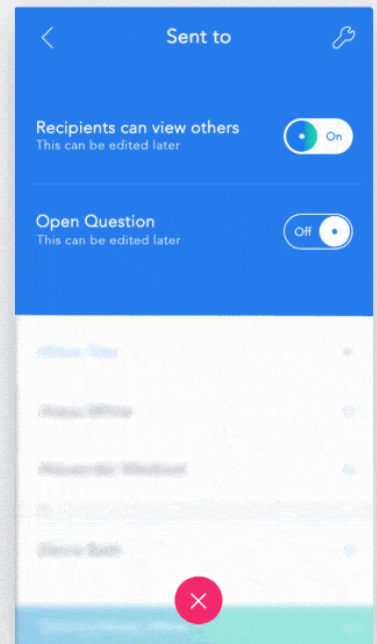# IDI – Mobile Interaction Design

Professors IDI
ViRVIG Group – UPC

Motivation

Mobile devices have different requirements for design:

- More personal
- The environment where users use them competes for their attention
- Entering data is difficult
- Small screen sizes

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Motivation

Desired features for mobile UIs:

- Quick find what they intend to
- Minimum cognitive load for interaction
- Information presented in small chunks

User Interface and Interaction Design different from desktop
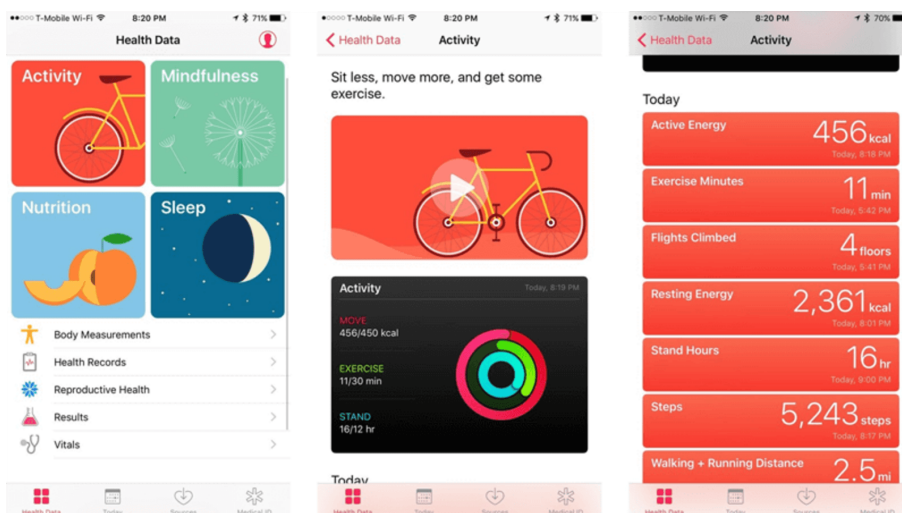
3

Design Guidelines

Keep navigation simple

- Ensure navigation feels familiar
- Design good information architecture
- Navigation should not grab user attention
- Ensure users know their location
- Strive for consistency
- Clear path to objectives
- Clear visual hierarchy

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Design Guidelines

Keep navigation simple: Communicating the current section of the app

Design Guidelines

Finger-friendly tap targets

- Around 10x10mm minimum
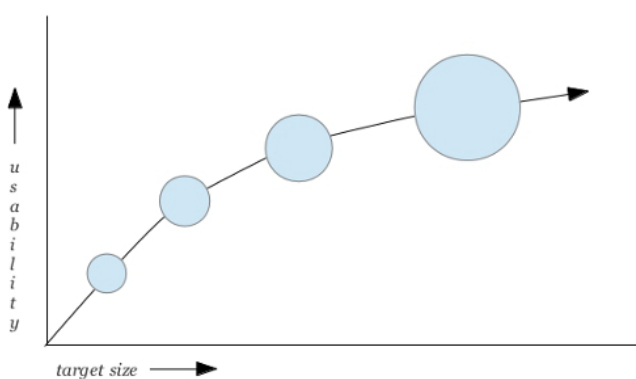- Keep good spacing between elements

Design Guidelines

Finger-friendly tap targets

Predicted usability of a button according to its size

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Design Guidelines

Finger-friendly tap targets

For mobile take into account the thumb zones

- Consider Fitts only within the operation range of the thumb
- Outside elements require extra effort

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Design Guidelines

Progressive disclosure and cognitive load reduction

Cognitive load: amount of brain power required to use the app

▪ Keep amounts of information (required to remember) low

▪ Progressively show new features or tasks

▪ Helps simplifying UI

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Design Guidelines

Design Guidelines

Make text legible

- Choose typeface that works well in multiple sizes and weights
- Use legible font sizes: at least 11 points
- Use adequate contrast
- Correct vocabulary

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Design Guidelines

Make text legible

Heading
Sub-Headline
Adipiscing elit. Sed neque nisl, blandit vel ipsum eu, imperdiet blandit lectus. Morbi tristique urna ut volutpat ornare. Curabitur semper vitae urna ac tempus. Duis vehicula elit nulla, eleifend egestas nisl vehicula nec. Nullam varius est dui, nec accumsan lectus posuere ut. Nullam viverra purus laoreet euismod tempor.

Adipiscing elit. Sed neque nisl, blandit vel ipsum eu, imperdiet blandit lectus. Morbi tristique urna ut volutpat ornare. Curabitur semper vitae urna ac tempus. Duis vehicula elit nulla, eleifend egestas nisl vehicula nec. Nullam varius est dui, nec accumsan lectus posuere ut. Nullam viverra purus laoreet euismod tempor.

Adipiscing elit. Sed neque nisl, blandit vel ipsum eu, imperdiet blandit lectus. Morbi tristique urna ut volutpat ornare. Curabitur semper vitae urna ac tempus. Duis vehicula elit nulla, eleifend egestas nisl vehicula nec. Nullam varius est dui, nec accumsan lectus posuere ut. Nullam viverra purus laoreet euismod tempor.

✕

Heading
Sub-Headline

Adipiscing elit. Sed neque nisl, blandit vel ipsum eu, imperdiet blandit lectus. Morbi tristique urna ut volutpat ornare. Curabitur semper vitae urna ac tempus. Duis vehicula elit nulla, eleifend egestas nisl vehicula nec. Nullam varius est dui, nec accumsan lectus posuere ut. Nullam viverra purus laoreet euismod tempor.

Adipiscing elit. Sed neque nisl, blandit vel ipsum eu, imperdiet blandit lectus. Morbi tristique urna ut volutpat ornare. Curabitur semper vitae urna ac tempus. Duis vehicula elit nulla eleifend.

✓

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Design Guidelines

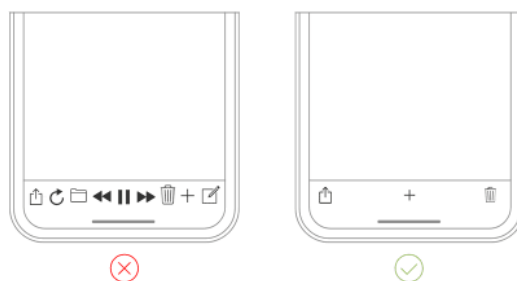*Provide feedback on interactions*

- Use microinteractions if possible
- Add progress indicators when required

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Design Guidelines

Reduce clutter

- Keep content to a minimum
- Keep interface elements to a minimum
- Alternatively, use progressive discovery
- Strive for minimalism

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Design Guidelines

Reduce user inputs

Simplify procedures: onboarding, logon…

Onboarding:

- Break in multiple steps
- Delay information retrieval
- Inform properly on the needs

Logon:

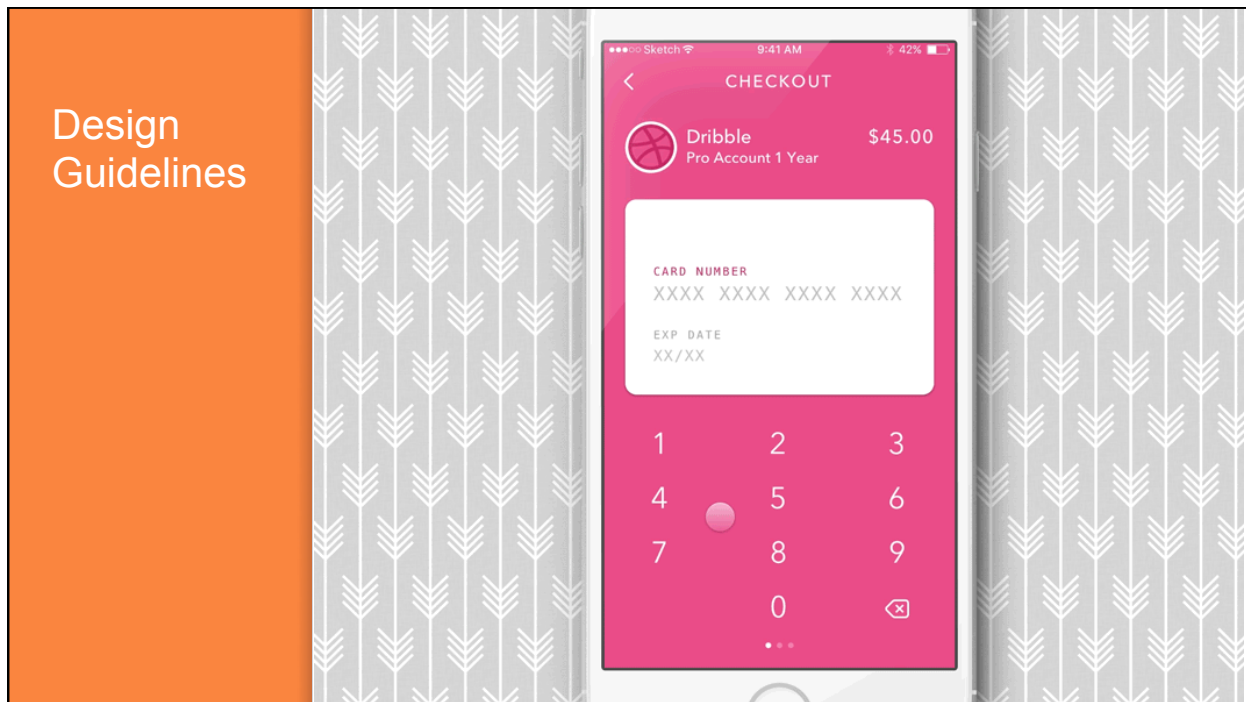- Use one-time passwords or QRs when possible

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Design Guidelines
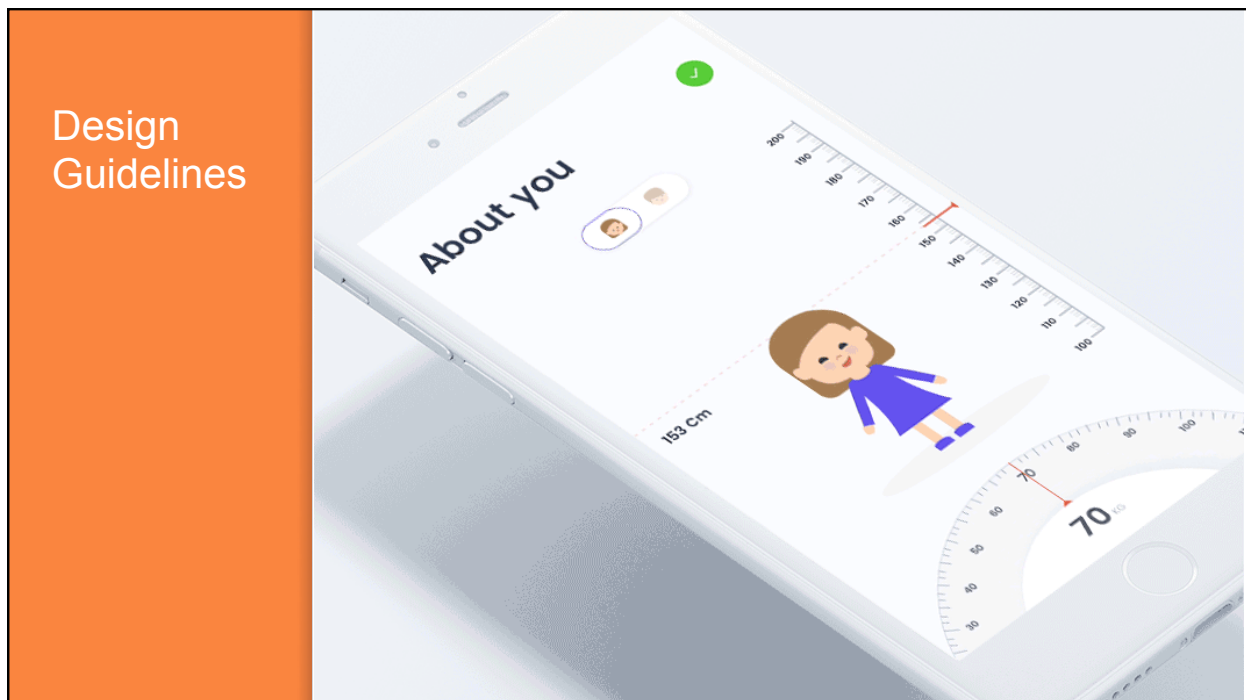
Reduce user inputs: recommendations

- Keep forms as short as possible
- Provide input masks
- Use smart features such as autocomplete
- Dynamically validate field values
- Customize the keyboard for the type of entry
- When possible, substitute text entry for options

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Design
Guidelines

Design
Guidelines

Design Guidelines

Manage friction

Some alternative to increase the size that improve usability:

- Visual stimulus, undo,..

Some "editing" actions must be dealt with care (send, upload, download, burn, share):

- Highlight relevant elements
    - E.g. Call To Action buttons
- Possibility of undoing (even temporarily)
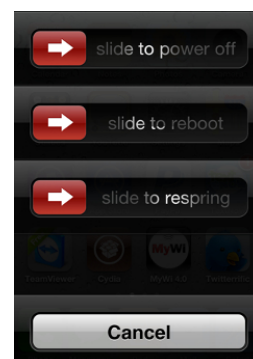   - E. g. Google's mail

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Design Guidelines

Manage friction

Design with friction to avoid mistakes. Rule of the thumb:

- Make destructive/delicate tasks more difficult
- Increasing the effort to prevent accidents
    - Buttons for non-destructive
    - Slides for destructive

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Design Guidelines

Don't make users wait for content

- Mobile connections are not stable: don't present blank pages to the user
- Use skeletons, lower resolution images…
- Update as soon as possible

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Design Guidelines

Use gestures prudently

Gestures can save space: they do not require visual representations

- Hard to remember and use
- Not currently standarized
- Make use of standard gestures
- Don't use standard gestures for non-standard tasks

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Design Guidelines

Continuous integrated experience

- When possible, synchronize app with desktop interaction (tasks can be continued on different devices)
- Do not replicate exact (web) experience on mobile
- Be consistent with users' expectations: in terms of visual elements, interactions…
- Don't open external web browsers to complete tasks
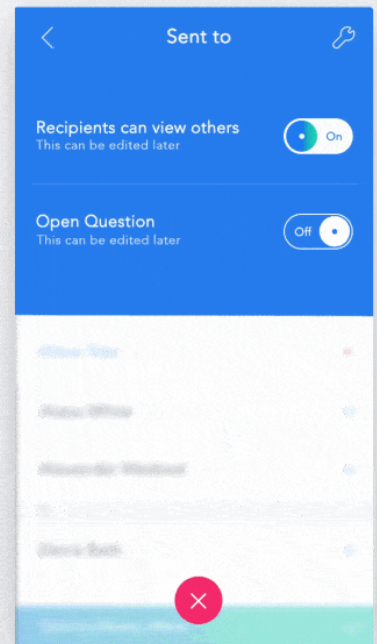- Don't create dead en pages

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Design Guidelines
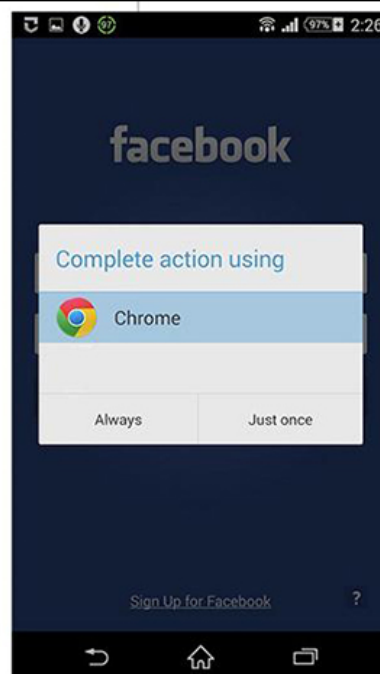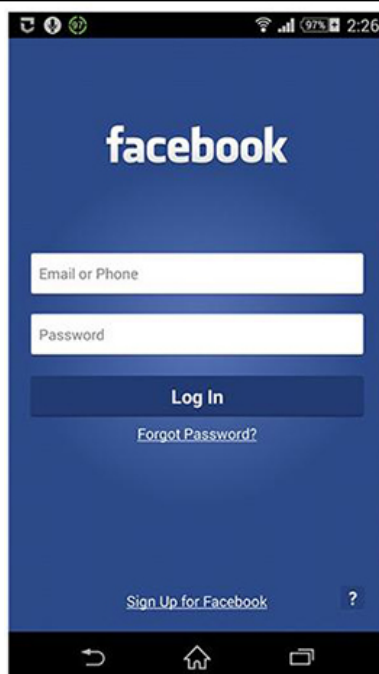
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Fitts' Law in ui design. Applications

- Pie menus difficult to design!
  - Second layer changes the size and distance
  - Organizing by frequency may be a problem (learning)

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