Events and Feedback

No screens

Prof. Lydia Chilton
COMS 4170
7 February 2018

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**?

Users are **confused** about whether their goal has been achieved, and they continue to **expend energy** to accomplish the goal.
What goes wrong when you provide too little feedback?

Users know something has happened, but they don’t know what. They must expend energy to find out what happened and what to do.
What goes wrong when you provide too little feedback?

Users know something has happened, but they don’t know what. They must expend energy to find 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

When there is too much feedback,
*Some of the feedback* is not important to the users goal and they may **ignore all the feedback**.
What goes wrong when feedback too late?

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

Users assume that no feedback means no action
And they find another way to accomplish the goal.
What goes wrong when feedback is not continuous?

Users have to poll the system for feedback frequently.
What goes wrong when feedback acknowledges the action but does not communicate the new state?

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.
How do we perceive this feedback?

Submit Credit Card Payment

Order Summary

<table>
<thead>
<tr>
<th>Description</th>
<th>Category</th>
<th>Qty</th>
<th>Unit Price</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile device for demos</td>
<td>Hardware</td>
<td>2</td>
<td>$150.00</td>
<td>$300.00</td>
</tr>
<tr>
<td>Video software upgrade</td>
<td>Software</td>
<td>1</td>
<td>$50.99</td>
<td>$50.99</td>
</tr>
<tr>
<td>Device accessories</td>
<td>Miscellaneous</td>
<td>2</td>
<td>$30.99</td>
<td>$61.98</td>
</tr>
</tbody>
</table>

Total: $412.97

Items

Payment Information

Card Number: 1234123412341234
Expiration Date: 1220
CCV: 999

Information incorrect

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.
How do we perceive this feedback?
How do we perceive this feedback?
The human nervous system is designed to perceive feedback in many forms.

Sight

Sound

Smell

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

<table>
<thead>
<tr>
<th>Action</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keypress</td>
<td>Keypress event</td>
</tr>
<tr>
<td>Mousemove</td>
<td>Mousemove event</td>
</tr>
<tr>
<td>Mousepress</td>
<td>Mousepress event</td>
</tr>
<tr>
<td>Pinch</td>
<td>Pinch gesture event</td>
</tr>
</tbody>
</table>
Physical Input Events and Feedback
Keypress event feedback?
Soft Keypress event feedback?
Keydown event feedback?
Keyup event feedback?
Mousemove event feedback?
Mousedown event feedback?
Low-level Events and Feedback
Button click event feedback

Normal state

.T-I-KE {
  background-color: #f14836;
}

COMPOSE
Button click event feedback

Normal state

Mouseover feedback

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

```css
.T-I-KE.T-I-JW {
  background-color: #c53727;
}
```
Button click event feedback

Normal state

Mouseover feedback

Mousedown feedback

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

.T-I-KE.T-I-JW {
  background-color: #c53727;
}

background-image: linear-gradient(to bottom, #dd4b39, #400000);
Button click event feedback

Normal state

mouseover feedback

mousedown feedback

mouseup feedback
How do you implement visual feedback?

**Normal state**

1. Register an event handler on the object

1. Change the style

**Mousedown**

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

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

```
$(document).ready(function()
{
    $('#compose_button').mousedown(function()
    {
        // ?????????
    });
});
```
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, #dd4b38, #400000);
}
```

Will this work to change the style?

```javascript
$(document).ready(function(){
  $('#compose_button').mousedown(function(){
    $(this).css("background-image", "linear-gradient(to bottom, #dd4b38, #400000")
  })
})
```
How do you implement visual feedback?

Normal state

Mousedown

This way is better. Why?

```javascript
$(document).ready(function(){
    $('#compose_button').mousedown(function(){
        //$(this).css("background-image", "linear-gradient(to bottom, #dd4b38, #400000")
        $(this).addClass("compose_press_state")
    })
})
```
Mid-and High-level Action Feedback
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 action is this the result of?
What is the new state?
What action is this the result of?
What is the new state?
What action is this the result of?
What is the new state?
How does it help the user accomplish their goal?
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
Even input events and low-level events have full and continuous feedback about actions and states.
Final Thought on Feedback
Learning and interacting with systems like this sux. Why?
Summary
Feedback helps evaluate the result of an action
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.
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
Low-level user actions are represented in the system as **events**.

<table>
<thead>
<tr>
<th>Action</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keypress</td>
<td>Keypress event</td>
</tr>
<tr>
<td>Mousemove</td>
<td>Mousemove event</td>
</tr>
<tr>
<td>Mousepress</td>
<td>Mousepress event</td>
</tr>
<tr>
<td>Pinch gesture</td>
<td>Pinch gesture event</td>
</tr>
</tbody>
</table>
Even low-level events have full and continuous feedback about actions and states.