

Professors d'IDI - UPC

Interacció i Disseny d'Interfícies

INDI – Organització

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- Avaluació:
 - Test teòric a la prova final
 - Projecte d'usabilitat.
- Programari pel projecte
 - Balsamiq
 - Azure XP (recordeu demanar llicència d'estudiant!)

INDI – Organització

■ Temari de teoria

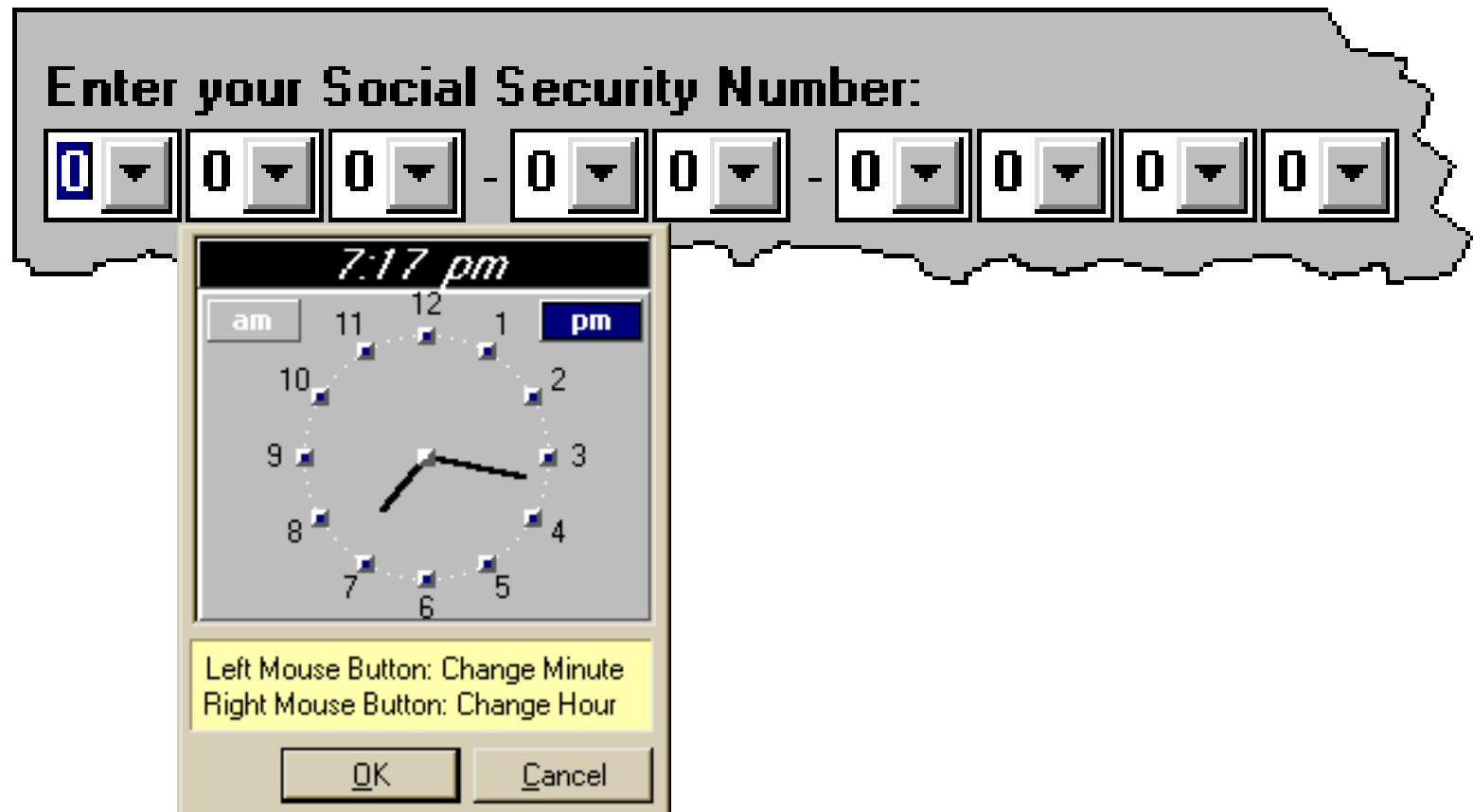
- Introducció a la HCI i principis usabilitat. (1 sessió)
- Principis generals de disseny. Percepció i color (1 sessió)
- Maquetes i prototipatge. (1 sessió)
- Interacció (2 sessions)
 - Lleis de Hicks, Fitts...
 - Sistemes i mètodes interacció i selecció. Usabilitat mòbil.
- Usability testing. Mètodes quantitativs per experiments (1 sessió)
- ~~■ Estudis d'usabilitat. (1 sessió)~~

Continguts

- Apunts i transparències de suport
- Referències útils a la web:
 - <http://usability.gov>
 - <http://uxbooth.com>
 - <https://usabilitygeek.com>
 - <http://www.nngroup.com/articles/>
 - <http://www.interaction-design.org/encyclopedia/>
 - <https://uxdesign.cc/>
 - <http://uxplanet.org/>

Motivation

Well-designed user interfaces should ease our user experience. But it is not uncommon to find “creative” interfaces that make things “funny”:



Lifting our motivation

Wow, this lift goes sideways!



Wait a sec...



Even more motivation



CANADIAN CARDHOLDERS
FOR USABLE ZIP CODE

USE THE 3 NUMBERS FROM YOUR
CARDS BILLING POSTAL CODE
AND ADD 2 ZERO'S

*EXAMPLE YOUR CARDS BILLING
POSTAL CODE - A3C2B4
USABLE ZIP CODE - 32400

Definitions: HCI

- What does HCI mean? Which are its objectives?
 - **Human computer interaction** is a field that deals with the study (to improve) of how humans interact with machines/devices.
 - HCI is a very relevant issue when evaluating the quality of an application.
 - An application must fulfill its requirements,
 - It has to provide an easy access to its features.

Definitions: UI

- When an application is difficult to use, it is perceived as a low-quality application.
 - **User Interfaces:** tools and methods that are used to communicate between the user and the system
 - **User Interfaces** may be determinant on ease of use perception of application

Definitions

- HCI is about
 - *understanding and critically evaluating the interactive technologies people use and experience*
 - understanding contemporary human practices and aspirations

HCI. Initial models

- Software crisis in the 70s lead to focus software engineering with a new view
 - Including non functional requirements such as usability and maintainability

HCI. Initial models

- One of the original focus of HCI was *usability*.
 - Originally stated as "easy to learn, easy to use"
 - More on this later today...
 - GUI: **comprehensible, accessible, easy to use**
- Helped to influence computer science and technology development more broadly and effectively
- It grew to include other areas, not restricted to computer science

Usability

- Usability: Defined in ISO 9241 standard as
 - The ability in which a product may be used by **specific** users in order to carry out **specific** tasks *effectively, efficiently, and with satisfaction* in a **specific** use environment.
 - Usability is always referred to a concrete user group and a concrete user application

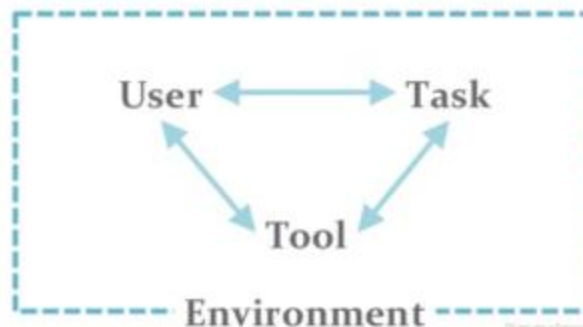


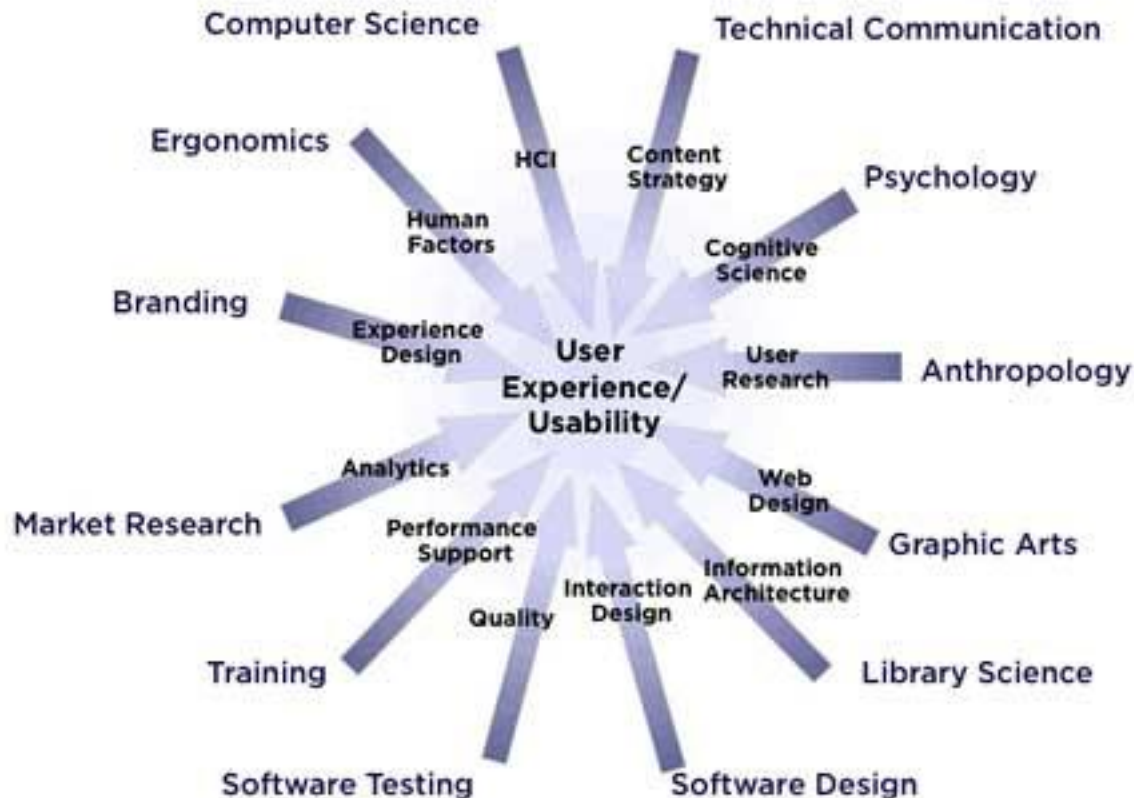
Diagram adapted from Shneiderman, 1991

Usability

- Usability:
 - **Efficacy** is the ability of correctly and completely achieving a certain goal.
 - **Efficiency** is the relation of used resources and the completeness and correctness of achieved goals.
 - **Satisfaction** is the comfort and acceptation of a system by the users and other people that are affected by its use.



HCI and its neighborhood



Definitions

- **User experience (UX):**
 - “Experience or User Experience is not about technology, industrial design, or interfaces. It is about **creating a meaningful experience through a device.**”
 - “the perception left in someone's mind following a series of interactions between people, **devices**, and events”
 - What you **remember and feel** from the use of a device

User Experience

- UX is an outcome





User Experience


- UX...is a full time job!

UX en Barcelona, Cataluña, Esp...
723 resultados


Alerta de empleo
desactivada





UX Lead - Research
Ocado Technology
Barcelona, Cataluña, España
 47 antiguos alumnos trabajan aquí
Promocionado • 5 solicitudes




User Interaction Designer (IX)
Nacar Design
Sant Cugat del Vallès, Cataluña, España

Promocionado •  Solicitud sencilla





UX Lead Designer
B-Reel
Barcelona, Cataluña, España
 1 antiguo empleado trabaja aquí
Promocionado • 8 solicitudes




UX Lead - Research
Barcelona, Cataluña, España

Hace 5 días • 1 solicitud



UX Engineer
Wolters Kluwer
Barcelona, Cataluña, España
 5 antiguos alumnos trabajan aquí
Hace 6 días • 11 solicitudes

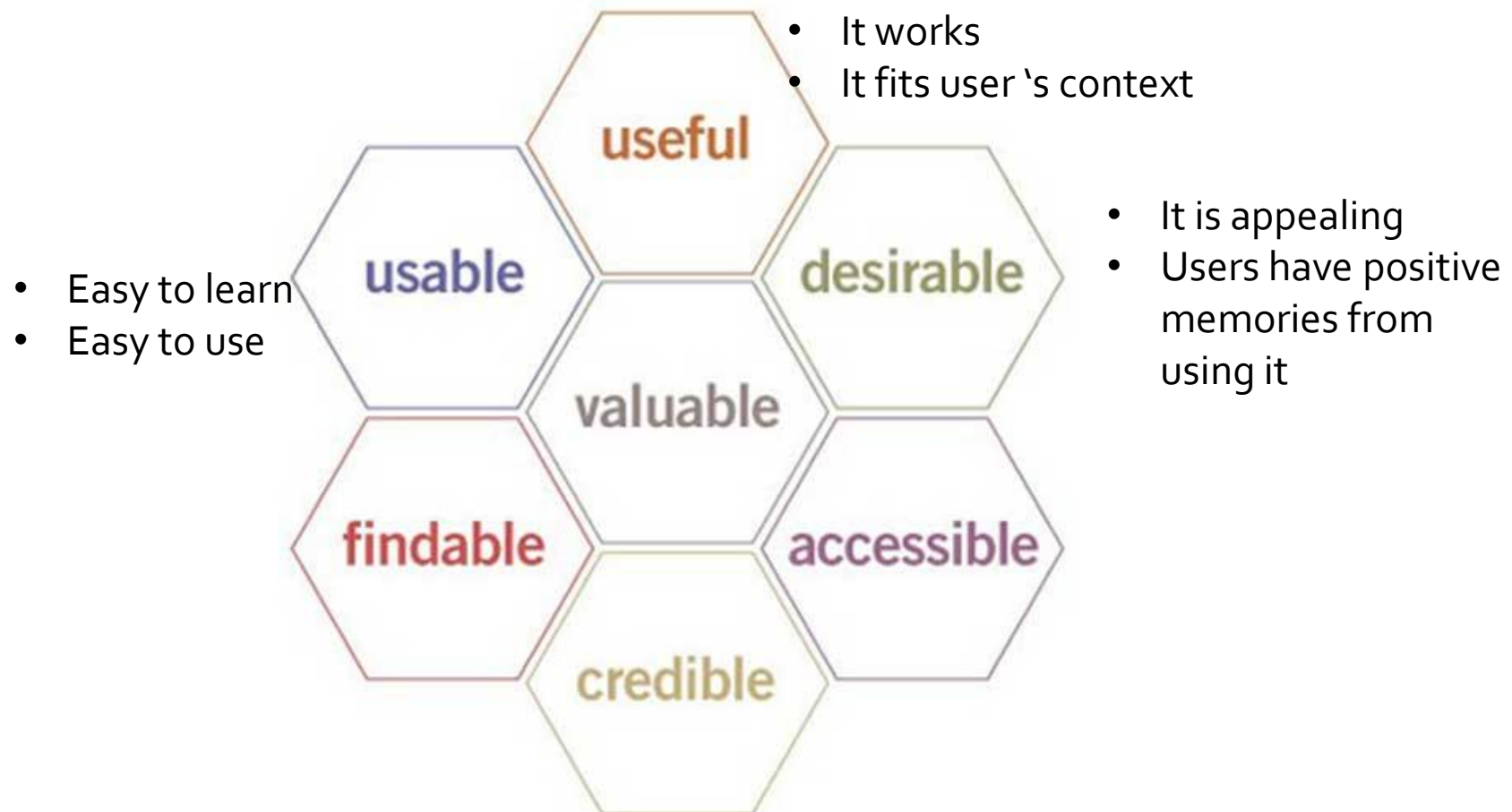


User Experience Designer
Digital Hamster
Barcelona, Cataluña, España

Promocionado

User Experience

■ User experience (Peter Morville's honeycomb):



Don't forget...

- UI design and UX design are different

What is the difference between UI & UX you ask? ...



Definitions

- Interaction Design:
 - “Interaction design is about shaping digital things for people’s use”
 - How we interact with **devices** (“digital things”)



Definitions

- Interaction Design:
 - Unlock with your face?



This Is Why the iPhone's Screen Will Always Be 3.5 Inches

Why does the iPhone have a 3.5-inch screen? Why do larger smartphones feel awkward on your hand? Dustin Curtis has an answer, and I think it is spot on:

Touching the upper right corner of the screen on the Galaxy S II using one hand, with its 4.27-inch screen, while you're walking down the street looking at Google Maps, is extremely difficult and frustrating. I pulled out my iPhone 4 to do a quick test, and it turns out that when you hold the iPhone in your left hand and articulate your thumb, you can reach almost exactly to the other side of the screen.

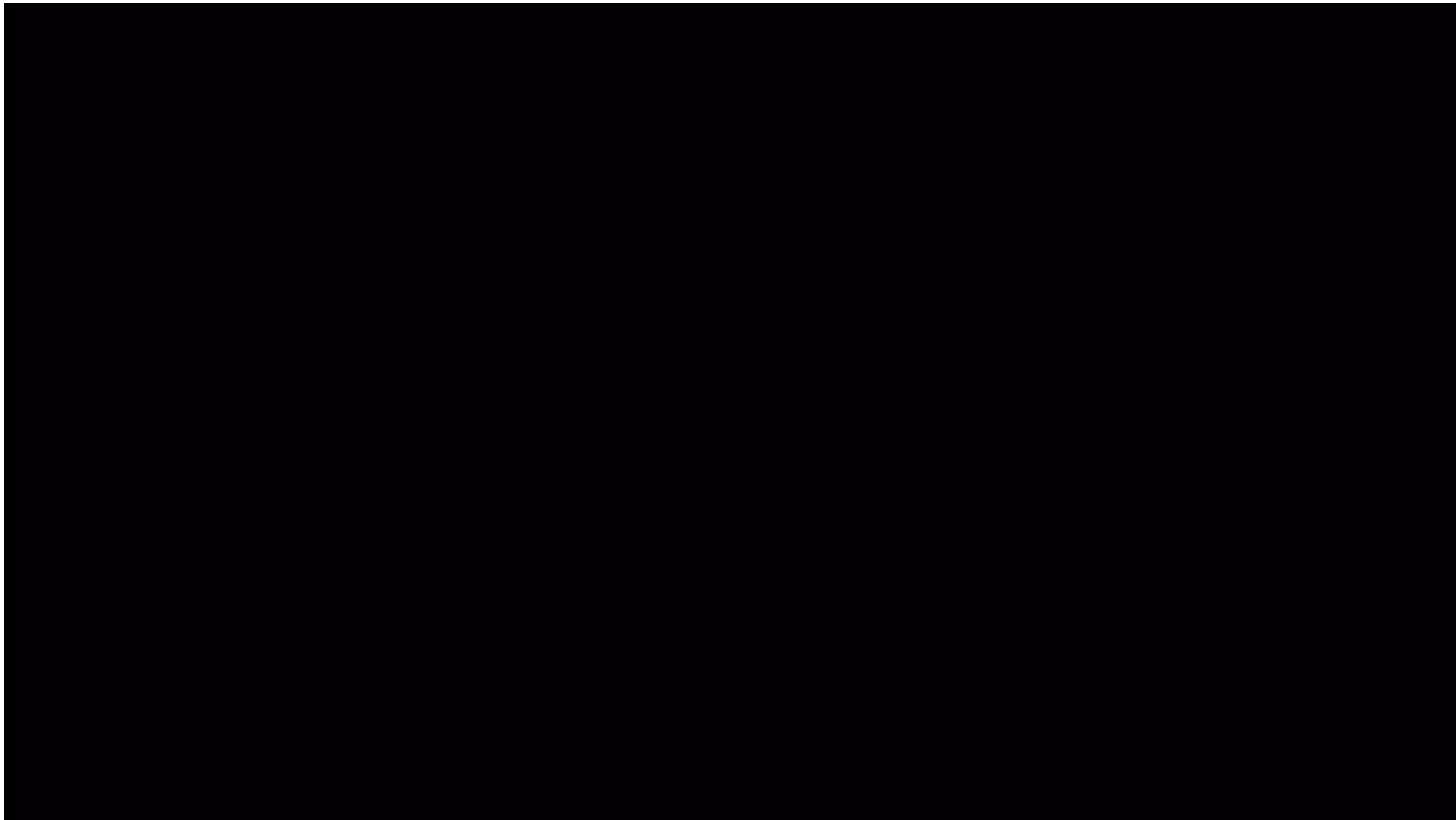
His graphic shows this clearly. It makes total sense. And that is exactly why we would never see any larger screen iPhone. That 3.5-inch screen will be the ideal size until all humans are 7-feet tall and have hands the size of frying pans. [[dcurtis](#)]



HCI & UX. Some requirements

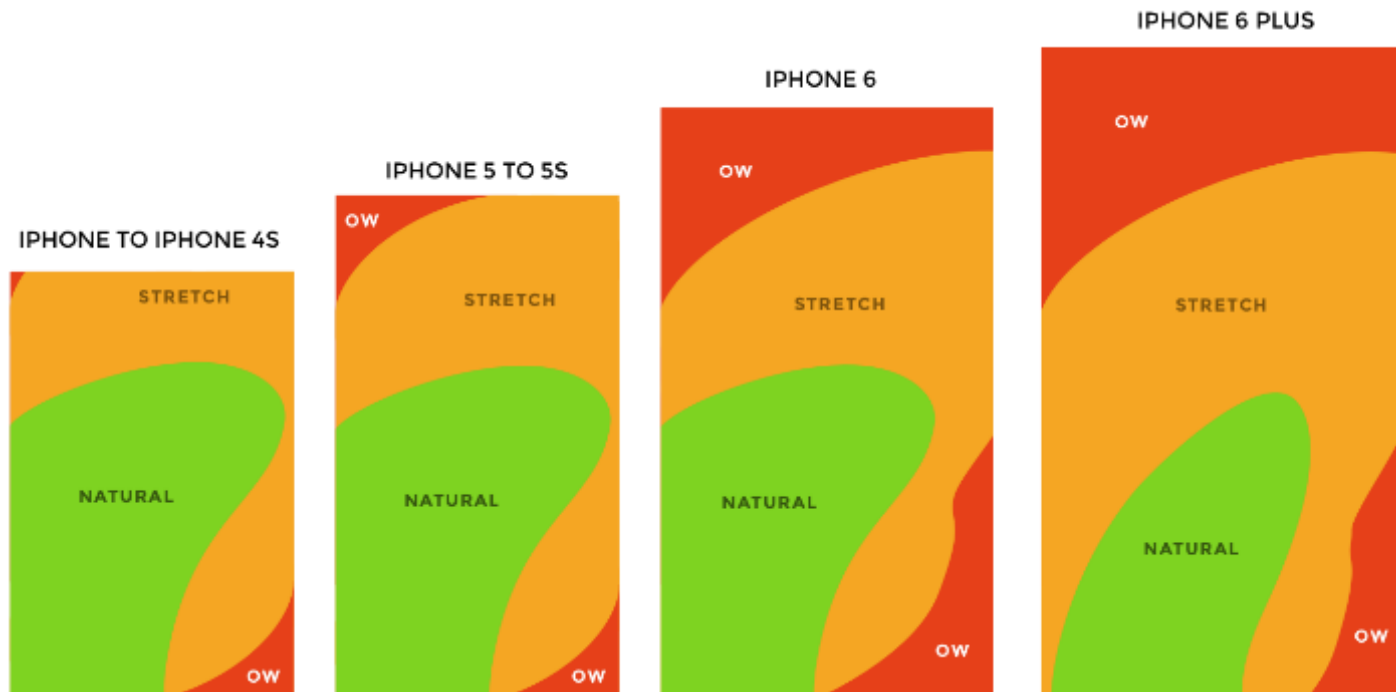
<https://www.youtube.com/watch?v=O9gm7lebirE>
https://www.youtube.com/watch?v=S4fbrq6xx_o

Ah! Too much marketing ?
Better invest on usability studies...



HCI & UX. Some requirements

- For mobile take into account the thumb zones



HCI. Desktop systems

- Desktop systems:
 - Large screens
 - Space for *everything*
 - Mouse pointer
 - Keyboard
 - Adequate for creating content

HCI. Mobile systems

- Mobile systems:
 - (Relatively) Small size
 - Must carefully think on what to fit
 - Notifications often not properly solved (Notifications and voice calls can be intrusive and disrupting)
 - Interaction with the finger/stylus
 - (Almost) No keyboard
 - Software limitations

HCI. Mobile systems

- Tablet systems:
 - (Relatively) Large size
 - May fit what we need
 - Interaction with the finger/stylus
 - (Almost) No keyboard
 - Software limitations

HCI. GUI (& app) Programming

- Tools for Mobile Development:
 - Native tools
 - Provided by the OS designers
 - Focus on the OS features
 - Cross-platform
 - Provided by third-party institutions
 - Focus on facilitating the development
 - Other third-party software
 - Focus on facilitating the development

HCI. GUI (& app) Programming

- Two main ways to develop:
 - Web apps
 - Native OS apps

HCI. GUI (& app) Programming

- **Web apps. Pros:**
 - Develop once & deploy everywhere
 - Almost any system has a capable browser
 - Easy updating
 - App is loaded everytime the browser connects to the page
 - Only needed to change the server code
 - Well-known tools and techniques
 - PHP, Java...

HCI. GUI (& app) Programming

- **Web apps. Cons:**
 - Limited user interfaces
 - Not as rich as native apps in terms of:
 - UI, Communication, Access to local resources (camera, GPS,...)
 - Inefficient and insecure communication protocol
 - Mainly designed for large displays with mouse

HCI. GUI (& app) Programming

- **Native apps. Pros:**
 - Richer UI
 - Many controls
 - Safe and fast access to local resources
 - GPS, camera, files...
 - Efficient communication
 - Any protocols allowed
 - Smaller variety in languages and tools (SDK)
 - Designed for small screens and touch controls

HCI. GUI (& app) Programming

- **Native apps. Cons:**

- **No universal access**

- Each OS has a different app format and development environment

- **Difficult to manage updates**

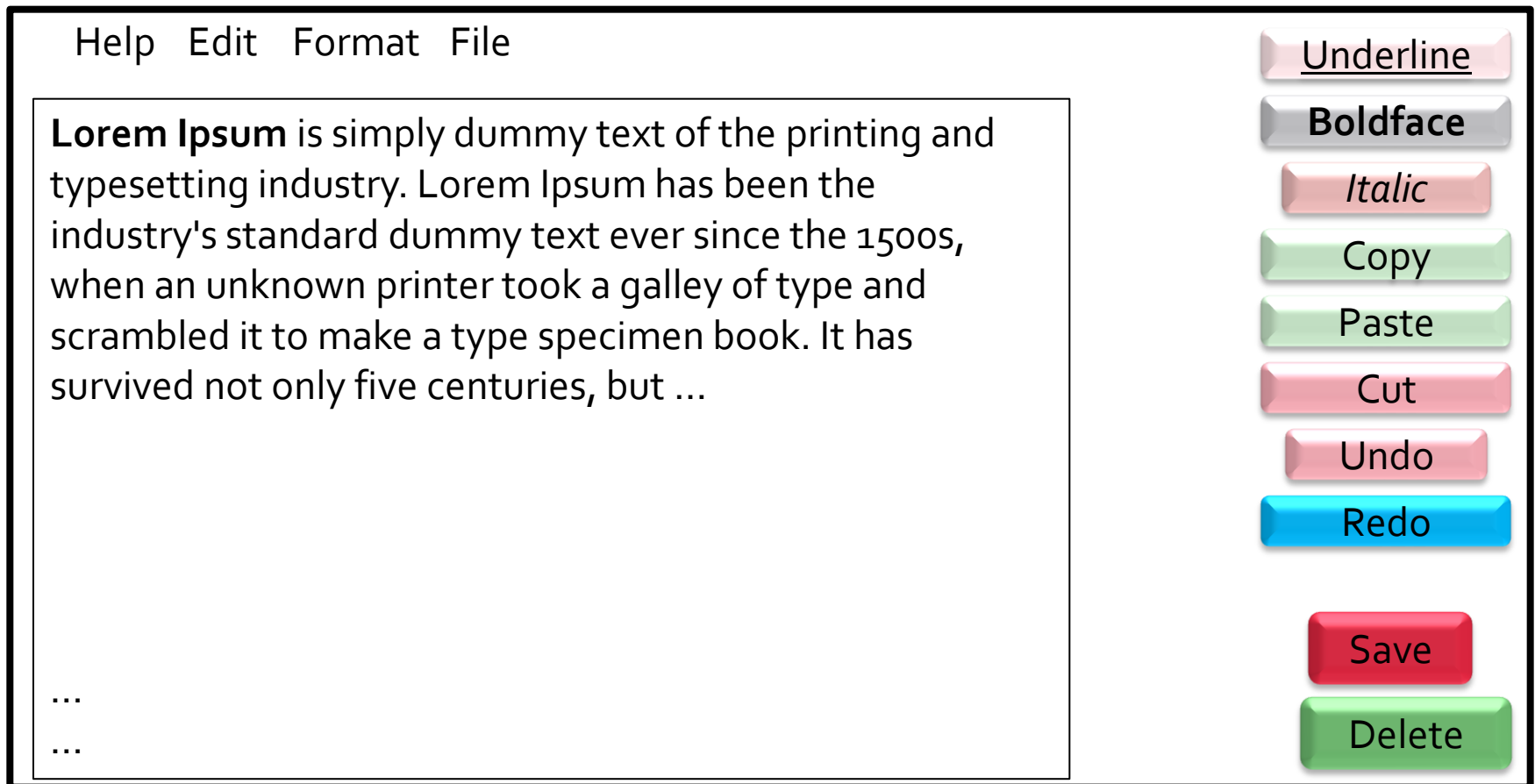
- Require individual (user guided) updates per device

- **Less general than desktop programming**

- Though a lot of new material is on the web

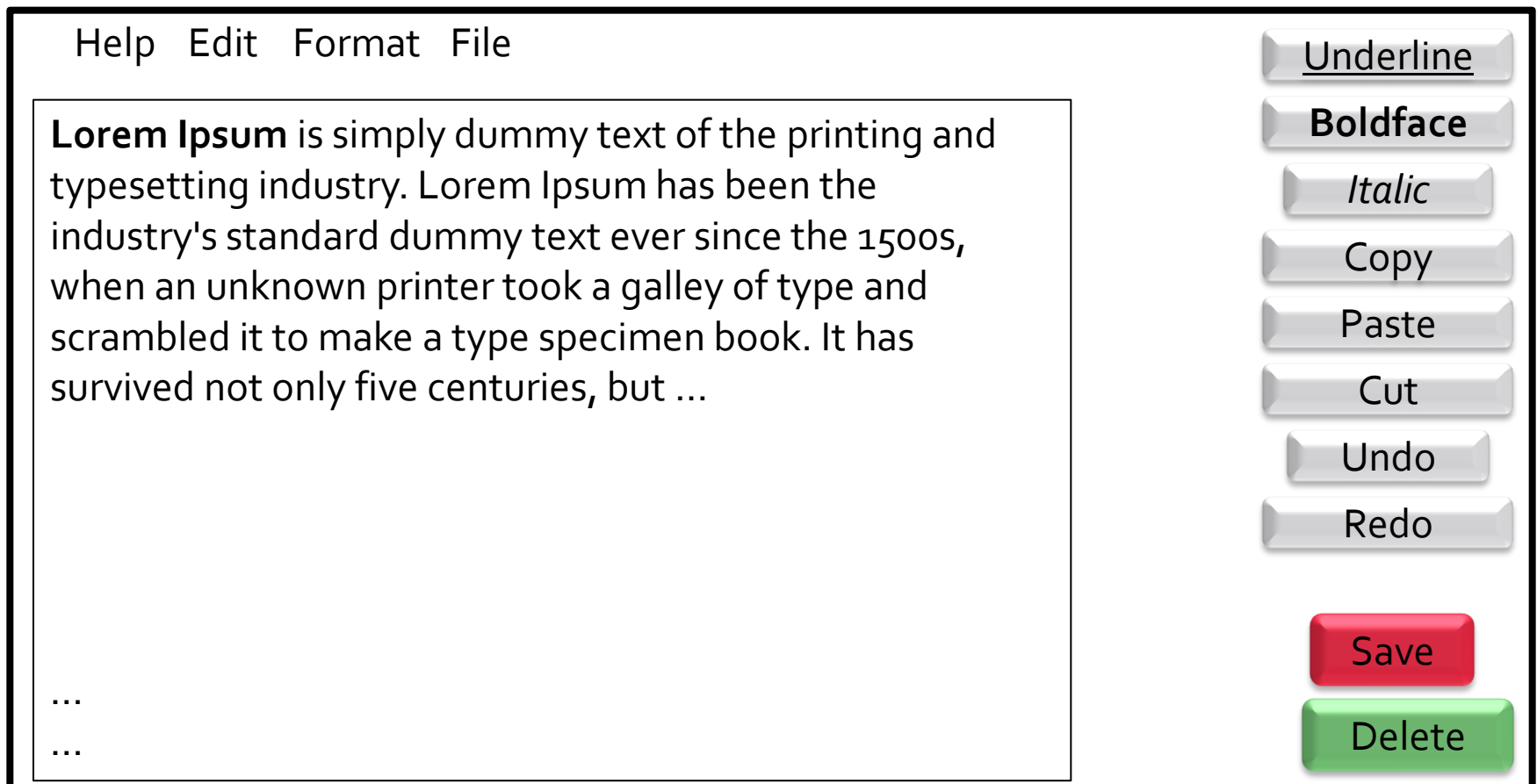
UI Example. Redesign

What's wrong with this simple text editor?



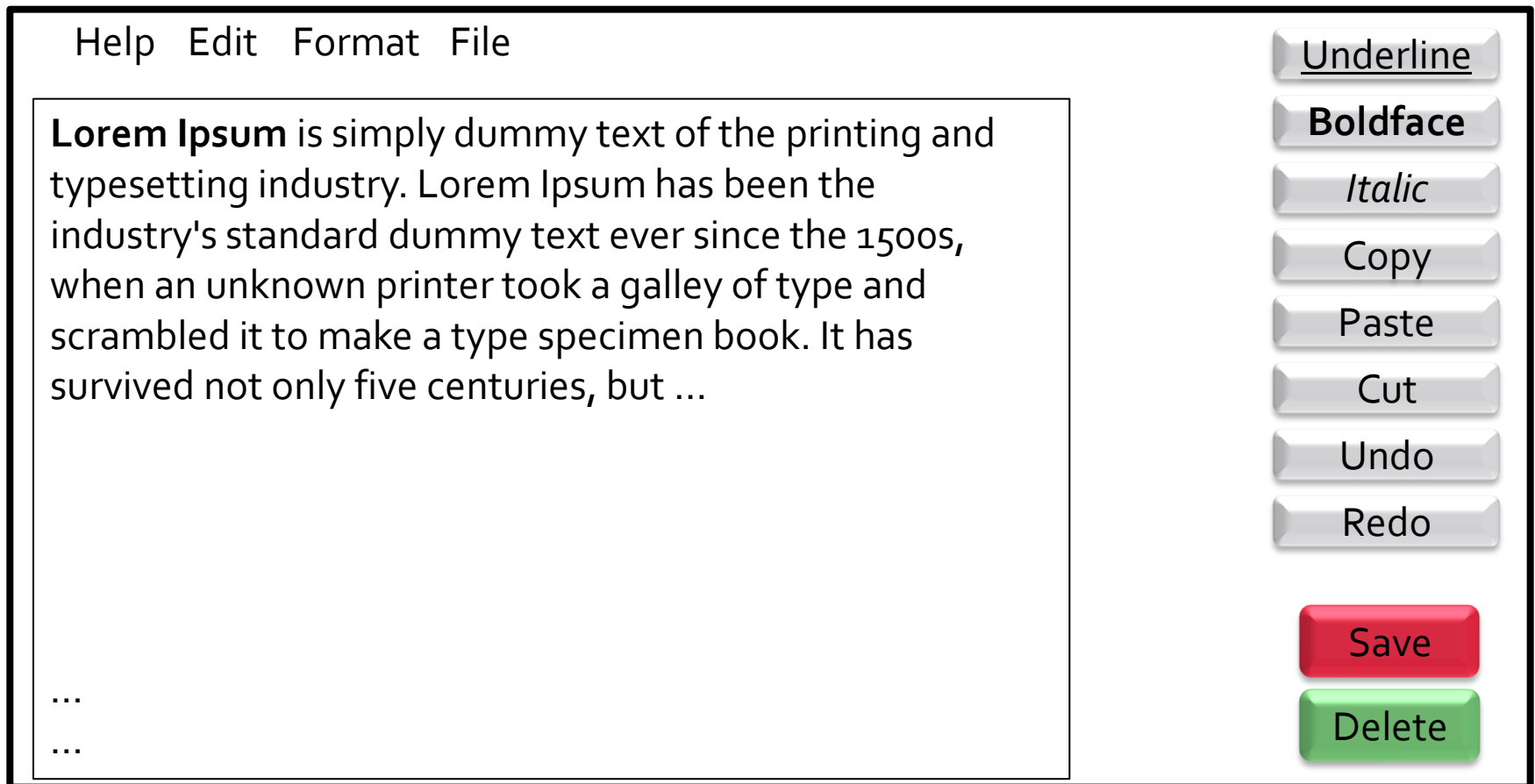
UI Example. Redesign

Too many colors!



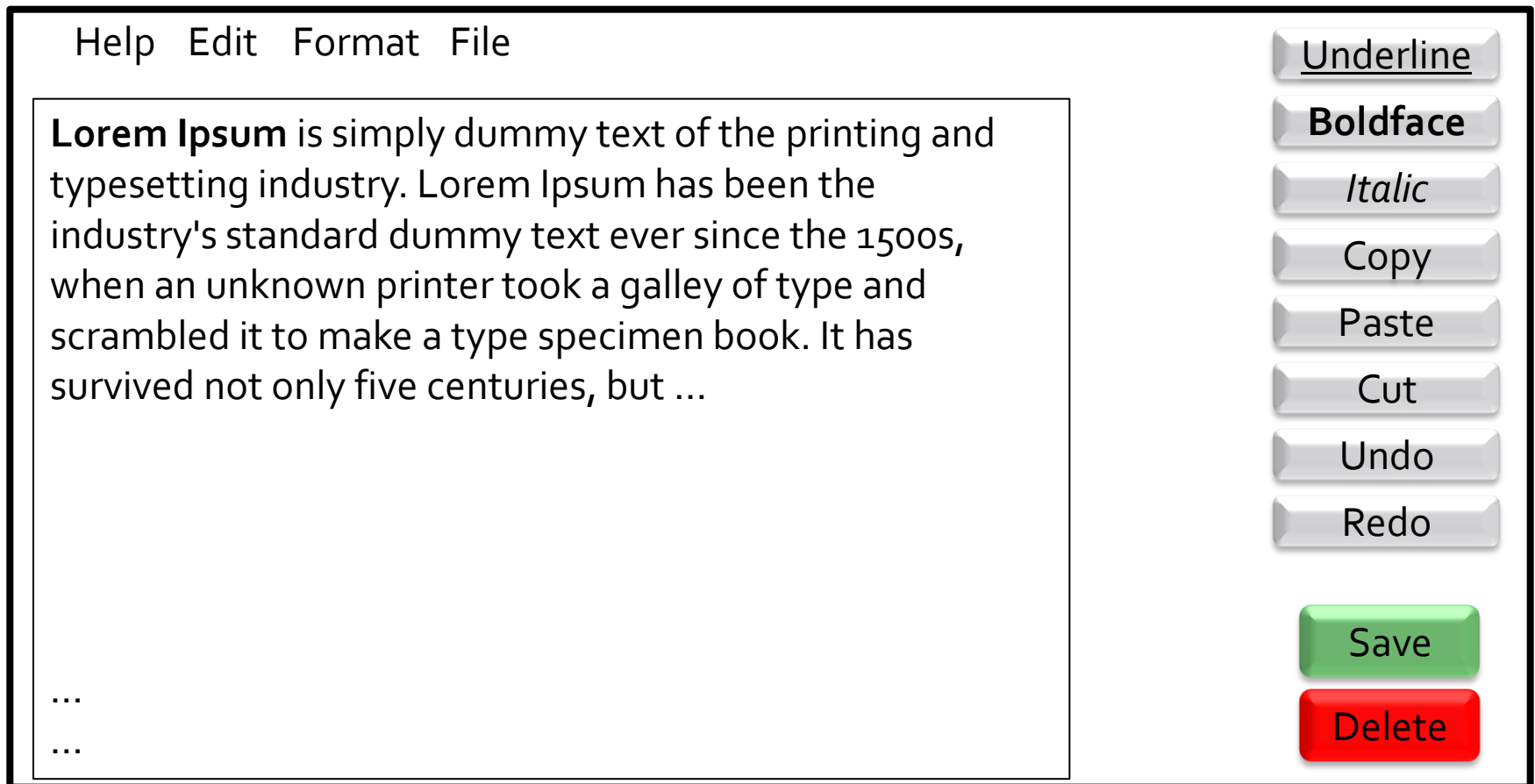
UI Example. Redesign

Inconsistent sizes & alignment



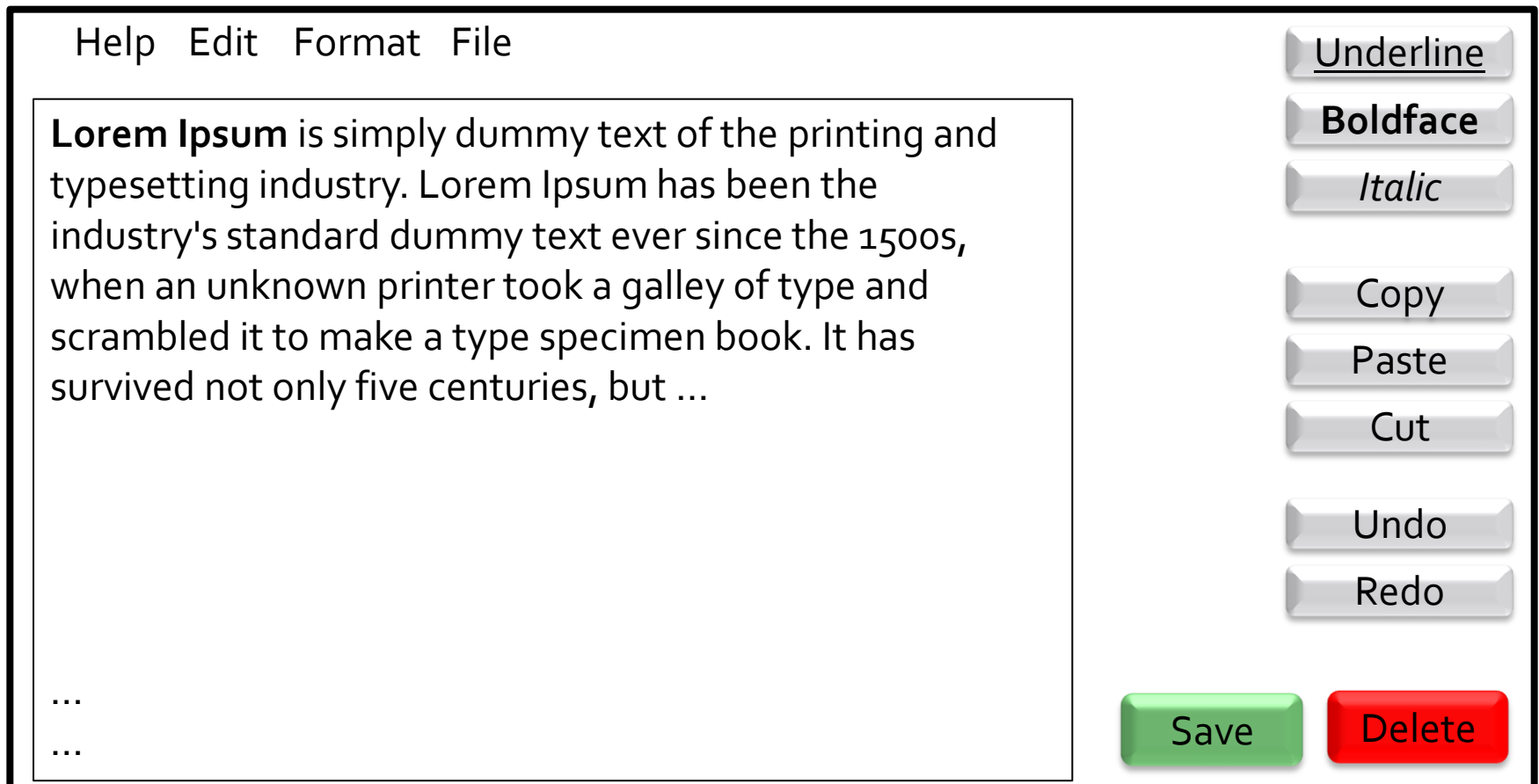
UI Example. Redesign

Colors inconsistent with past experience



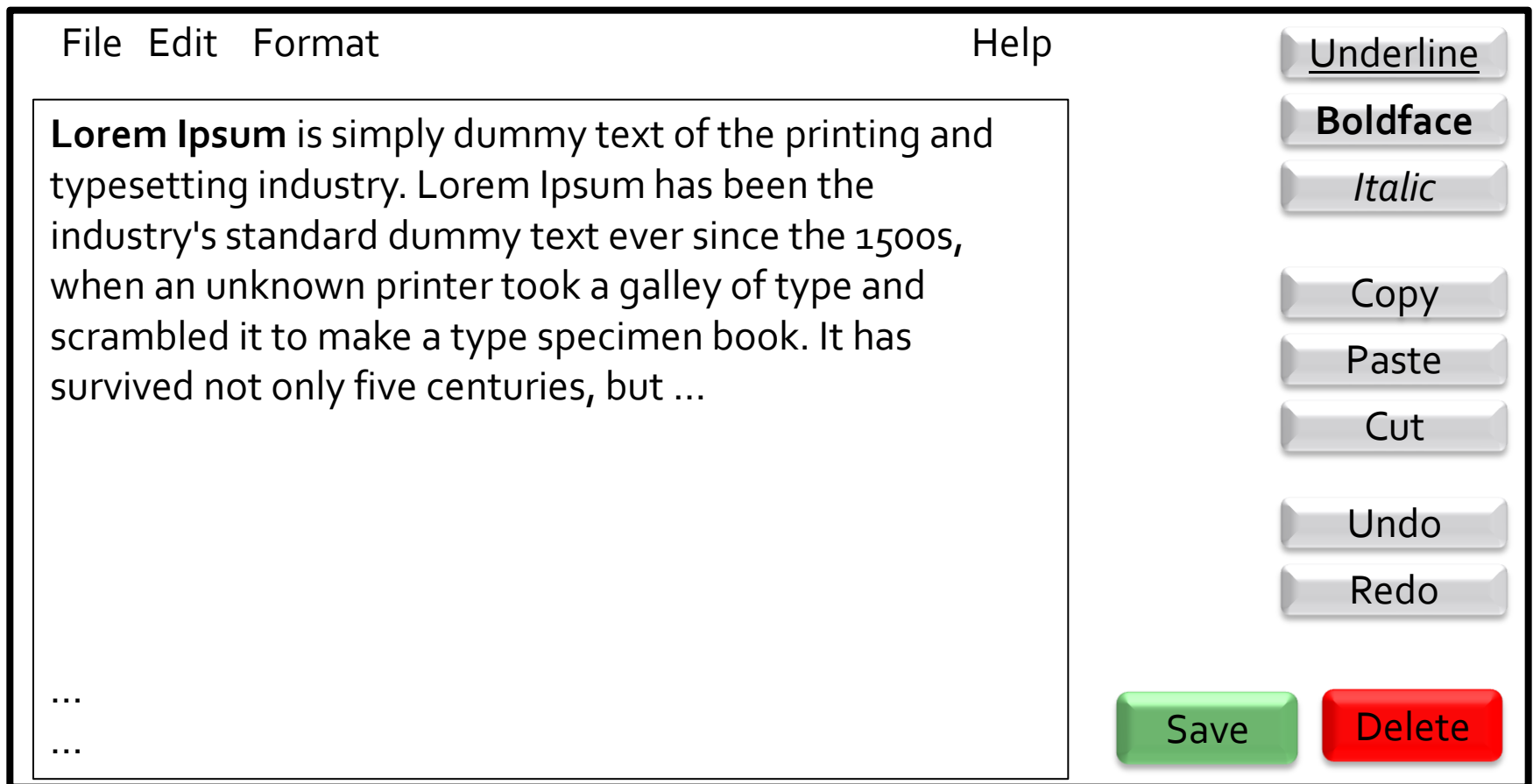
UI Example. Redesign

Semantic grouping



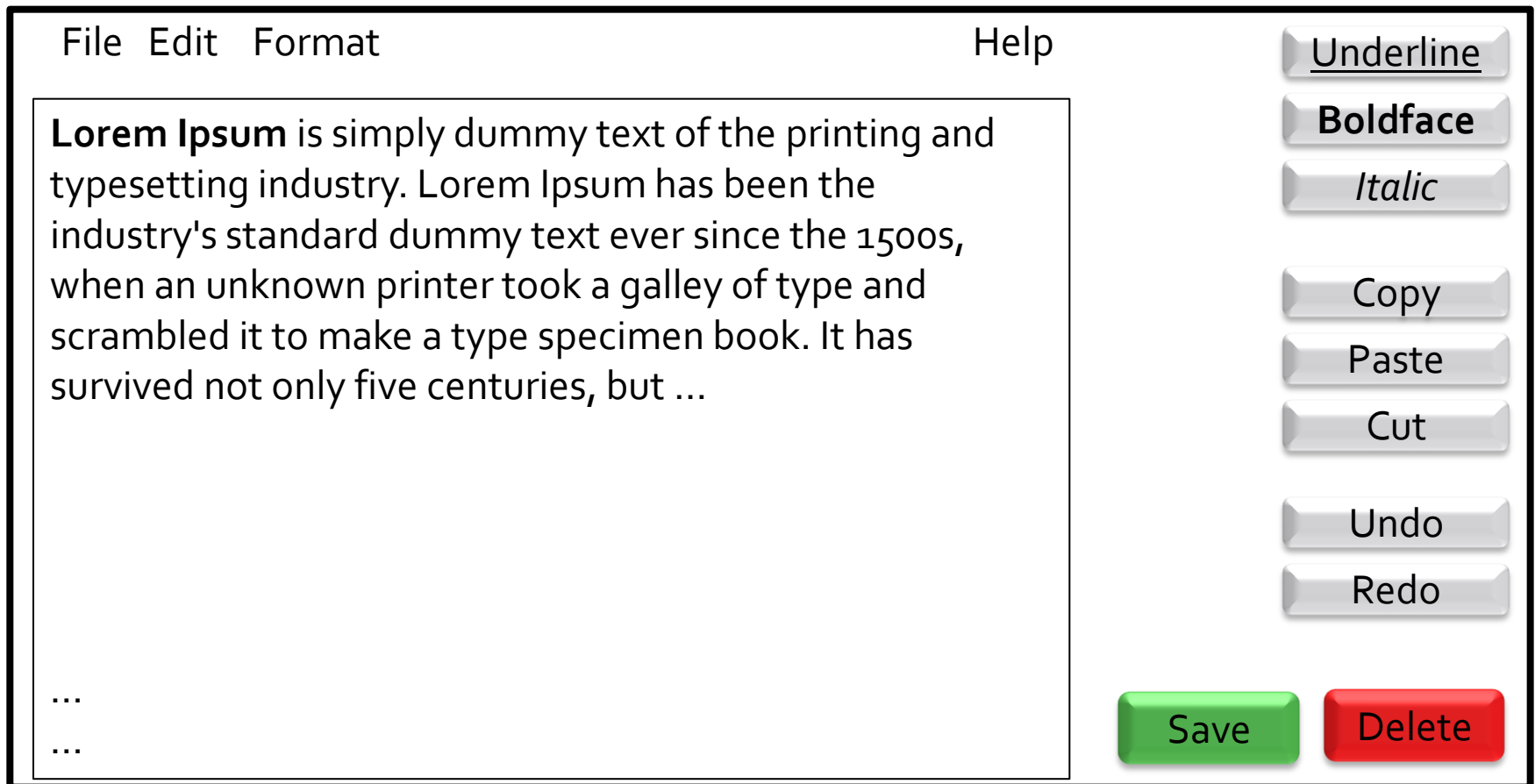
UI Example. Redesign

Menus with a more “standard” distribution



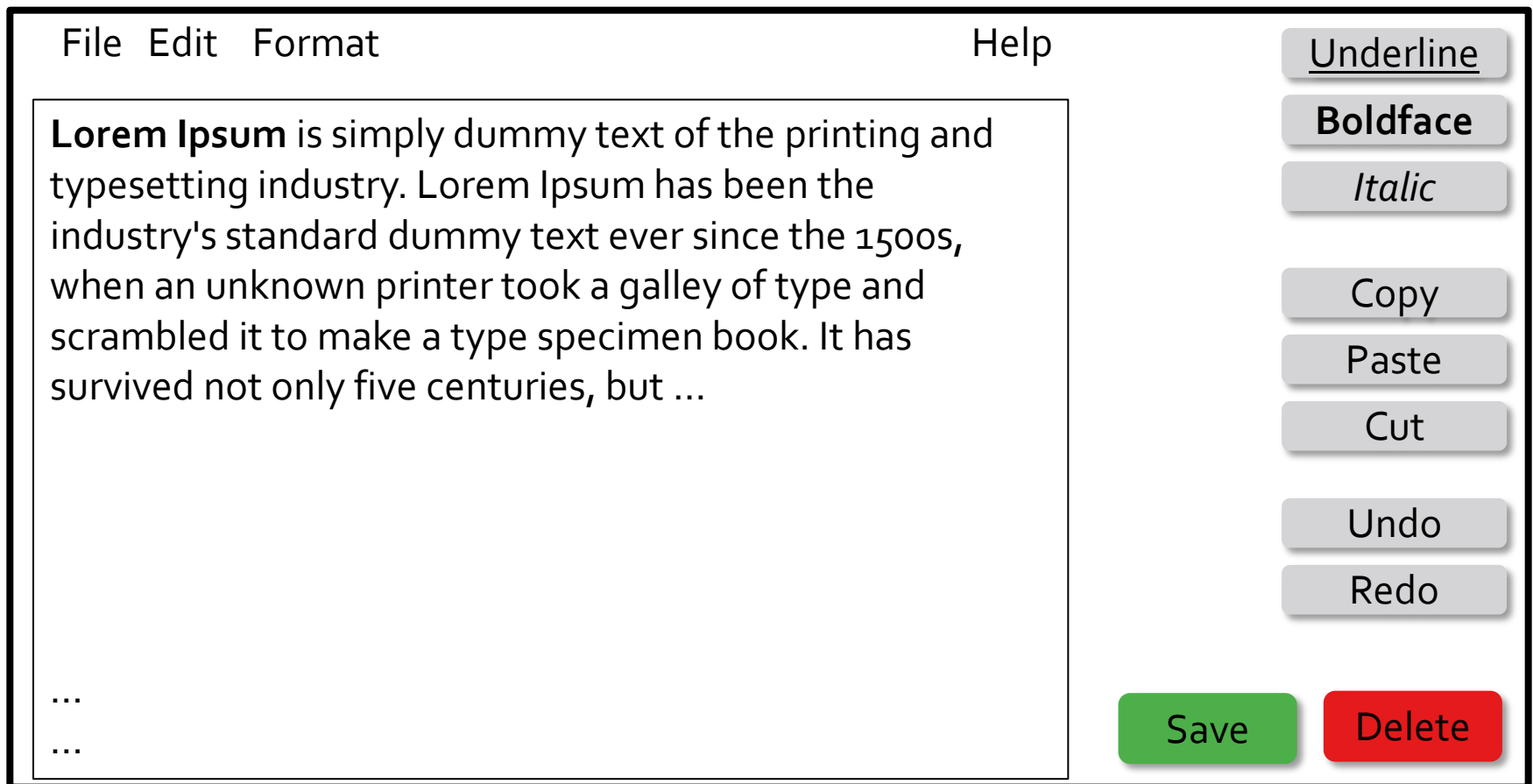
UI Example. Redesign

Similar brightness



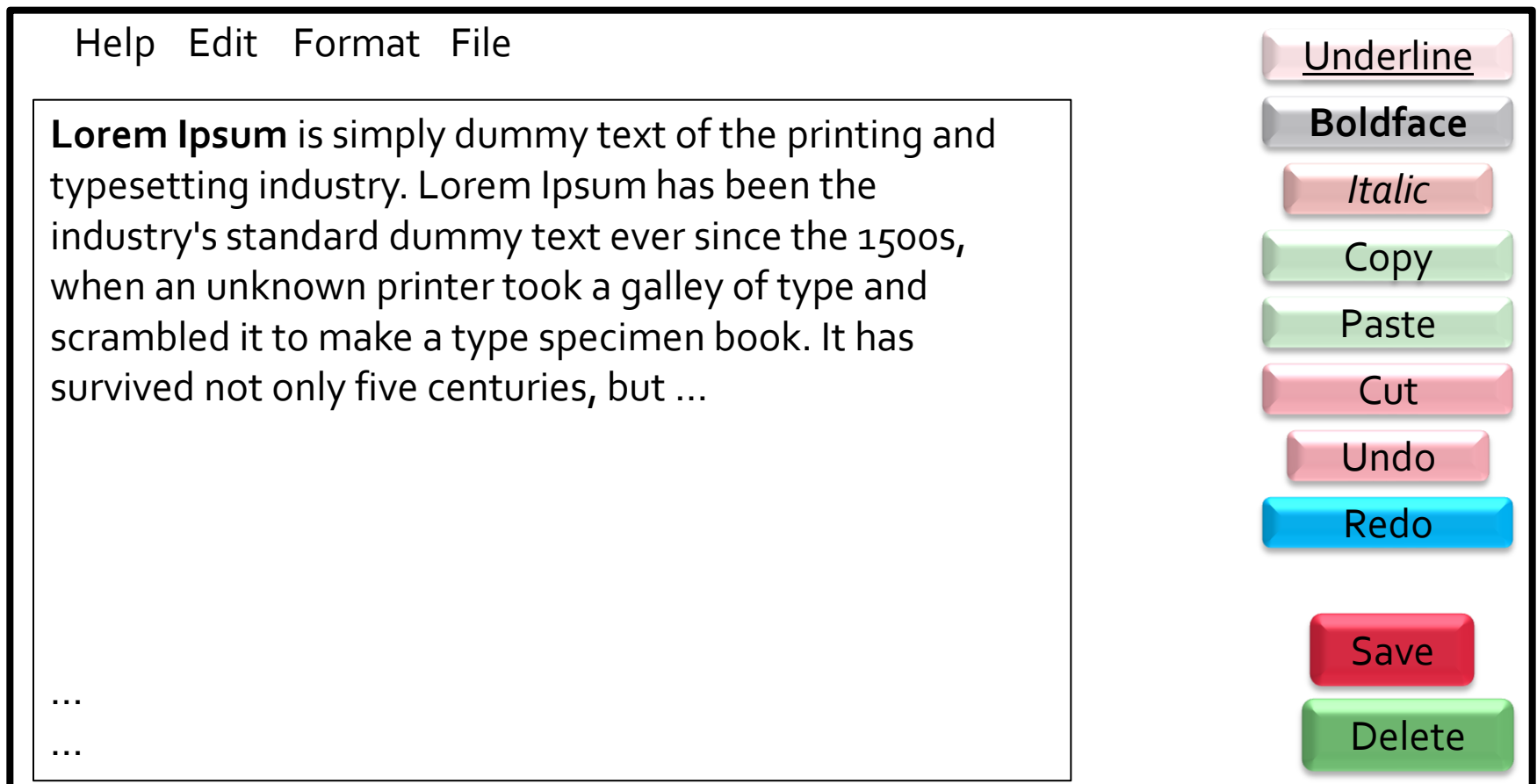
UI Example. Redesign

Reducing 3D effect (context-dependent)



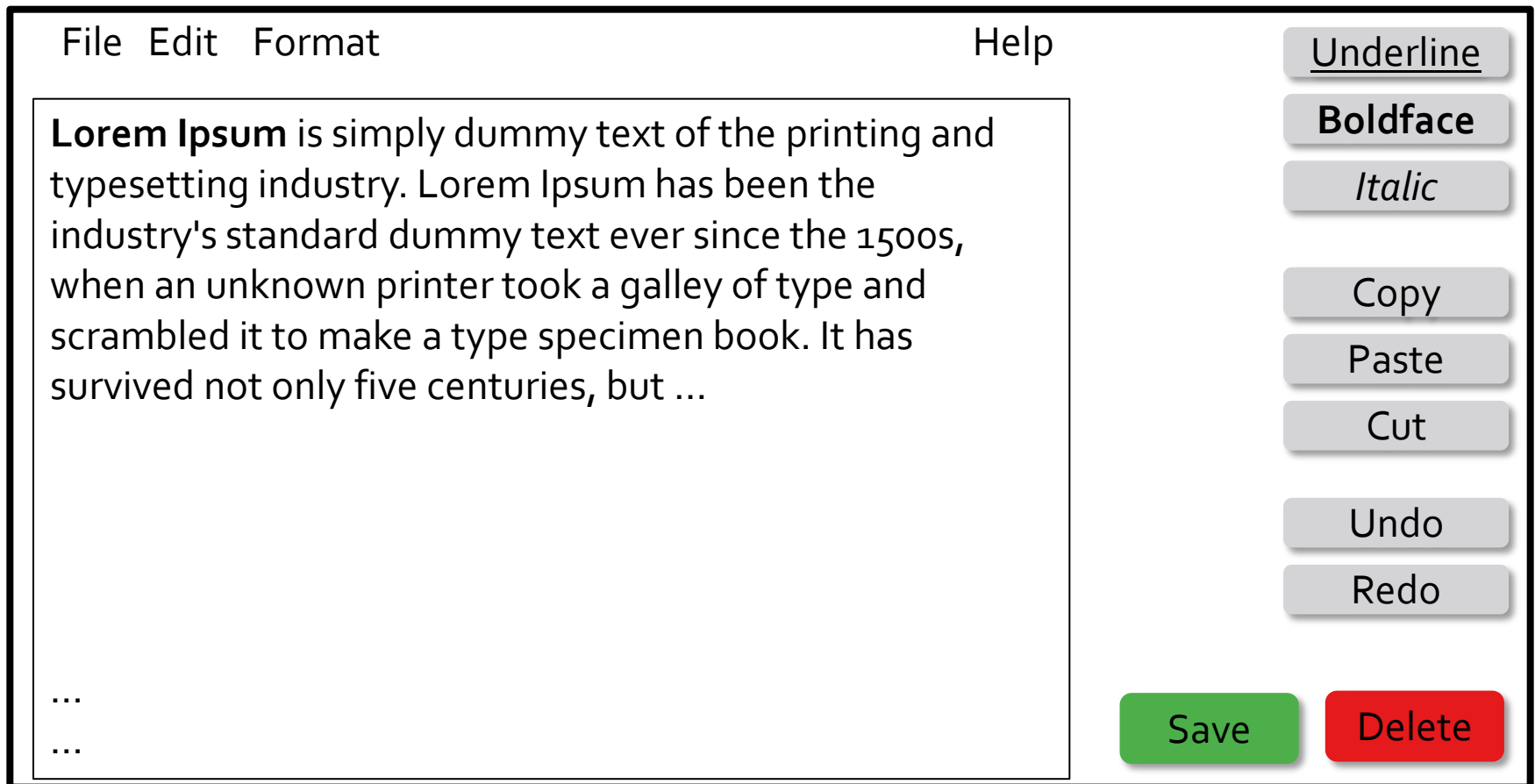
UI Example. Redesign

Side to side (original)



UI Example. Redesign

Side to side (modified)



First Name:

Last Name:

Email:
(Your email address will be your username)

Re-type Email:

Password:
(Min. 8 characters, 1 number, case-sensitive)

Re-type Password:

Address:

City:

State:

Zip Code:

Phone:
No spaces or dashes

Date of Birth:

Gender:

Security Question:

Security Answer:
(Not case-sensitive)

Personal Information

First Name:

Last Name:

Date of Birth:

Gender:

Account Information

Email:
(Your email address will be your username)

Re-type Email:

Password:
(Min. 8 characters, 1 number, case-sensitive)

Re-type Password:

Security Question:

Security Answer:
(Not case-sensitive)

Contact Information

Address:

City:

State:

Zip Code:

Phone:
No spaces or dashes

And remember...



YOU ARE NOT
THE USER!



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