



Mobile App Design Practical Guidelines



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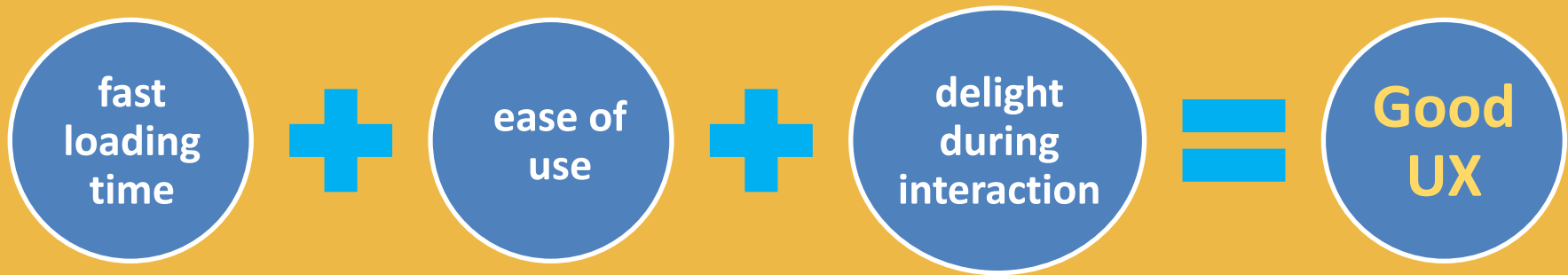
IF3151 Human Computer Interaction
STEI ITB 2024

Smartphone User

- By 2023, the number of smartphone users is expected to reach around **233.5 million**.
- Currently, Indonesia is the fourth-largest smartphone market worldwide after China, India, and the United States.
- The average user spends 3-4 hours per day on mobile.
- The vast majority of that time is spent in **apps and on websites**.



Good UX is Important



A good UX is what separates successful apps from unsuccessful ones.

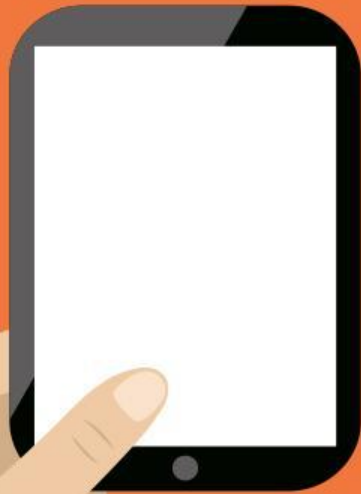


Practical Recommendations to Mobile App Design

1. Minimize cognitive load
2. Decluttering, Visual Weighting, and Consistency
3. Optimize content for mobile devices
4. Design for Touch
5. Optimize for mobile
6. Humanize Digital Experience



Minimize Cognitive Load



A Comprehensive Guide To Mobile App Design

Nick Babich

<https://bit.ly/2HZmMHS>

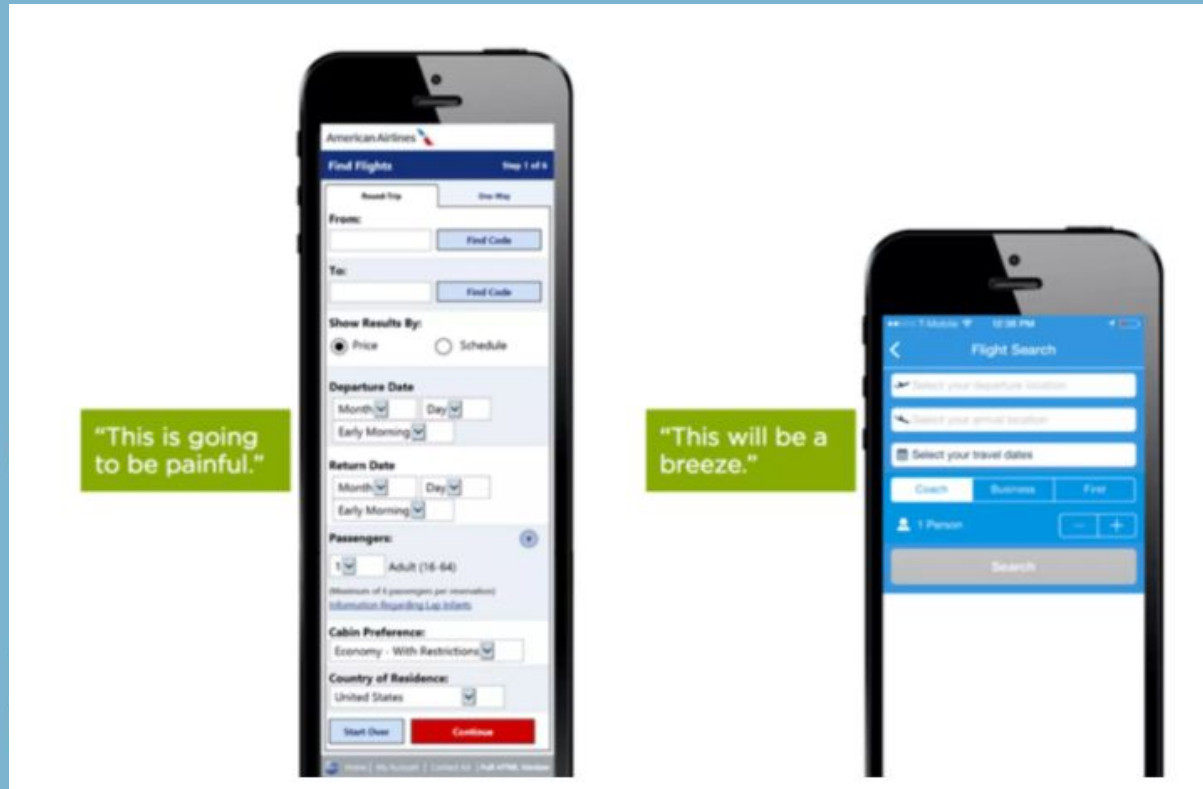
1. Minimize Cognitive Load

Minimize the amount of brain power required to use the app.



- Minimize Information
- Minimize User Input
- Avoid Jargon
- Break Task
- Offload Task
- Anticipate User Needs

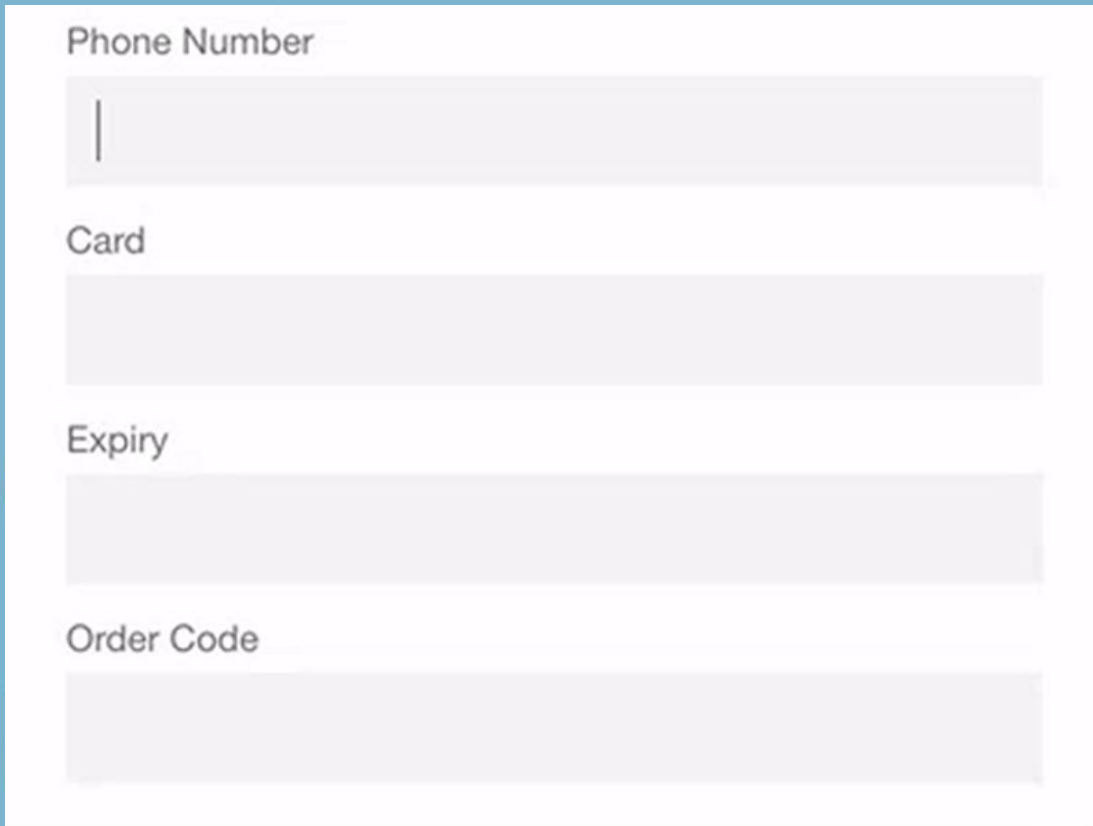
Minimize User Input



- Keep forms as short as possible by removing any unnecessary fields.
- Combine multiple fields into one easy-to-fill field.

(Image source: Luke W.)

Minimize User Input



Phone Number

Card

Expiry

Order Code

- Provide input masks.
- Field masking is a technique that helps users format inputted text.

(Image credit: [Josh Morony](#))

Minimize User Input

Dynamically validate field values (inline validation)

Bill To / Billing Address

Full Name ✓

Street Address ✓

Zip Code Enter Zip for City & State The specified ZIP is invalid

Phone

Email

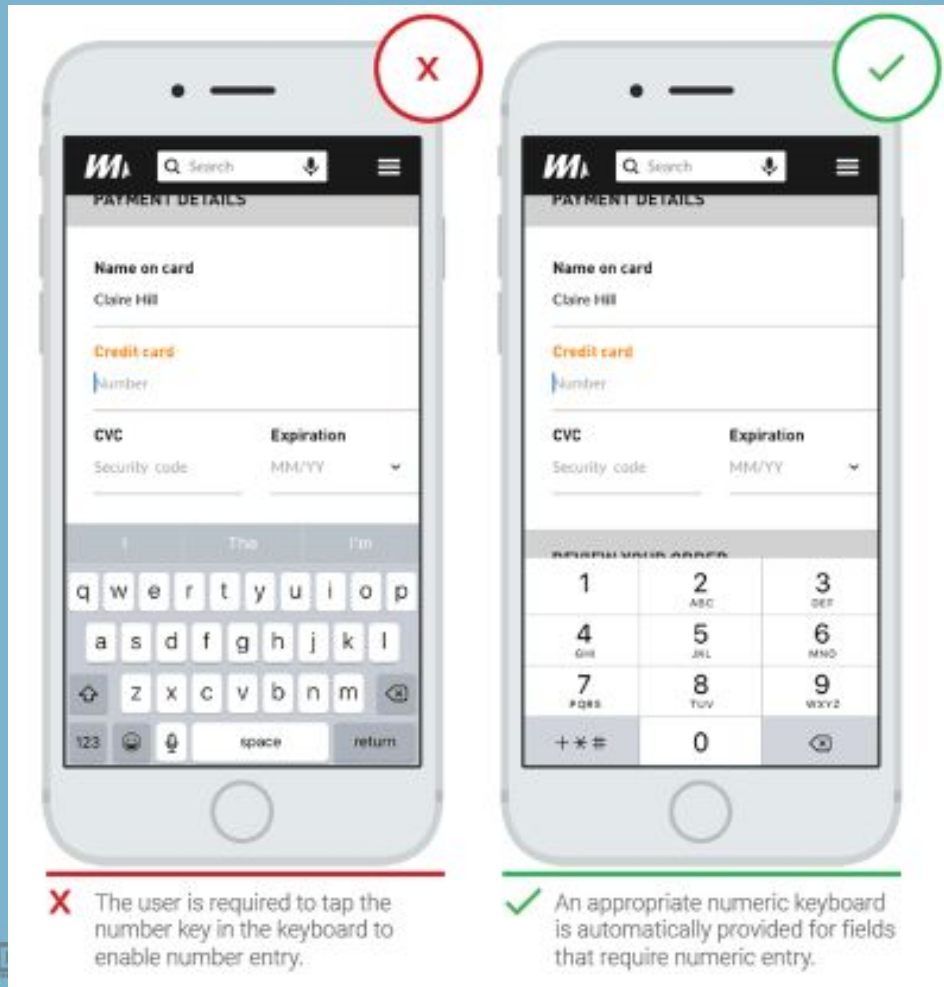
[Send me exclusive offers, deals and expert advice.](#)

It's frustrating when, after submitting data, user have to go back and correct mistakes.

Inline validation (Image source: [Baymard](#))

Minimize User Input

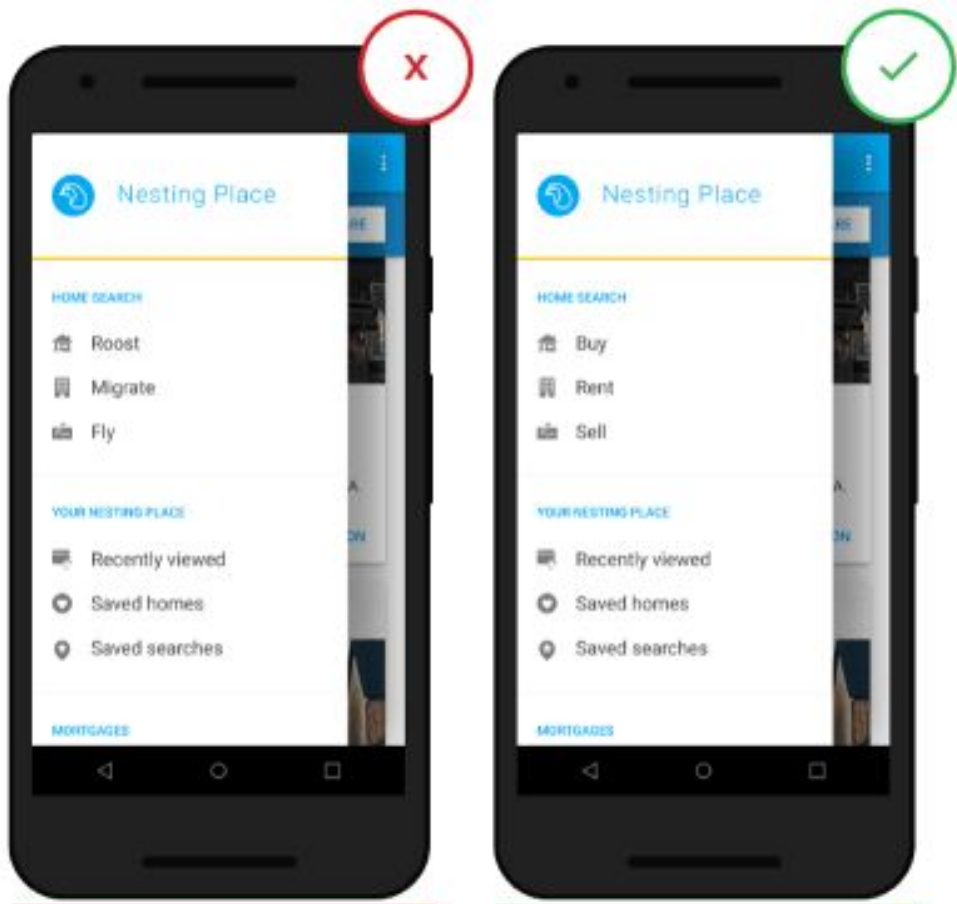
Customize the keyboard for the type of query.



- Display a numeric keyboard when asking for phone number
- include the @ button when asking for an email address
- Ensure that this feature is implemented consistently throughout the app

Match the keyboard to the required text input. (Image: ThinkWithGoogle)

Avoid Jargon



X Unconventional terminology (e.g., "Roost," "Migrate," or "Fly") can confuse users, hindering discoverability and comprehension.

✓ Terminology (e.g., "Buy," "Rent," or "Sell") is clear and free from unnecessary jargon or whimsy to avoid confusion.

- Use what you know about your target audience to determine whether certain words or phrases are appropriate.
- “Beli Sekarang” vs “checkout”

Unknown terms or phrases will increase cognitive load for the user.

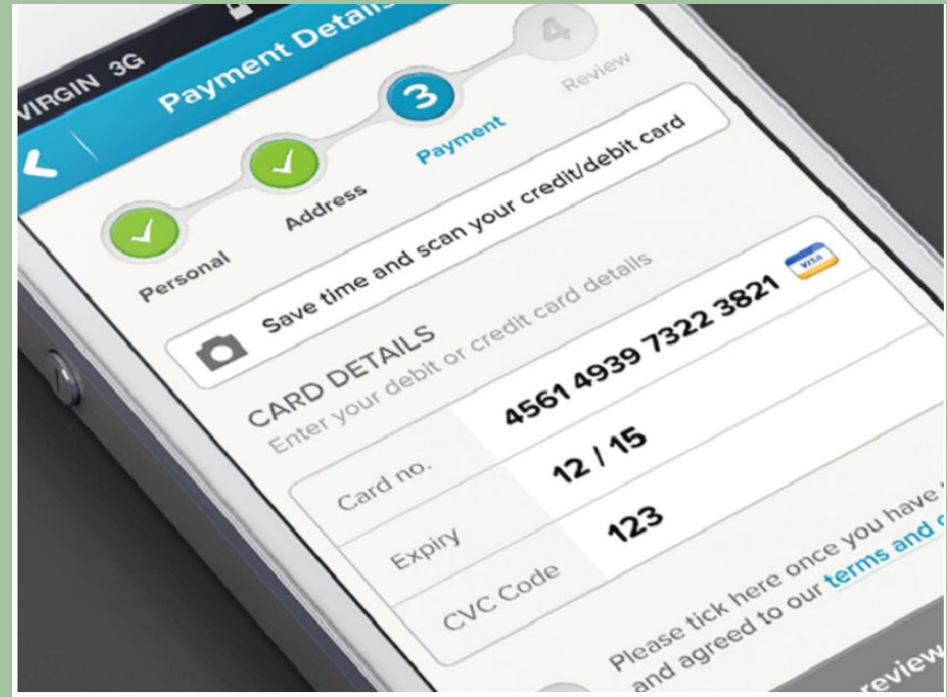
(Image source: ThinkWithGoogle)

Break Tasks

If a task contains a lot of steps and actions required from the user, it's better to divide such tasks into a number of subtasks.

Chunking makes a form look less loaded, especially when you're requesting a lot of information from the user.

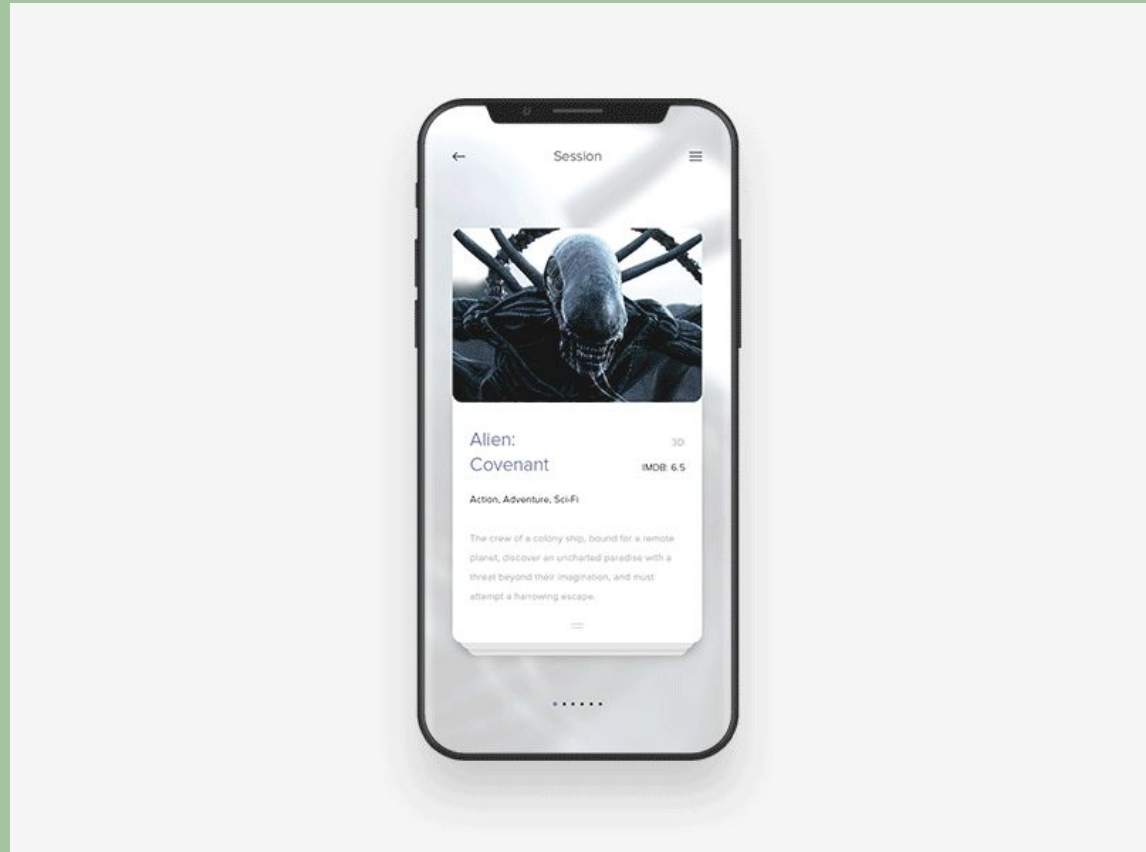
(Image source: [Murat Mutlu](#))



Break Tasks (2)

Chunking help
to connect two
different
activities

- such as
browsing and
purchasing



*Finding a film and purchasing tickets to the cinema.
(Image source: Anton Skvortsov)*

Offload Tasks

- Look for anything in the design that requires user effort (such as entering data, making a decision) and look for alternatives.

Example:

Reuse previously entered data instead of asking the user to type more or use already available information to set a smart default.



Anticipate User Needs

Proactively look for steps in the user journey where users might need help

A specific part where users need to provide specific information.

Full Name

Email Address
Example: john@gmail.com

Barcode
Example: CE0000000000BG

What's this?

BARCODE

The barcode is available on the receipt given to you when you paid for the shipment of your parcel.

Foreign Parcel

Country: GERMANY
Addressee: AMAZON
Weight: 2.300 kg
Barcode: CE090005896MT
Price: 26.20
Stamps Affixed: 0.00

GOT IT

(Image source: [Hotjar](#))

Decluttering, Visual Weighting, and Consistency



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<https://bit.ly/2HZmMHS>

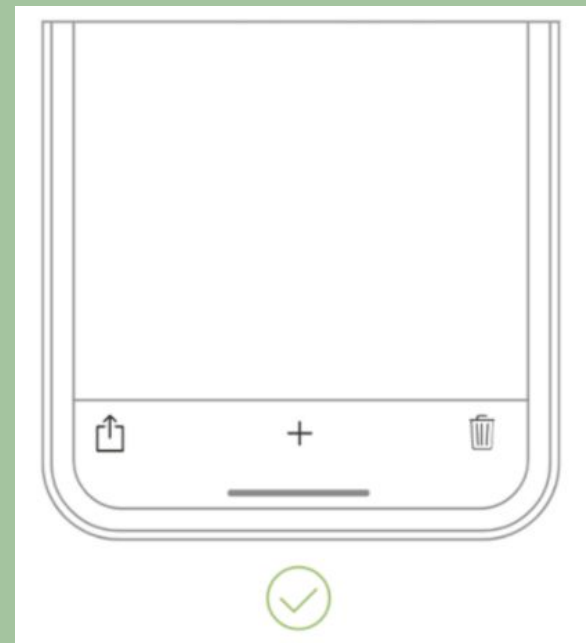
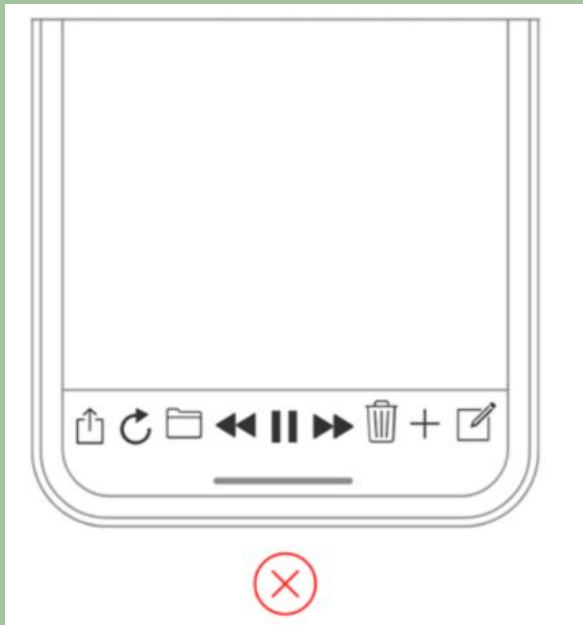
2. Decluttering

- It's essential to get rid of anything that isn't absolutely necessary
- Reducing clutter will improve comprehension
- Use *Functional Minimalism*



Functional Minimalism (1)

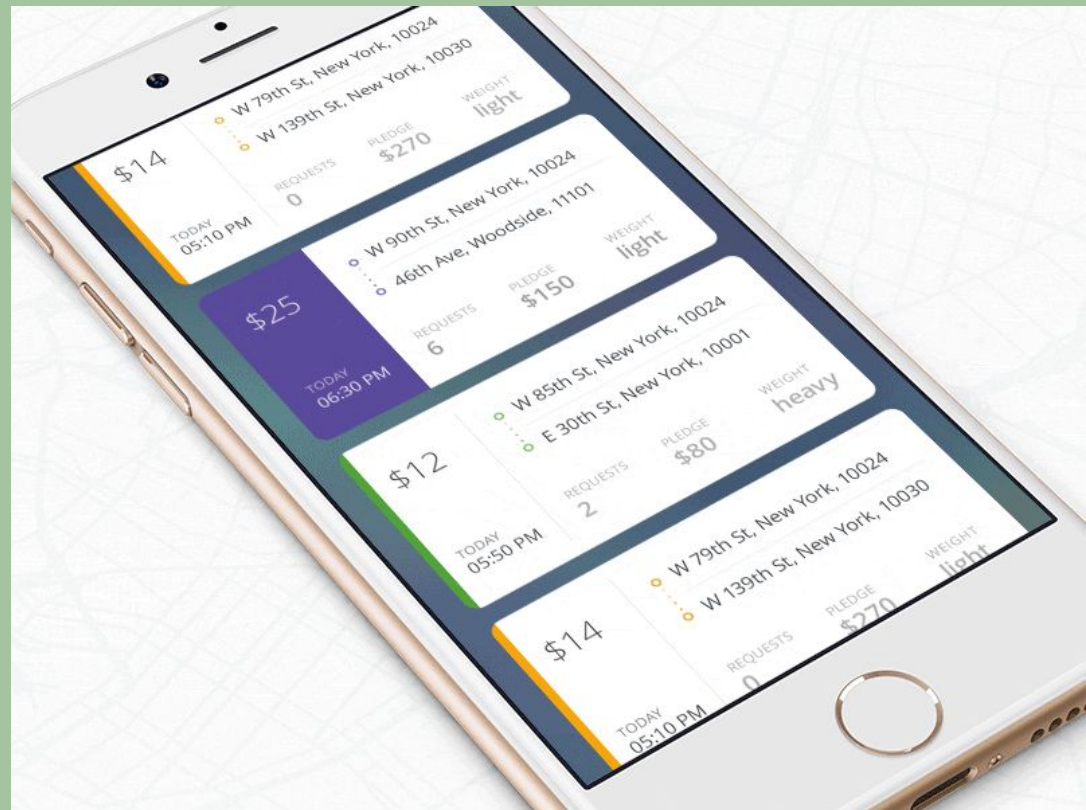
- Keep content to a minimum (present the user with only what they need to know).
- Keep interface elements to a minimum.



*The clear tab bar (right) is much better than the cluttered one (left).
(Image: Apple)*

Functional Minimalism (2)

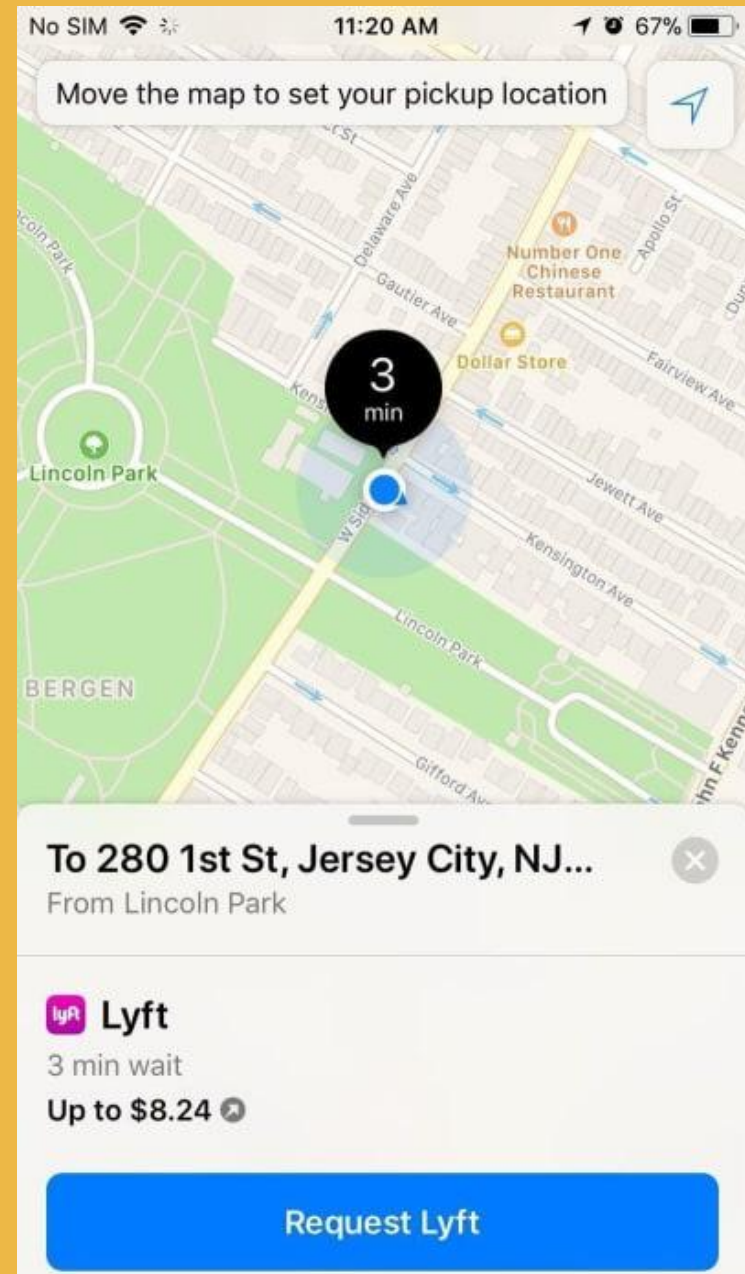
- Use progressive disclosure to show more options.



*The interface reveals more options after interaction.
(Image source: [Ramotion](#))*

3. Use Visual Weight to Convey Importance

- The most important element on the screen should have the most visual weight.
- Adding more weight to an element is possible with font weight, size and color.



4. Make the Design Consistent

Consistency eliminates confusion

Visual consistency

Typefaces, buttons and labels need to be consistent across the app.

Functional consistency

Interactive elements should work similarly in all parts of your app.

External consistency

Design should be consistent across multiple products. This way, the user can apply prior knowledge when using another product.



Optimize Content for Mobile Devices



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5. Optimize Content For Mobile

- Content plays a significant role in design.
- In most cases, the primary reason why people use an app is the content it provides.
- But it's not enough just to have clear, well-crafted content.
- **The content has to be easy to digest.**



Make Text Readable and Legible

- **Font size** Generally, anything smaller than 16 pixels (or 11 points) is challenging to read on any screen.
- **Font family** Most users prefer a clear, easy-to-read font.
- **Contrast** Make sure there is plenty of contrast between the font and the background for easy readability.



Make Text Readable and Legible (2)

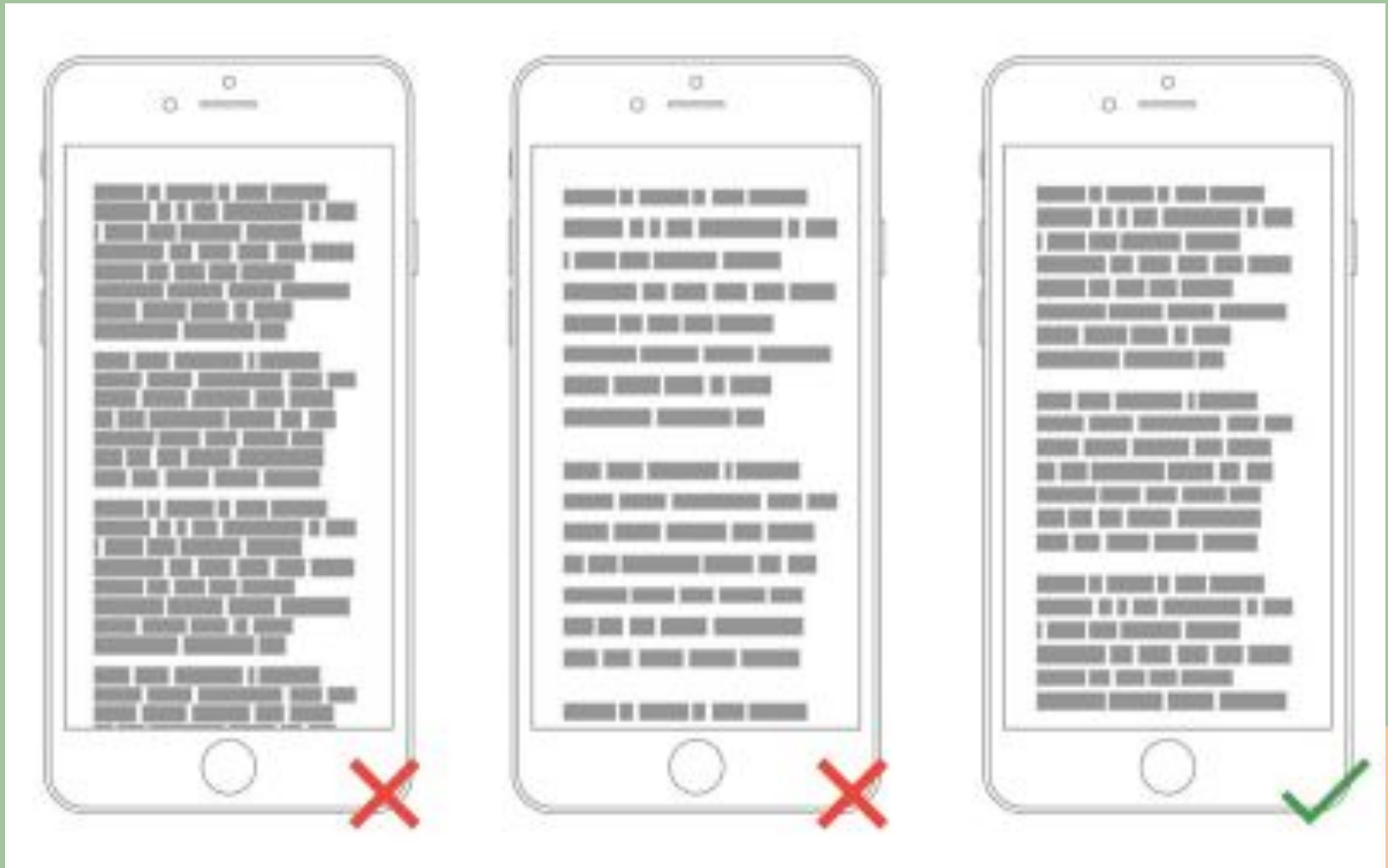
- **Avoid all caps.**
- **Limit the length of text lines.** A good rule of thumb is to use 30 to 40 characters per line for mobile.
- **Don't squeeze lines.** Adding space between text aids the user in reading and creates a feeling that there isn't so much information to take in.



Limit the length of text lines

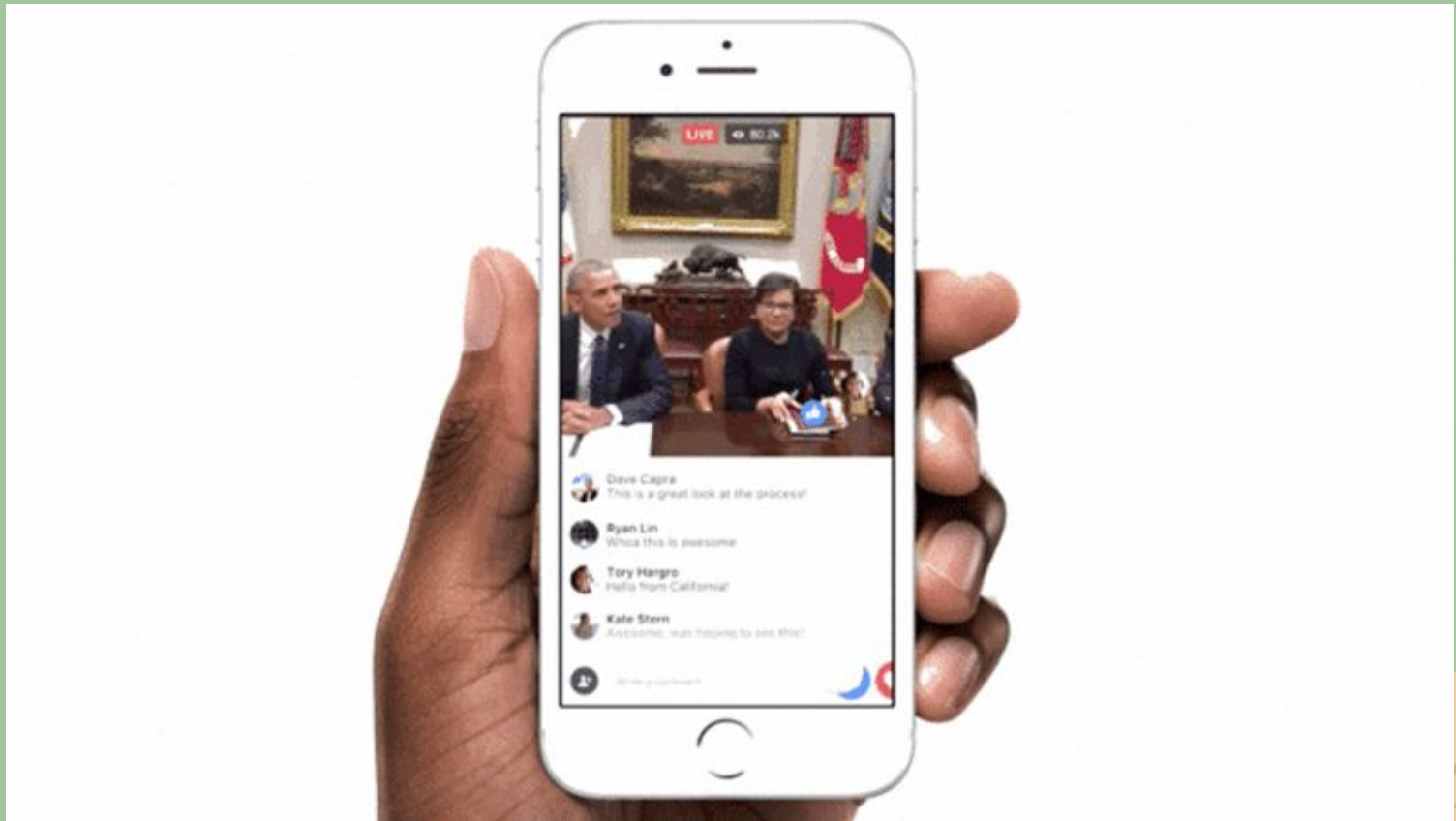


Don't squeeze lines



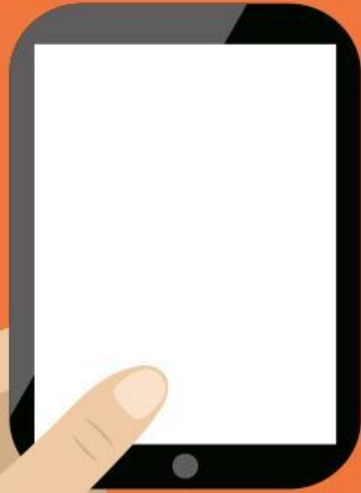
Video Content is Optimized for Portrait Mode

According to ScientiaMobile, [94% of users use their mobile device in portrait mode](#).



Facebook Live allows you to watch video in Facebook's timeline.
(Image source: Giphy)

Design for Touch



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6. Design for Touch

Designing for touch has a goal of:

- **reducing** the number of incorrect **inputs**
- making **interaction** with an app more **comfortable**.



6. Design for Touch

- Designing for fingers not cursors
- Consider thumb zone
- Feedback on Interaction



Designing for Fingers not Cursors: Size



A small touch target increases the chance of false selection.

(Image source: Apple)



Designing for Fingers not Cursors: Space

If multiple touch targets are near each other ensure that there is good amount of space between them

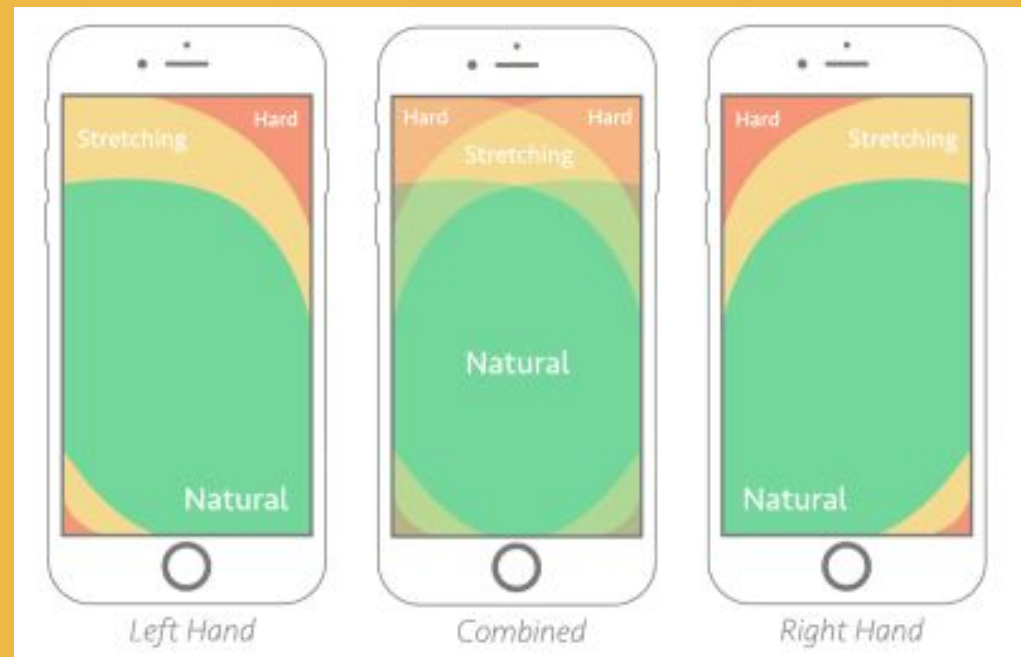


An example of space between buttons.

(Image source: Material Design)

Consider Thumb Zone

- A lot of users hold their phone with one hand.
- Only a part of the screen would be a genuinely effortless territory for their thumbs -> called **the natural thumb zone**.
- Other zones require finger stretching or even changing the grip to reach them.

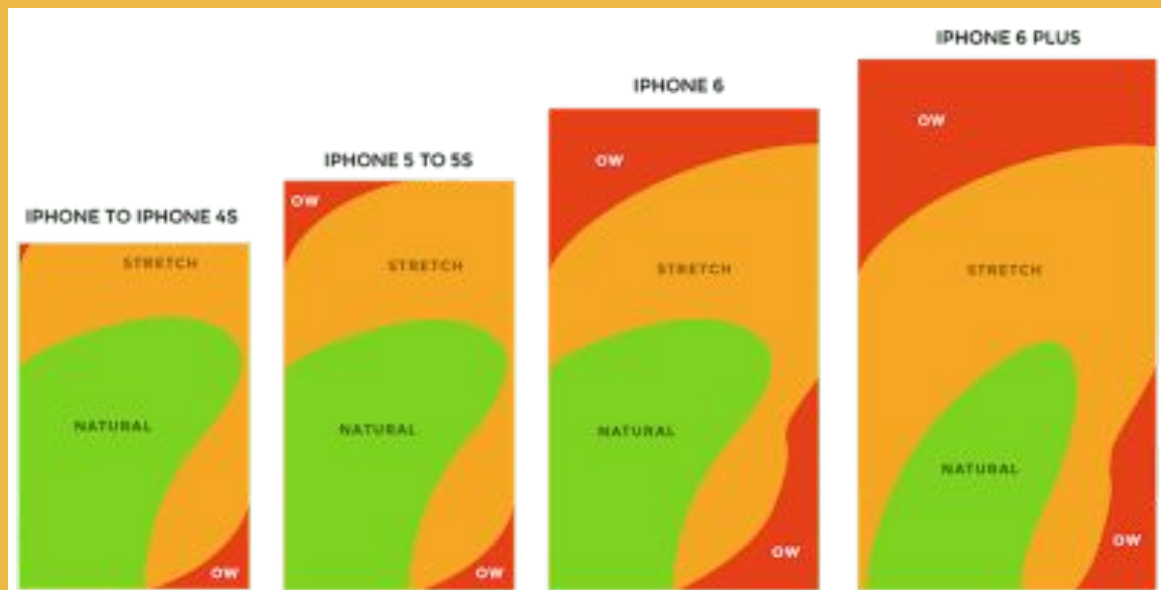


Thumb zones, according to research by Scott Hurff. (Image source: Smashing Magazine)

Consider Thumb Zone

The bigger the display, the more of the screen is less easily accessible.

- **Green zone:** the best place for navigation frequent interactive actions
- **The red zone:** the best place for potential danger options (such as “Delete” or “Erase”). Users are less likely to trigger this option accidentally.



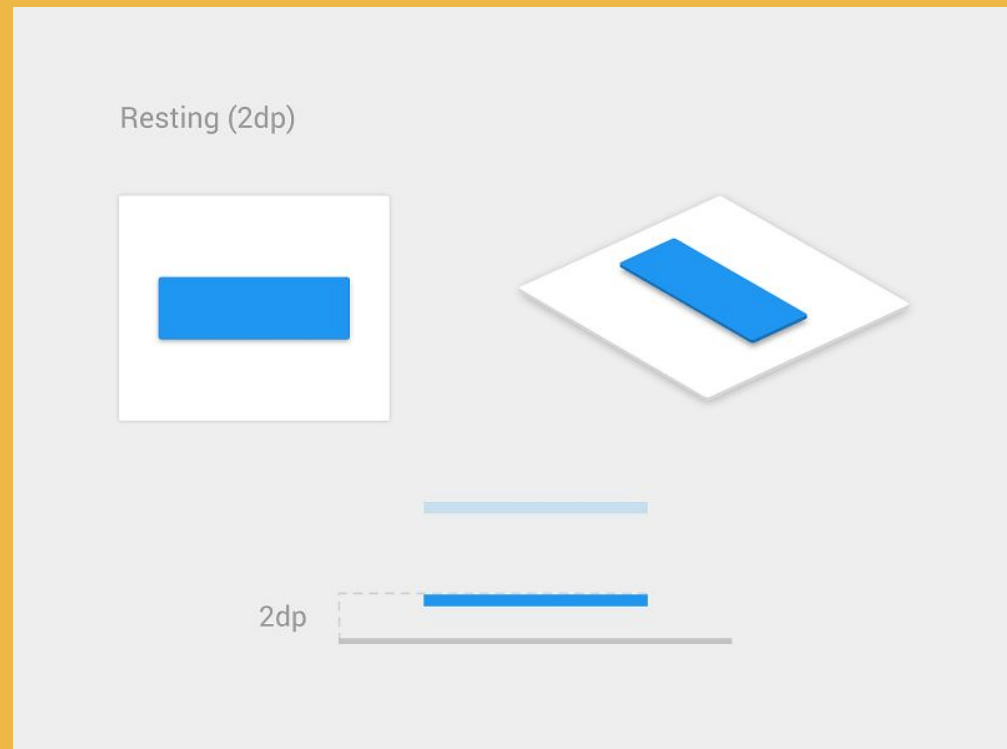
Thumb zones for a right-handed person, according to research by Scott Hurff.

Feedback on Interaction

- Provide instant feedback on every user interaction.
- If your app doesn't provide feedback, the user will wonder if it has frozen or if they missed the target.

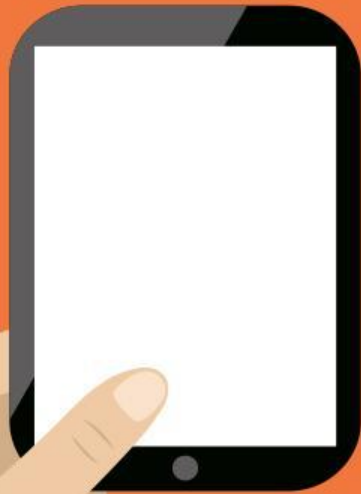
The feedback could be:

- visual (highlighting a tapped button)
- tactile (a device vibration on input).



(Image credit: [Vadim Gromov](#))

Optimize for Mobile



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7. Optimize for Mobile

- Design for Interruption
- Take advantage of device capabilities
- Multi-channel experience
- Poor internet connectivity
- Limited data
- Limited device capabilities
- Local aesthetic
- Specific of region



Design for Interruption



- A lot of mobile sessions happen when users on the go.
- Such sessions **can be interrupted at any time.**
- Users can be easily frustrated when an app forgets their current progress as soon as they close it.
- When an interruption occurs, **your app should save the current state (context) and allow users to continue where they left off.**

Take Advantage of Device Capabilities

Mobile devices have a lot of sensors (camera, location tracking, accelerometer) that can be used to improve the UX.

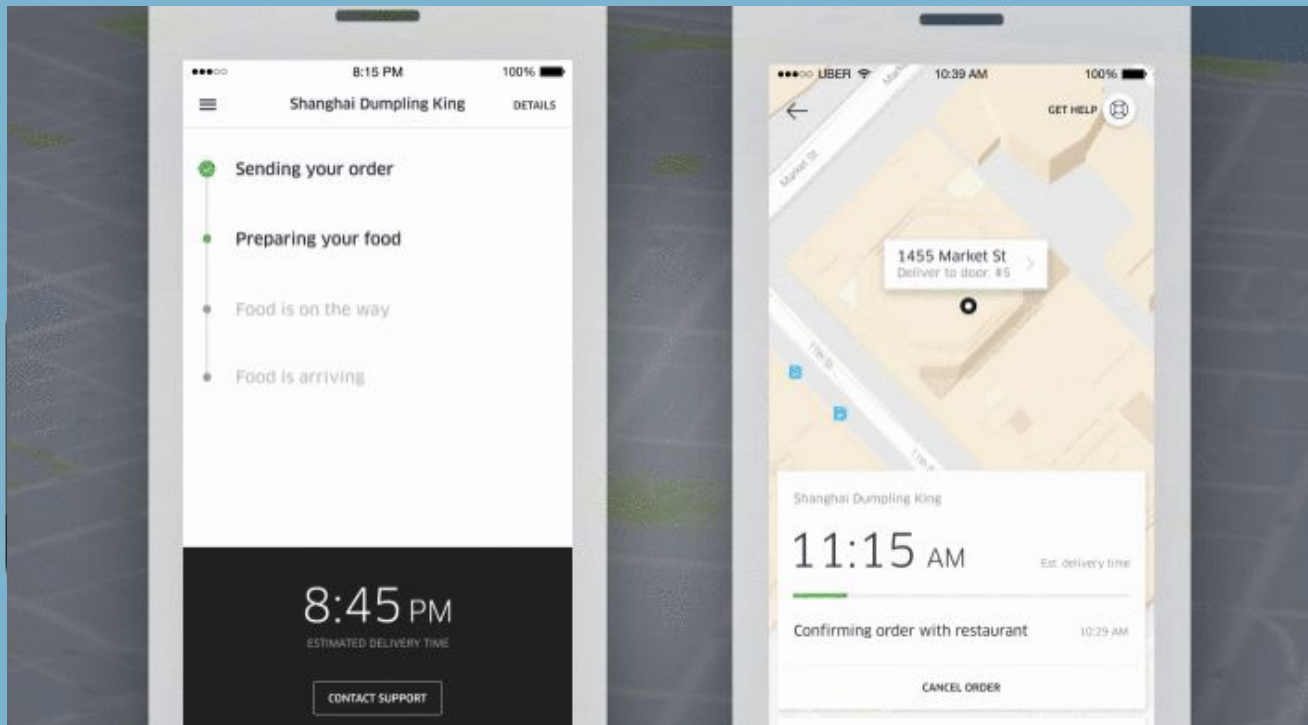


It's possible to simplify data input operations by using a camera.

(Image credit: Business Insider)

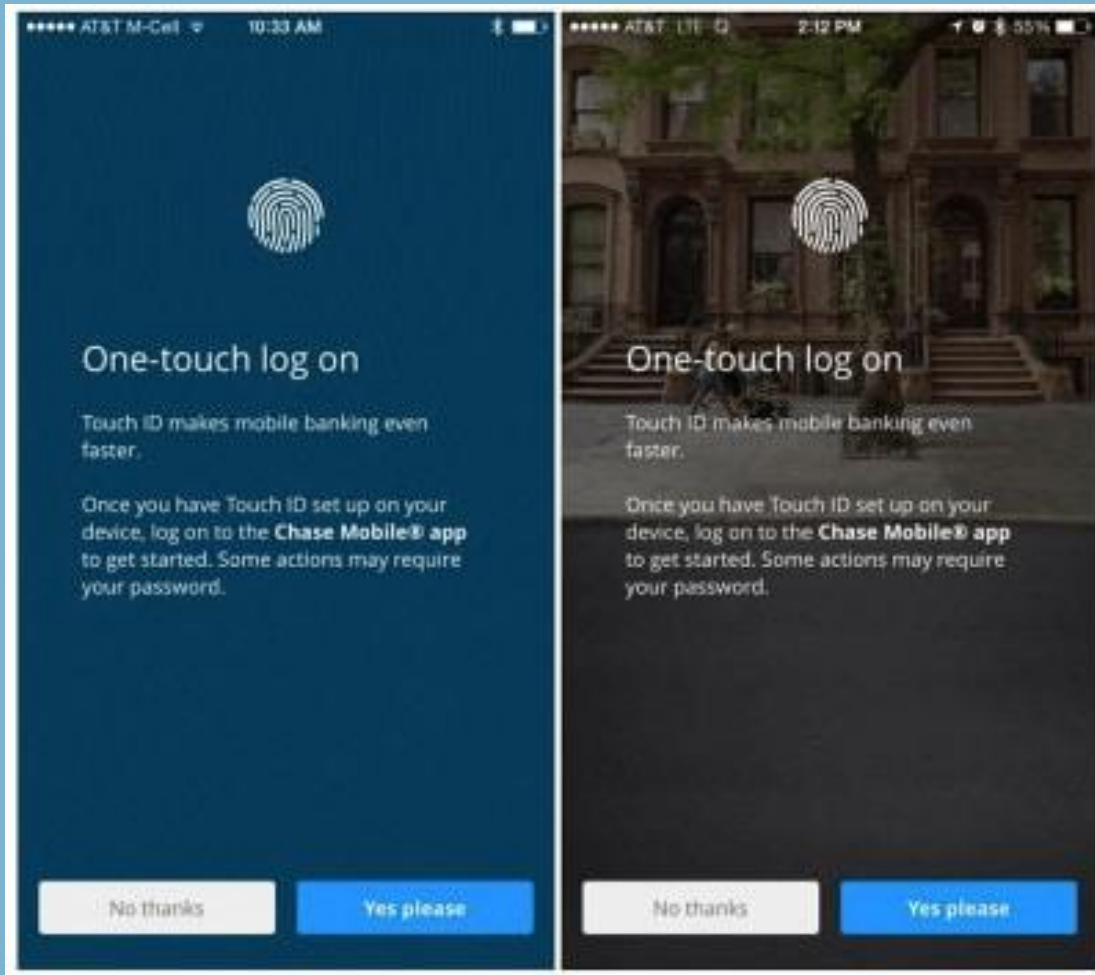
Take Advantage of Device Capabilities

Location awareness can be used to improve the UX.



Apps like Uber Eat already use this property to reduce the number of actions required by the user.

Take Advantage of Device Capabilities



Biometric authentication:

It's possible to minimize the number of steps required to log in to an app using fingerprint touch login, facial or voice identification.

Chase Mobile's app provides a one-touch log-in feature.

Multi-Channels Experience

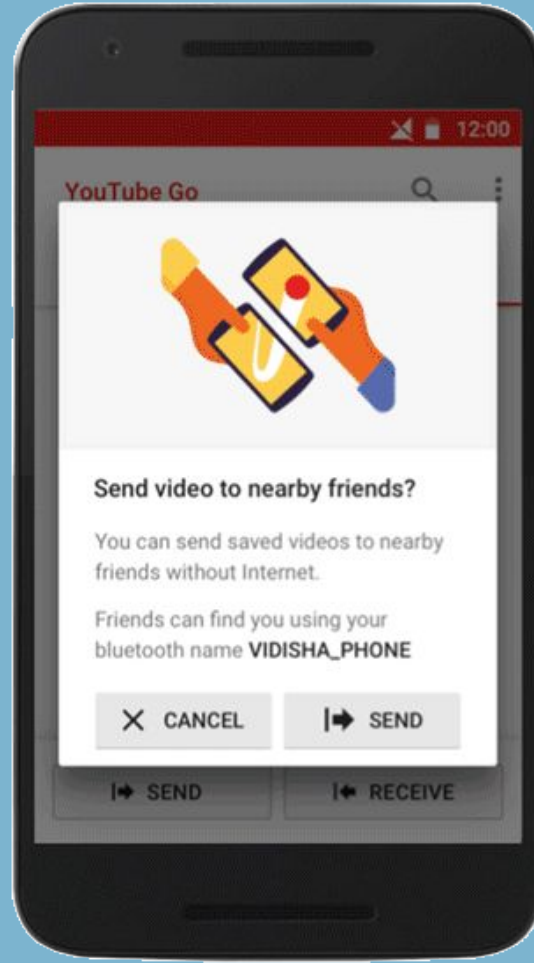
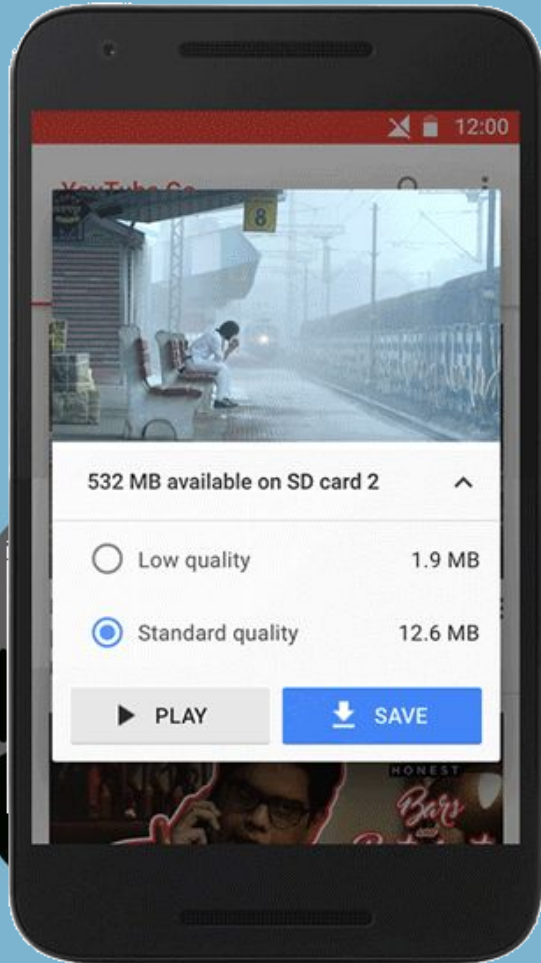
- Create a seamless experience, across all devices.
- Users should be able to switch to a different medium and continue the journey.



Example:

Designing an e-commerce app, that enables mobile users to switch to their desktop to continue the journey.

Poor Internet Connectivity

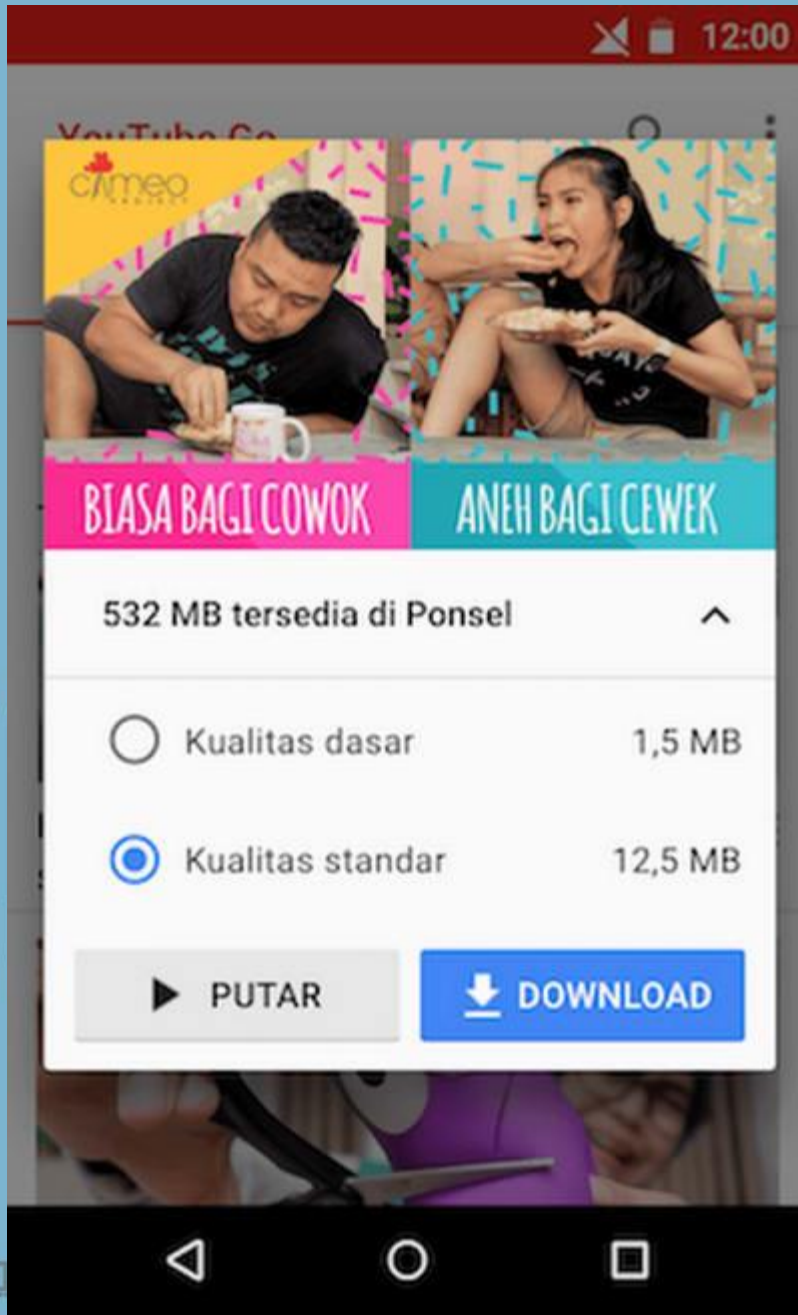


Depending on a person's location, the network might switch from Wifi to 5G to 2G to no connectivity at all, and your product has to accommodate that.

YouTube Go lets users send and receive videos when they're together, using offline peer-to-peer sharing.

Limited Data

- Some users appreciate transparency when it comes to understanding their data consumption.
- They also value the ability to control whether a product downloads over Wi-Fi or uses data.



YouTube Go lets you preview videos and choose their file size before saving it offline to watch later.

Limited Device Capabilities

- Most emerging-market devices cost below \$100 and might come with limited storage and processing power.
- Make sure that the product you design works with older, low-end devices and software.



Local Aesthetic

- Minimalist design, which is popular today, might be considered too bare for other cultures.
- If you want your product to succeed in emerging markets, pay attention to the cultural aesthetics.
- Designing according to local aesthetics will make your product feel more relatable.



Specific of Region



- When Google adapted Google Maps for India, it considered that India is the largest two-wheeler market in the world
- The millions of motorcycle and scooter riders have different needs than drivers of automobiles.
- It released two-wheeler mode in Maps.
 - This mode shows trip routes that use shortcuts, not accessible to cars and trucks.

Humanize Digital Experience



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8. Humanize Digital Experience

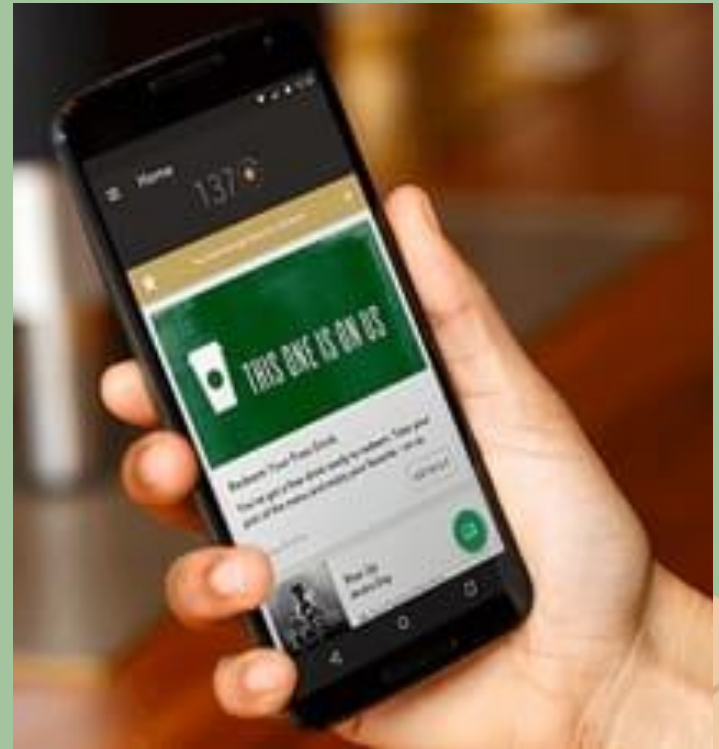
UX isn't only about usability; it's mostly about feelings.

- **Personalized Experience**
- **Delightful Animation**



Personalized Experience

- There are countless ways to improve the mobile UX by incorporating personalization.
- It's possible to offer personalized content depending on the user's location, their past searches and their past purchases.

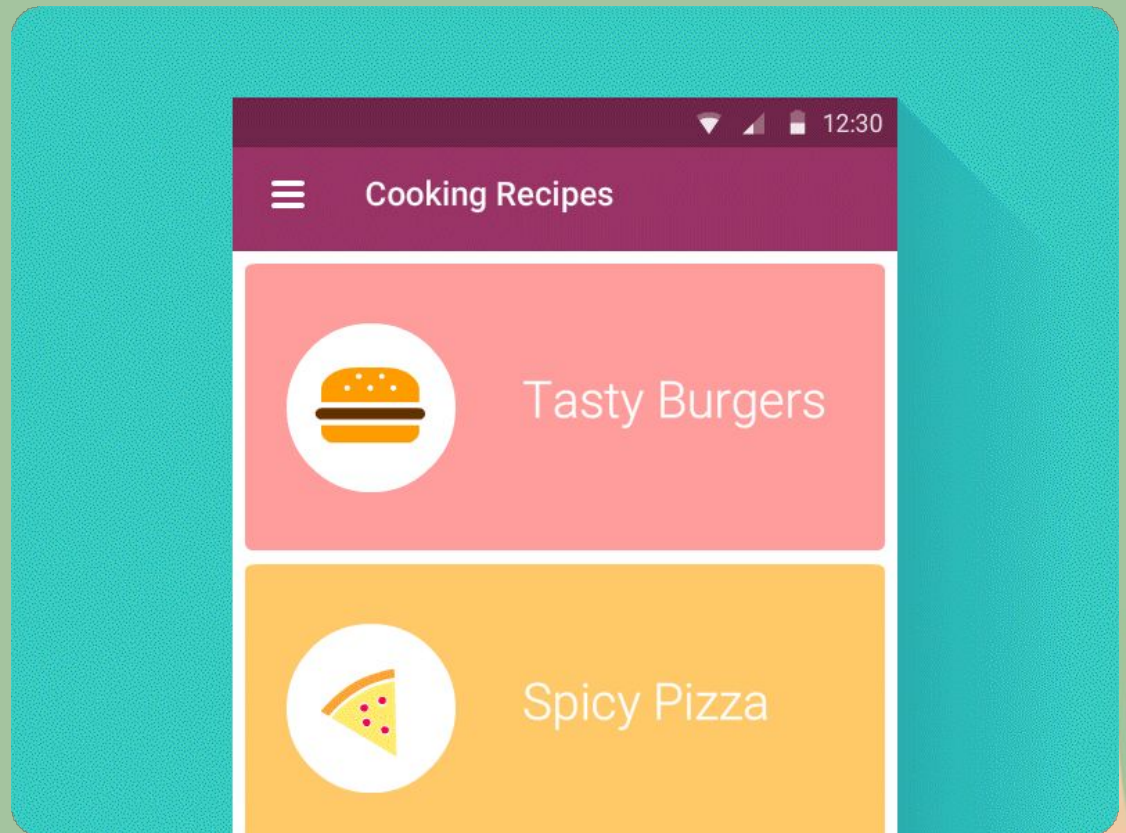


Starbucks provides offers and services tailored to individual customers

Delightful Animation

Delightful animation is used to make an interface feel human.

Using delightful details is an opportunity to create an emotional connection with your users.



(Image credit: [Serhii Hanushchak](#))

Design in General

A great design is the perfect combination of beauty and functionality

But don't try to build a perfect app right on the first attempt.

It is almost impossible.

Instead, *treat your app as a continually evolving project, and use data from testing sessions and user feedback* to constantly improve the experience





*Creativity is the key to success
in the great education*

Terima Kasih

