------

Thought: Users are **unsure** whether the system is doing it or not.

Action: Users have to **poll the system** for feedback frequently.

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

Design goals for 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

Ways of perceiving feedback

How do we perceive this feedback?

BEEP



I'm sorry, Dave.
I'm afraid I can't do that.



Examples of sound feedback?



How do we perceive this feedback?

Submit Credit Card Payment

Order Summary

Total

\$412.97

Items

Description	Category	Qty	Unit Price	Amount
Mobile device for demos	Hardware	2	\$150.00	\$300.00
Video software upgrade	Software	1	\$50.99	\$50.99
Device accessories	Miscellaneous	2	\$30.99	\$61.98
Total				\$412.97

5 items

Payment Information

Information incorrect

Card Number *

1234123412341234

Expiration Date *

1220

CCV *

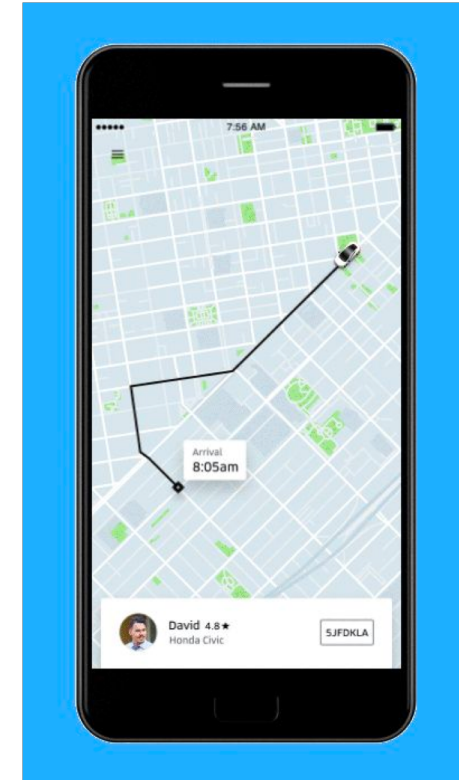
999

PLACE YOUR ORDER

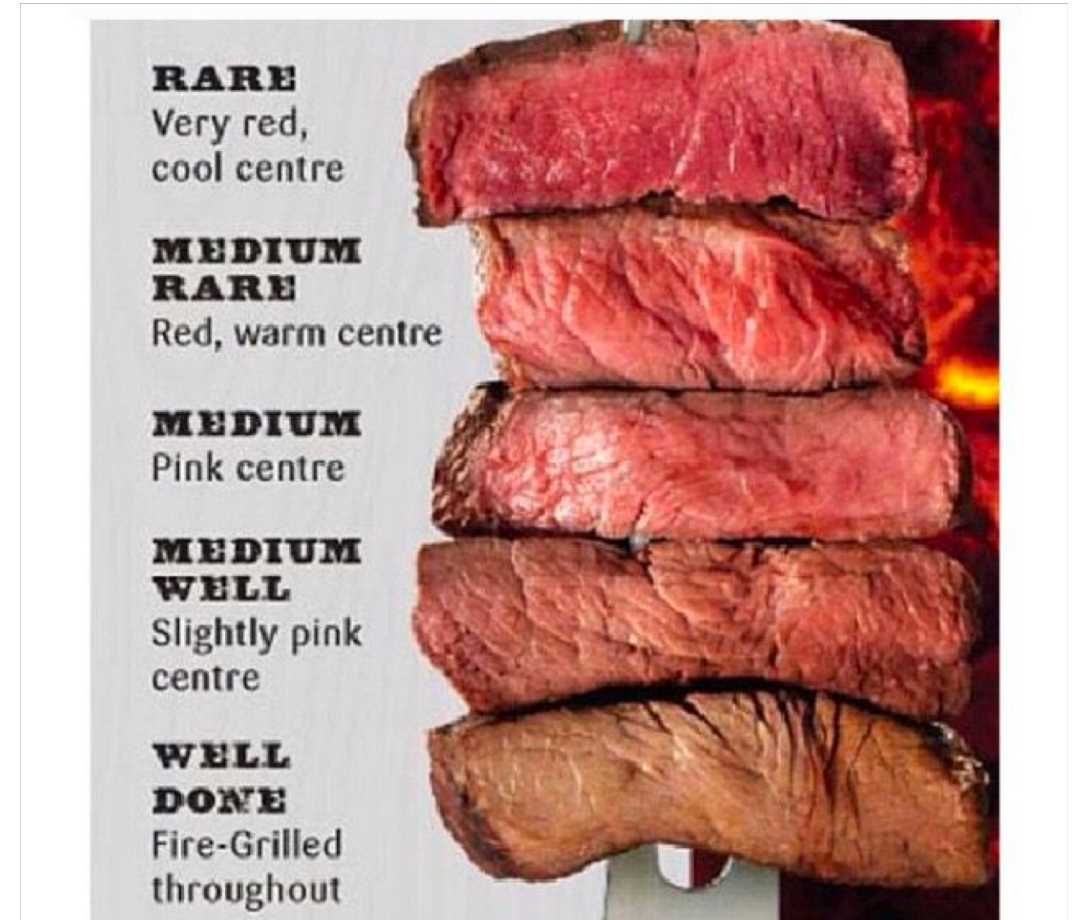
Credit card transactions are handled by our secure payment processor. We do not store your credit card information.

When you click the 'Place Your Order' button, we'll send you an email message acknowledging receipt of your order. Your contract to purchase an item will not be complete until we send you an email notifying you that the item has been shipped.

CONTINUE



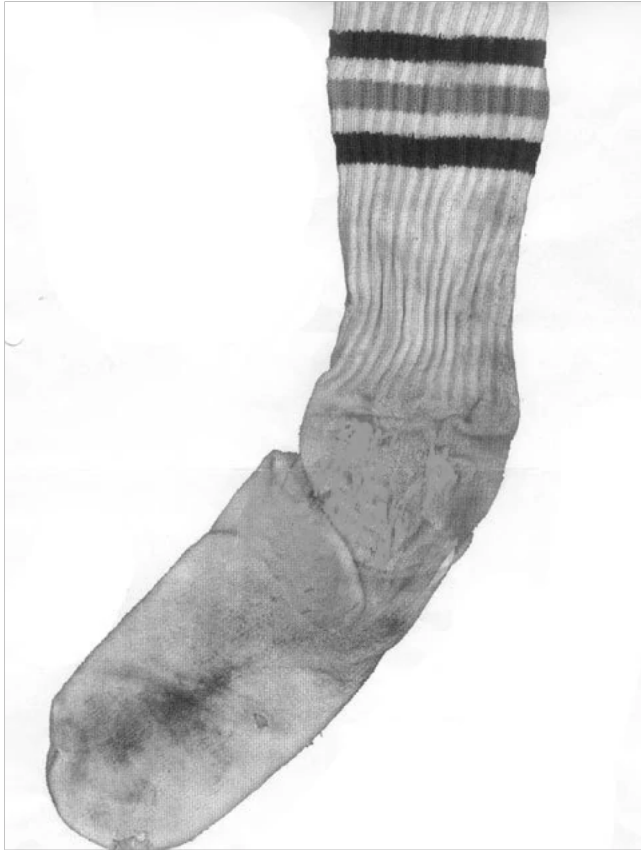
Examples of visual feedback (non-digital)?



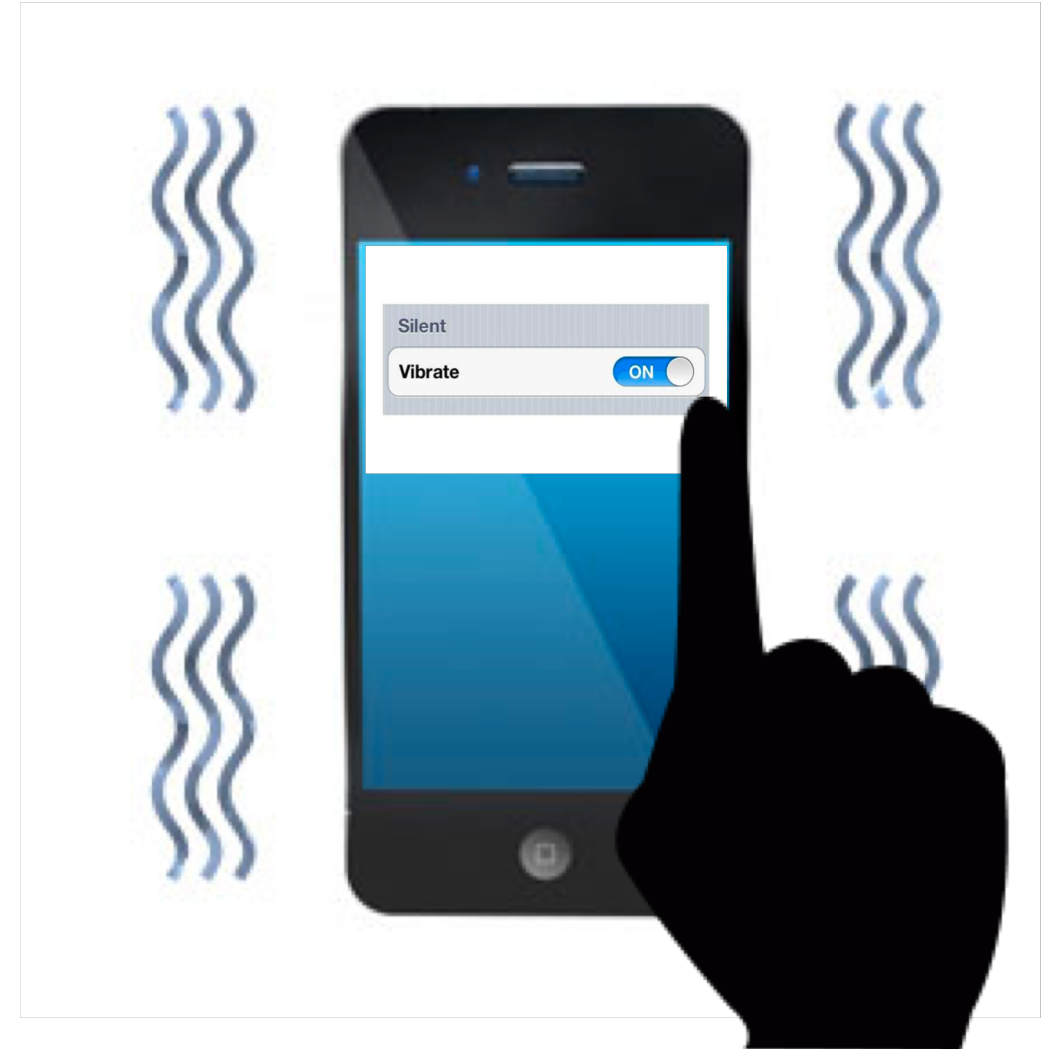
How do we perceive this feedback?



Examples of smell feedback?



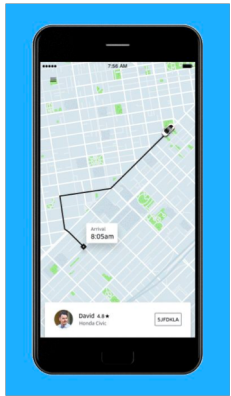
How do we perceive this feedback?



Examples of haptic (touch) feedback?



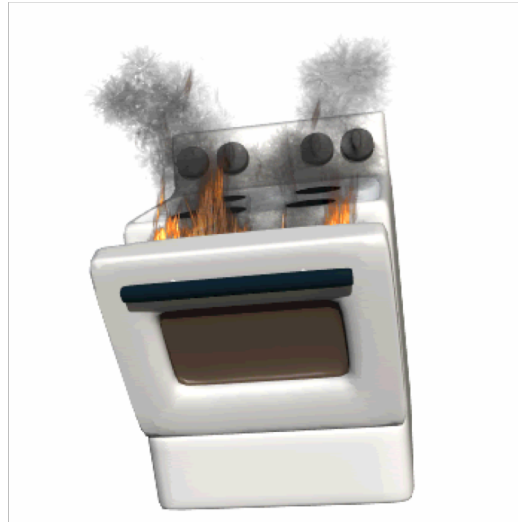
The human nervous system is designed to perceive feedback in many forms.



Sight



Sound



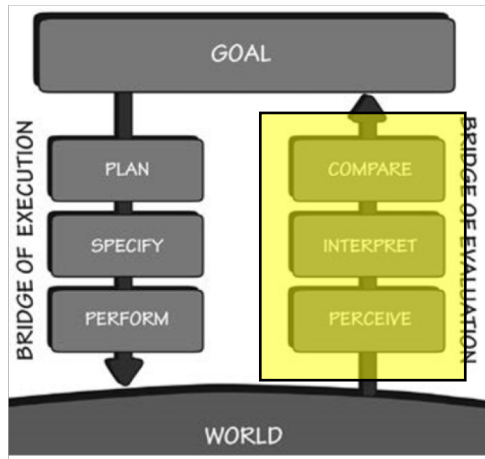
Smell



Touch

Physical Input Events and Feedback

Every time the user executes an action, the interface should provide feedback

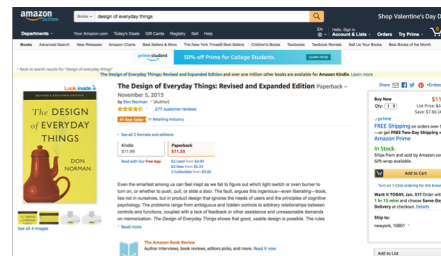


Low-level physical actions, like pressing a key

This image shows two examples of low-level virtual actions. At the top is a large red button with the word **COMPOSE** in white capital letters. Below it is a 'Payment Information' form with a red error message: 'The credit card number is invalid.' The form contains input fields for 'Card Number *' (with the value 1234123412341234), 'Expiration Date *' (with the value 1220), and 'CCV *' (with the value 999). A blue 'PLACE YOUR ORDER' button is at the bottom right of the form.

Low-level virtual actions, like clicking a button

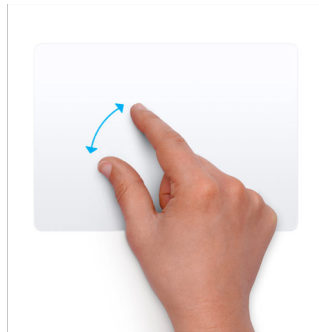
Mid-level actions, like filling out a form



High-level actions, like buying a book

Low-level user actions are represented in the system as **events**.

Action



Event

Keypress event

Mousemove event

Mousepress event

Pinch gesture event

Low-level physical actions

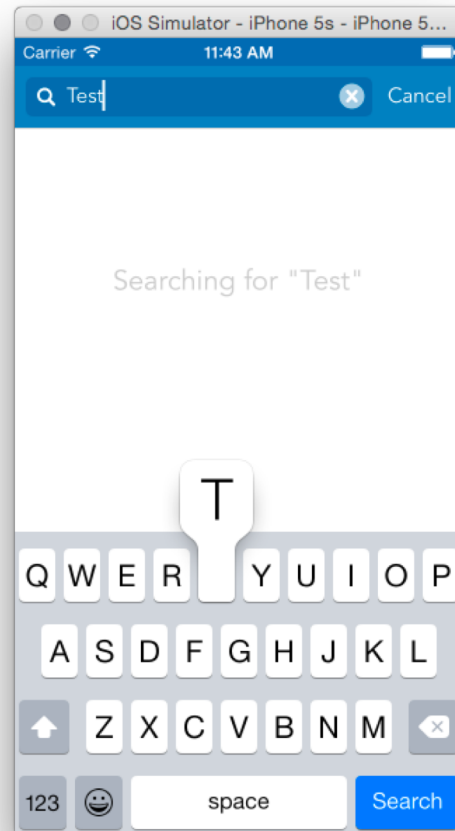
Types of hard keyboard keypress feedback?



haptic (can feel the key), **sound**, and **visual** (screen action)

Low-level physical actions

Types of soft keyboard **keypress** feedback?



~~haptic (can feel the key)~~, **sound** (simulated), and **visual** (screen action)

Low-level physical actions

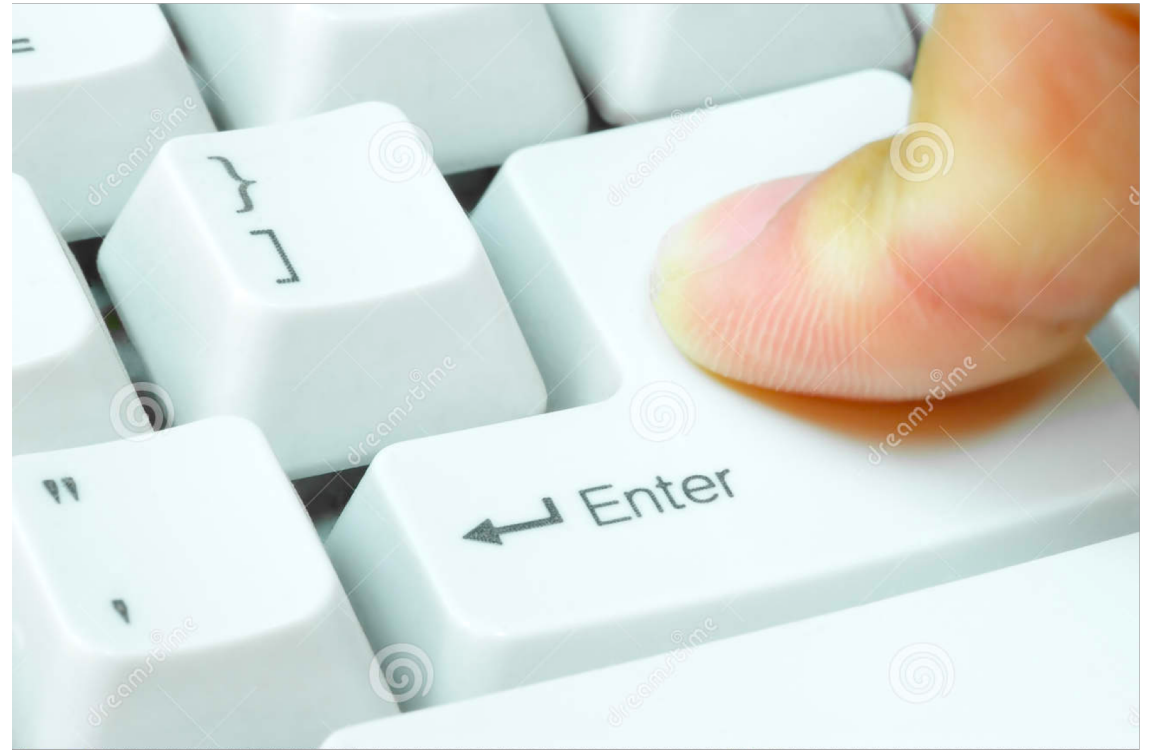
Types of hard keyboard **keydown** feedback?



haptic (can feel the spring pushing back),
sound (click), and
visual (can see it pushing down a tiny bit)

Low-level physical actions

Types of hard keyboard **keyup** feedback?



haptic (can feel the spring pushing up),
sound (click), and
visual (can see it move a tiny bit)

Low-level physical actions

Types of trackpad Mousemove feedback?



haptic (can feel the friction),
~~sound (no), and~~
visual (cursor movies)

Low-level physical actions

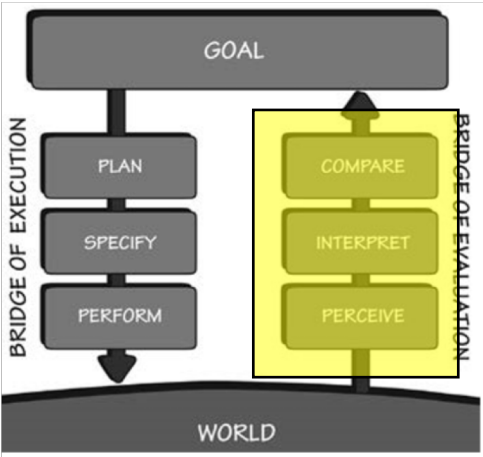
Types of trackpad Mousedown feedback?



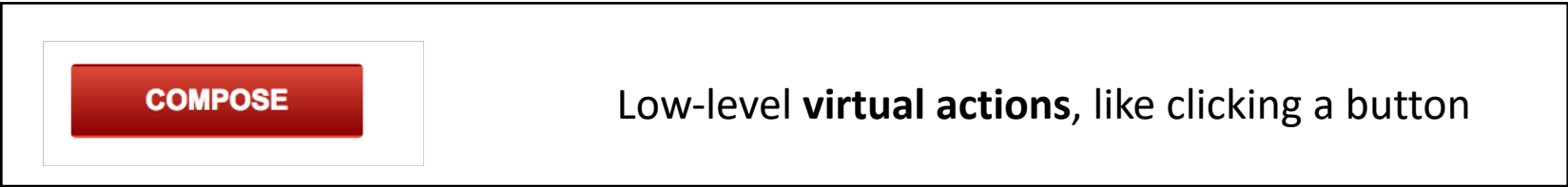
haptic (spring resistance),
sound (simulated click), and
visual (cursor movies)

Low-level Virtual Feedback

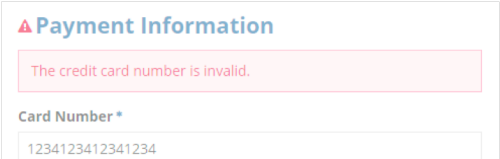
Every time the user executes an action, the interface should provide feedback



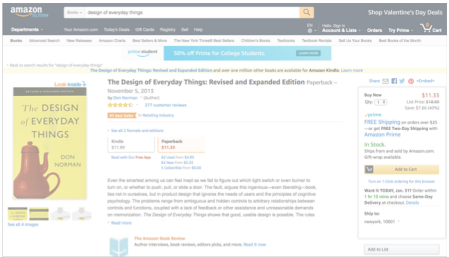
Low-level physical actions, like pressing a key



Low-level **virtual** actions, like clicking a button



Mid-level actions, like filling out a form

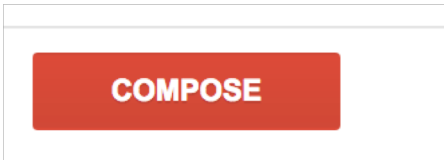


High-level actions, like buying a book

Subgoal: Press the compose button

What is the **first event** we respond to?

Normal state

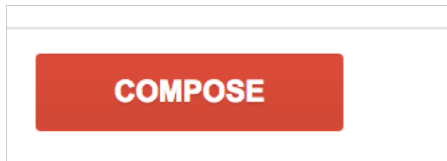


```
.T-I-KE {  
  background-color: ■ #d14836;  
}
```

Subgoal: Press the compose button

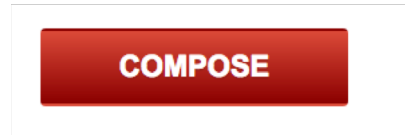
What is the **second** event we respond to?

Normal state



```
.T-I-KE {  
  background-color: #d14836;  
}
```

Mouseover
feedback

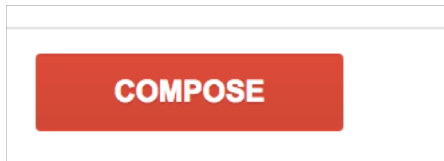


```
.T-I-KE.T-I-JW {  
  background-image: linear-gradient(to  
    bottom, #dd4b39, #dd4b39);  
}
```

Subgoal: Press the compose button

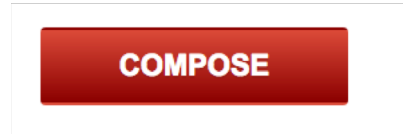
What is the **third** event we respond to?

Normal state



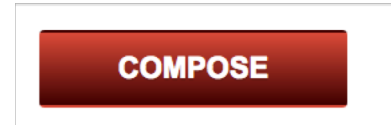
```
.T-I-KE {  
  background-color: #d14836;  
}
```

Mouseover
feedback



```
.T-I-KE.T-I-JW {  
  background-image: linear-gradient(to  
    bottom, #dd4b39, #dd4b39);  
}
```

Mousedown
feedback

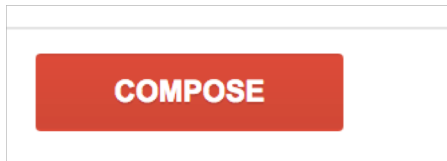


```
background-image: linear-gradient(to  
  bottom, #dd4b39, #400000);
```

Subgoal: Press the compose button

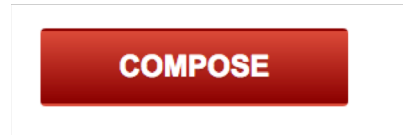
What is the **final** event we respond to?

Normal state



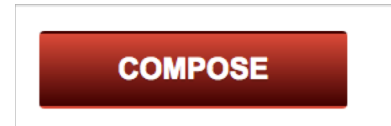
```
.T-I-KE {  
  background-color: #d14836;  
}
```

Mouseover
feedback



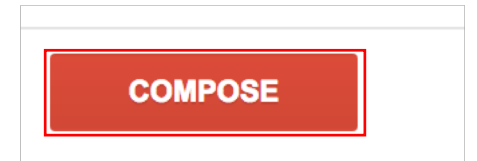
```
.T-I-KE.T-I-JW {  
  background-image: linear-gradient(to  
    bottom, #dd4b39, #dd4b39);  
}
```

Mousedown
feedback



```
background-image: linear-gradient(to  
  bottom, #dd4b39, #400000);
```

Mouseup
feedback

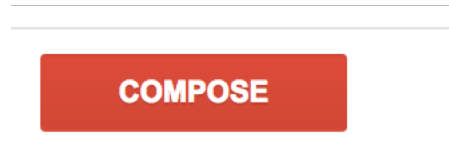


```
.T-I-KE {  
  background-color: #d14836;  
}
```

Implementing Low-level Feedback

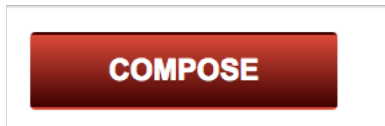
How do you implement visual feedback?

Normal state



```
.T-I-KE {  
  background-color: #d14836;  
}
```

Mousedown



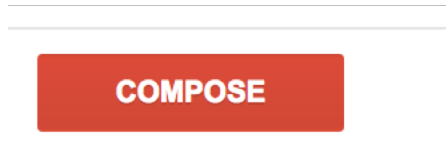
```
.T-I-KE.T-I-JW {  
  background-image: linear-gradient(to  
    bottom, #dd4b39, #400000);  
}
```

```
1  $(document).ready(function(){  
2      $("#compose_button").mousedown(function(){  
3          //?????????  
4      })  
5  })  
6  }  
7  }  
8  }
```

1. Register an event handler on the object
2. Change the style

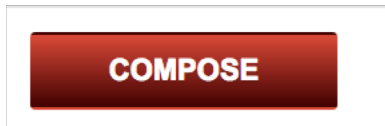
Can you change style like this?

Normal state



```
.T-I-KE {  
  background-color: #d14836;  
}
```

Mousedown



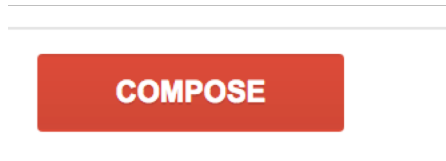
```
.T-I-KE.T-I-JW {  
  background-image: linear-gradient(to  
    bottom, #dd4b39, #400000);  
}
```

```
1 $(document).ready(function(){  
2   $("#compose_button").mousedown(function(){  
3  
4     $(this).css("background-image", "linear-gradient(to bottom, #dd4b38, #400000)"  
5  
6   })  
7 })  
8
```

It will work, but it's **ugly**.

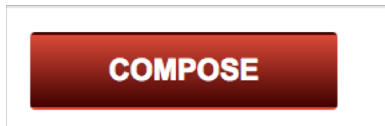
This is the better way to change style. Why?

Normal state



```
.T-I-KE {  
  background-color: #d14836;  
}
```

Mousedown



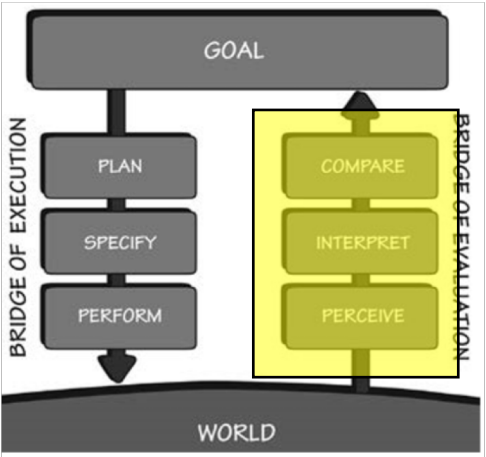
```
.T-I-KE.T-I-JW {  
  background-image: linear-gradient(to  
    bottom, #dd4b39, #400000);  
}
```

```
1 $(document).ready(function(){  
2   $("#compose_button").mousedown(function(){  
3  
4     //$(this).css("background-image", "linear-gradient(to bottom, #dd4b38, #400000)")  
5     $(this).addClass("T-I-JW")  
6  
7   })  
8 })
```

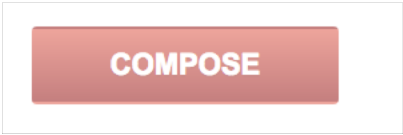
Classes abstract out designs and are easy to add / remove.

Mid-and High-level Action Feedback

Every time the user executes an action, the interface should provide feedback



Low-level physical actions, like pressing a key



Low-level **virtual** actions, like clicking a button

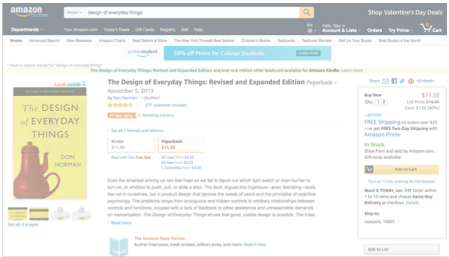
Payment Information

The credit card number is invalid.

Card Number *

1234123412341234

Mid-level actions, like filling out a form



High-level actions, like buying a book

Feedback:

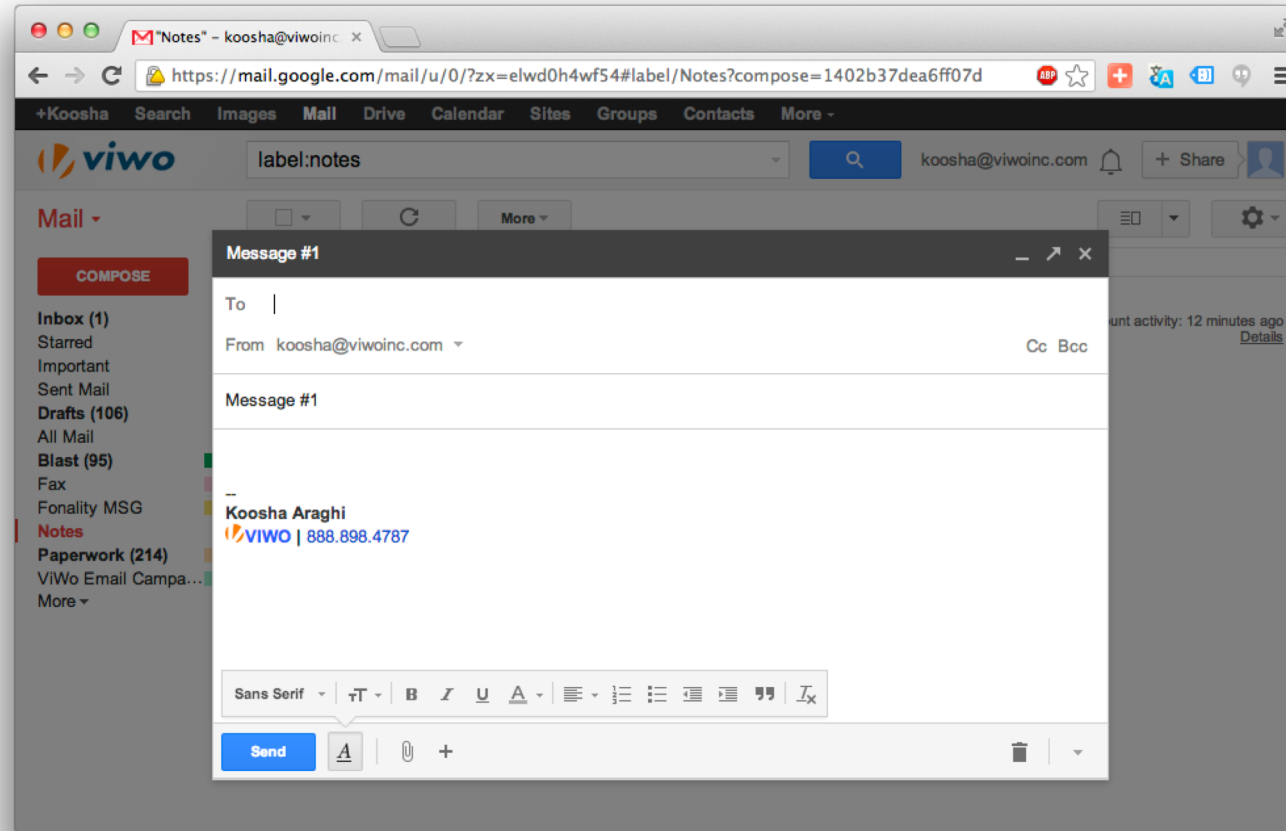
Communicate

full and continuous information about
the results of an action and

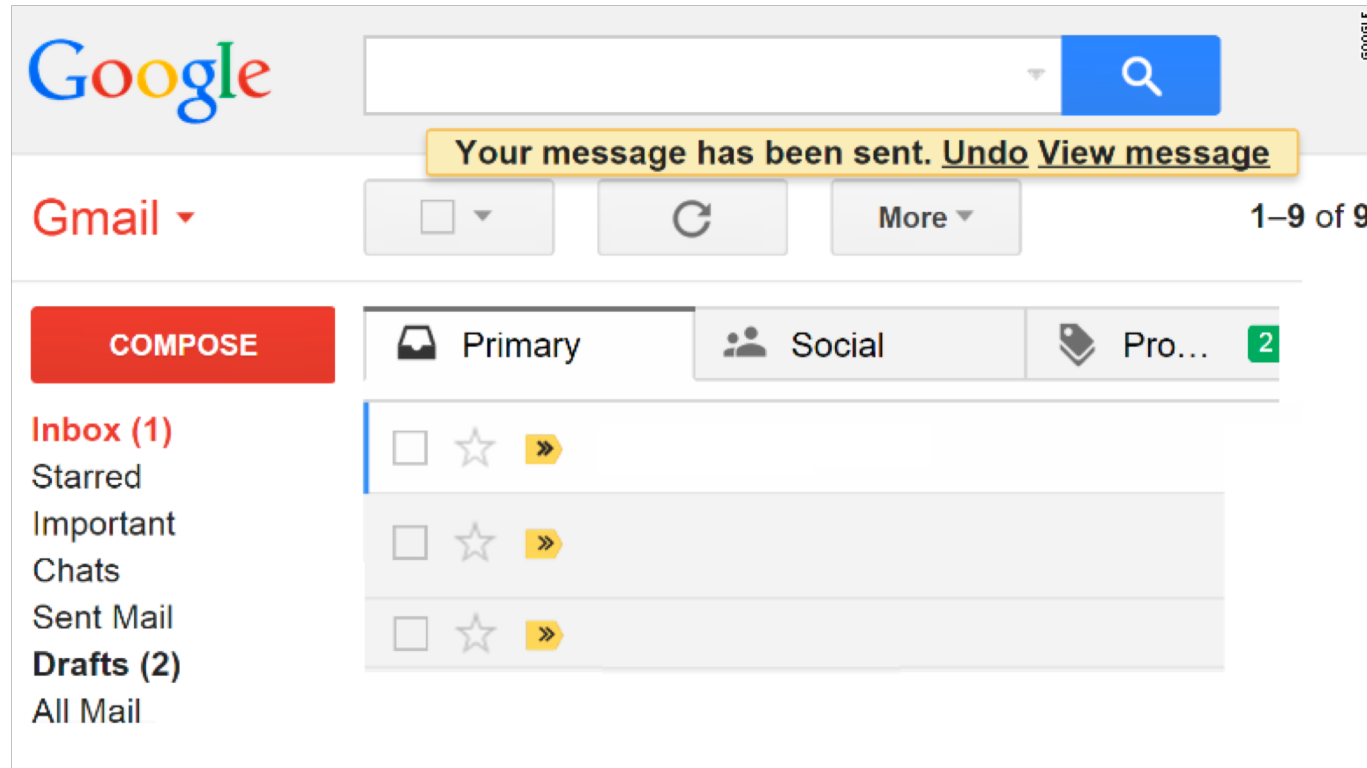
the **current state of the system**

to help people achieve their goal

What is the new state?



What is the new state?



What is the new state?

Submit Credit Card Payment

Order Summary

Total

\$412.97

Items

Description	Category	Qty	Unit Price	Amount
Mobile device for demos	Hardware	2	\$150.00	\$300.00
Video software upgrade	Software	1	\$50.99	\$50.99
Device accessories	Miscellaneous	2	\$30.99	\$61.98
			Total	\$412.97

5 items

Payment Information

The credit card number is invalid.

Card Number *

1234123412341234

Expiration Date *

1220

CCV *

999

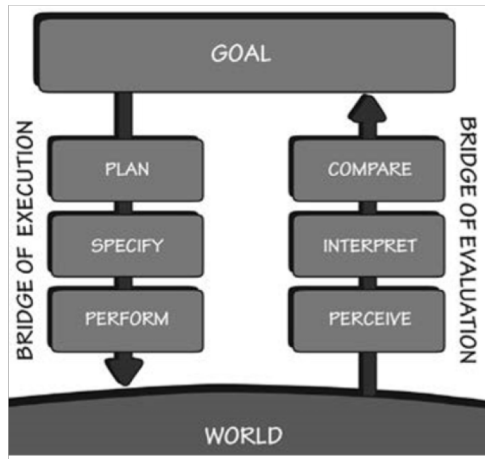
PLACE YOUR ORDER

Credit card transactions are handled by our secure payment processor. We do not store your credit card information.

When you click the 'Place Your Order' button, we'll send you an email message acknowledging receipt of your order. Your contract to purchase an item will not be complete until we send you an email notifying you that the item has been shipped.

CONTINUE

Every time the user executes an action, the interface should provide feedback

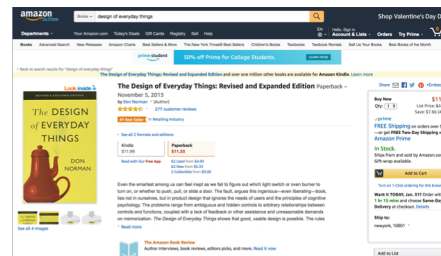


Low-level physical actions, like pressing a key

This image shows two parts of a web interface. The top part is a red button with the word **COMPOSE** in white capital letters. Below it is a 'Payment Information' section. It contains a red error message: 'The credit card number is invalid.' Below this, there are three input fields: 'Card Number *' (containing '1234123412341234'), 'Expiration Date *' (containing '1220'), and 'CCV *' (containing '999'). A blue button labeled 'PLACE YOUR ORDER' is at the bottom right of the form.

Low-level virtual actions, like clicking a button

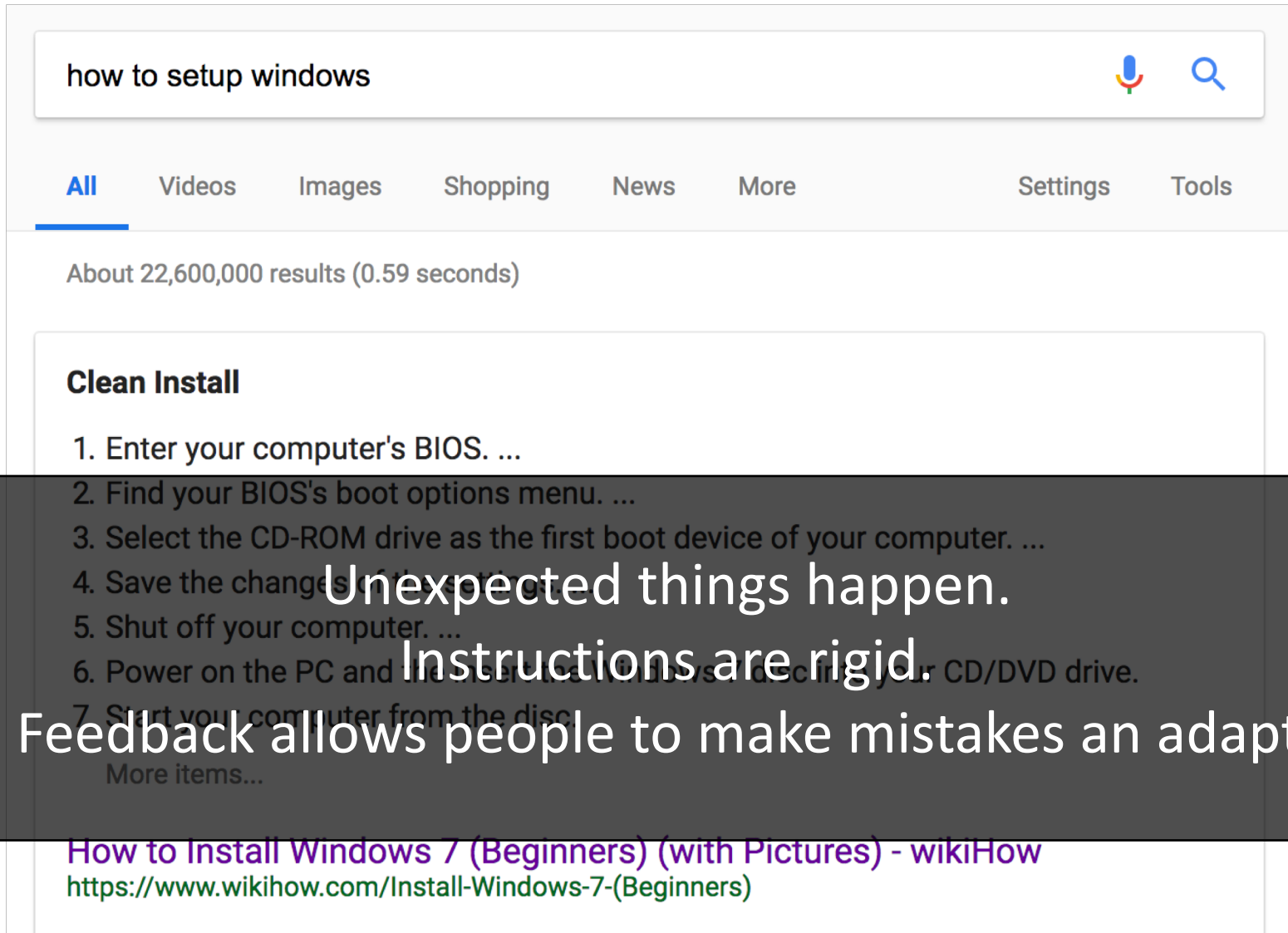
Mid-level actions, like filling out a form



High-level actions, like buying a book

Final Thought on Feedback

Following instructions sux. Why?



how to setup windows

All Videos Images Shopping News More Settings Tools

About 22,600,000 results (0.59 seconds)

Clean Install

1. Enter your computer's BIOS. ...
2. Find your BIOS's boot options menu. ...
3. Select the CD-ROM drive as the first boot device of your computer. ...
4. Save the changes in the settings.
5. Shut off your computer. ...
6. Power on the PC and let it install Windows 7. Use the CD/DVD drive.
7. Start your computer from the disc.

More items...

[How to Install Windows 7 \(Beginners\) \(with Pictures\) - wikiHow](https://www.wikihow.com/Install-Windows-7-(Beginners))
[https://www.wikihow.com/Install-Windows-7-\(Beginners\)](https://www.wikihow.com/Install-Windows-7-(Beginners))

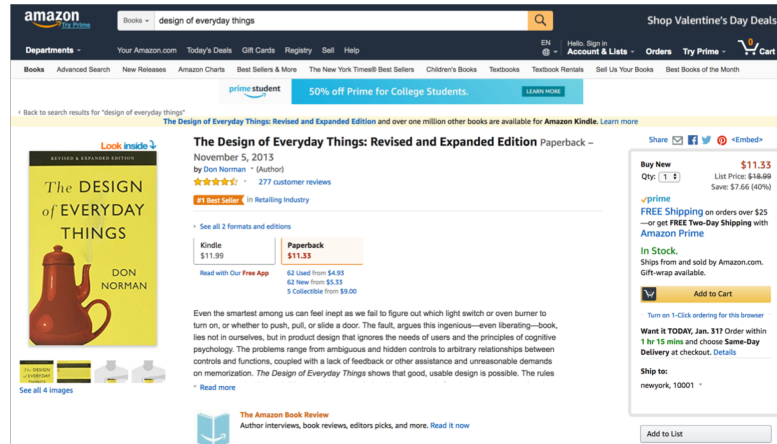
Unexpected things happen.

Instructions are rigid.

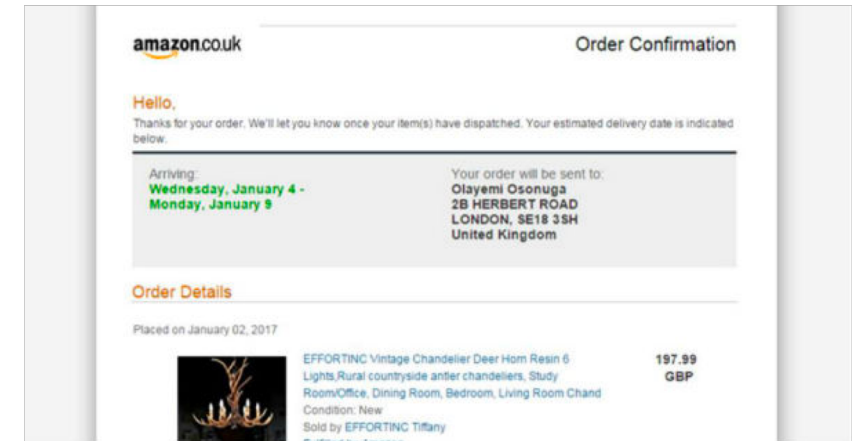
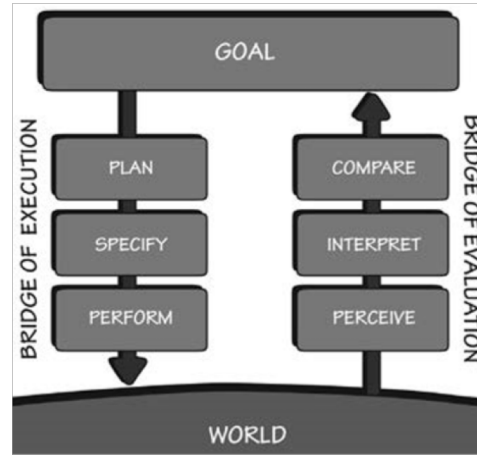
Feedback allows people to make mistakes and adapt.

Summary

Feedback helps users evaluate the result of an action

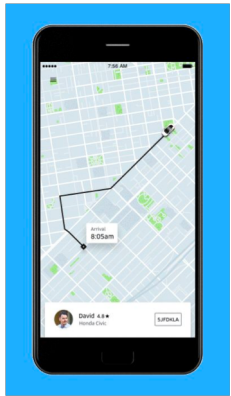


The image shows the Amazon product page for the book "The Design of Everyday Things: Revised and Expanded Edition" by Don Norman. The page includes the Amazon logo, search bar, navigation links, and product details. The book is priced at \$11.33 (down from \$14.99) and has 277 customer reviews. It is available in Kindle and Paperback formats. The Paperback is priced at \$11.33 (down from \$14.99) and is marked as a "Best Seller" in the Retailing Industry. The page also features a "Look inside" button and a "Read with Our Free App" button. The description highlights the book's focus on product design, user needs, and the importance of feedback in the design process.



The image shows the Amazon.co.uk Order Confirmation page. It includes the Amazon.co.uk logo, the text "Order Confirmation", and a greeting "Hello,". Below the greeting, it says "Thanks for your order. We'll let you know once your item(s) have dispatched. Your estimated delivery date is indicated below." The page displays the arrival date "Wednesday, January 4 - Monday, January 9" and the shipping address "Your order will be sent to: Olayemi Osonuga, 28 HERBERT ROAD, LONDON, SE18 3SH, United Kingdom". The order details section shows the item "EFFORTINC Vintage Chandelier Deer Horn Resin 6 Lights Rural countryside antler chandeliers, Study Room/Office, Dining Room, Bedroom, Living Room Chand" with a price of "197.99 GBP". The order was placed on January 02, 2017.

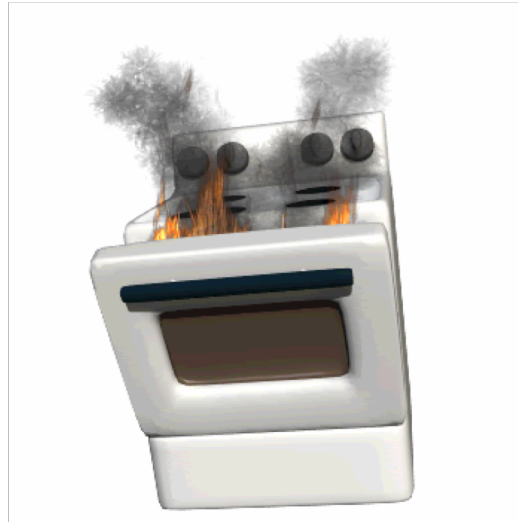
The human nervous system is designed to perceive feedback in many forms.



Sight



Sound

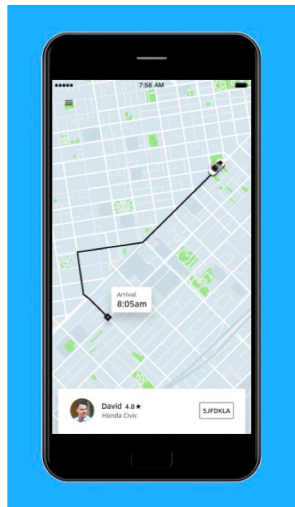


Smell



Touch

Design feedback that:
Communicates
full and continuous information about the
results of an action and the
current state of the system
to help people achieve their goal



Payment Information

The credit card number is invalid.

Card Number *

1234123412341234

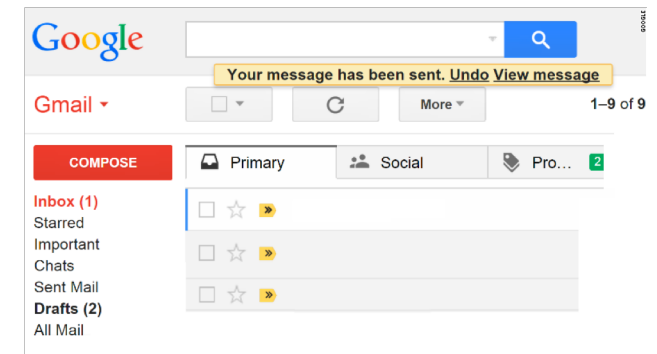
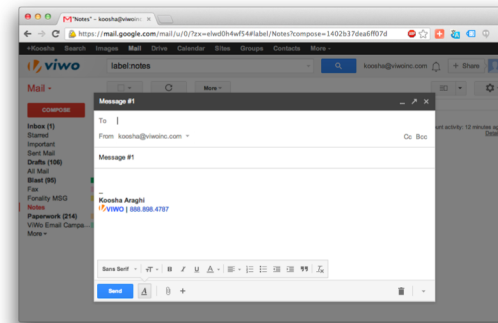
Expiration Date *

1220

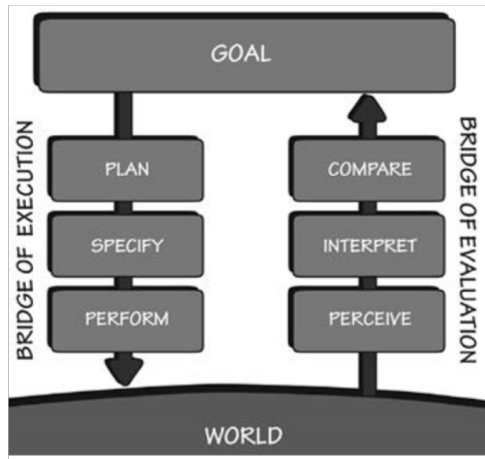
CCV *

999

PLACE YOUR ORDER



Every time the user executes an action, the interface should provide feedback

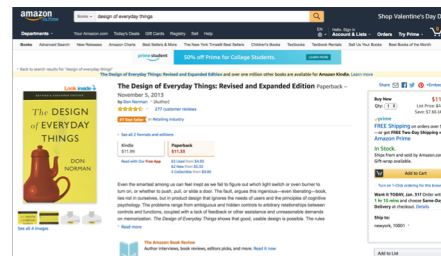


Low-level physical actions, like pressing a key

A screenshot of a web form titled **COMPOSE** with a red header. Below the header is a section titled **Payment Information**. A red error message states: "The credit card number is invalid." The form includes input fields for **Card Number *** (containing "1234123412341234"), **Expiration Date *** (with "1220" entered), and **CCV *** (with "999" entered). A blue button labeled **PLACE YOUR ORDER** is at the bottom right.

Low-level virtual actions, like clicking a button

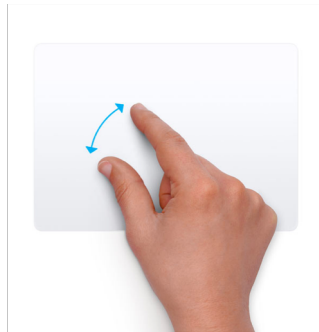
Mid-level actions, like filling out a form



High-level actions, like buying a book

Low-level virtual actions are represented in the system as **events**.

Action



Event

Keypress event

Mousemove event

Mousepress event

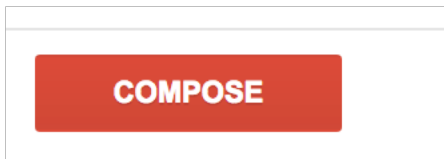
Pinch gesture event

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



Click!
Depress!

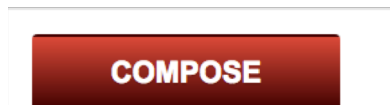
Normal state



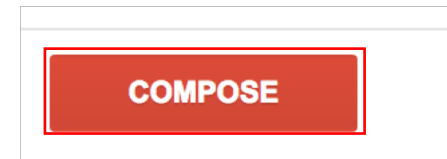
Mouseover



Mousedown



Mouseup



Normal state

