Lecture 5

Form Design

FIT5152 - User Interface Design and Usability

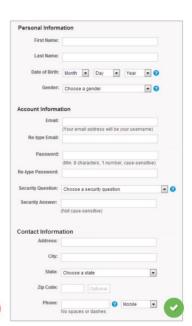# Learning objectives

In this lecture you will learn about:

- Data input and fill-in forms
- Desktop online forms and their design guidelines
- Mobile forms and their design guidelines

Forms

- Form design is important
- We fill in forms everyday
- Major events in our lives involve filling a form
- Examples of forms:
  - Forms to register, sign up, or log in/sign in
  - Job application
  - Visa application
  - Passport application
  - Home loan application
  - Surveys and questionnaires
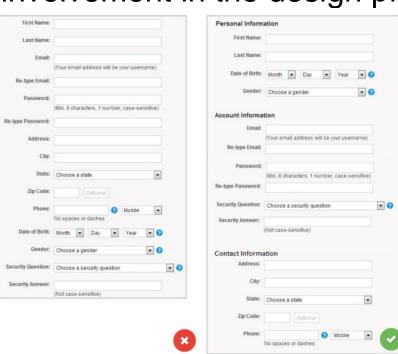 - Online shopping and checkout

(Jarret and Gafney 2009)

Group together related fields. Image credits: NNGroup

Issues with Forms

- Research shows people do not like forms, even before they have seen them

- Most forms go from the first draft to the final version with no testing and without any improvement

- There is limited user involvement in the design process

(Jarret and Gafney 2009)

Group together related fields. Image credits: NNGroup
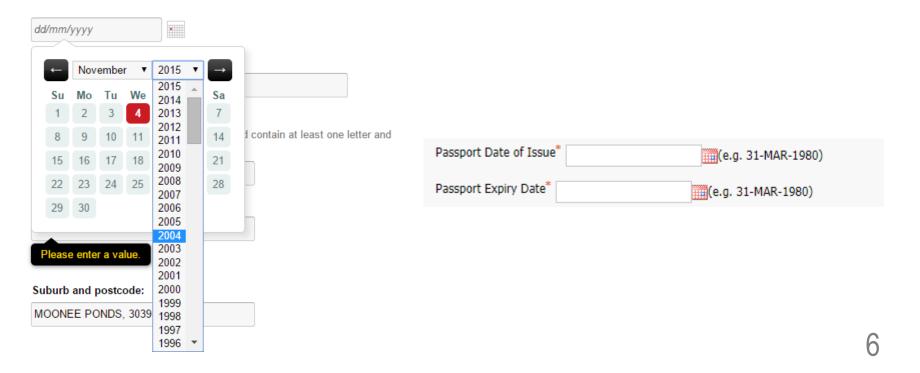
Issues with Forms (cont'd)

- Too long
- Unclear purpose, asking for information that isn't relevant to the user's goals
- Poor information about the requirement of a given field
- Asking for the same (or similar) information more than once
- When there is an error, it does not clearly indicate where it happened or how it can be corrected
- Not clarifying the right data format
- Not providing the necessary space
- Taking user control away

Data and Time Format

- Different date formats
- Different time formats
  - 12-hour or 24-hour clock E.g. 2 PM or 14:00
- The level of details you want
  - E.g. Today, 10 AM, 10:10, 10:10 AM, or 10:10:03 AM

dd/mm/yyyy

| ← | November ▼ | 2015 ▼ | → |

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d contain at least one letter and

Please enter a value.

Suburb and postcode:

MOONEE PONDS, 3039

Passport Date of Issue* [   ] (e.g. 31-MAR-1980)

Passport Expiry Date* [   ] (e.g. 31-MAR-1980)

A Study

A study by Formulate Information Design for SEEK about entering mobile phone number in online forms

Out of 2,081 mobile phone numbers:

– 83% were entered with no spaces

– 11% as chunks of 4, 3 and 3 digits with spaces in between

– There were some 40 other variants

Design recommendations:

– Provide an example of the acceptable formats in the form

– Clearly specify if country and area codes are needed

– Consider at least 12 characters (10 digits plus 2 spaces)

Source https://www.formulate.com.au/blog/mobile-phone-numbers-in-electronic-forms/

Data Quality Problem

- Data entered in the forms are often incomplete or have poor quality

- Well designed forms can improve data quality

- The aim is to ensure correct data entry with minimal user effort

Data Entry

- User generated data is different from user selected data
- User generated data enables to collect more data but are prone to errors

User selected data

User generated data

Steps in Filling a Form

From the User's Perspective

- Entering different pieces of information requires a range of cognitive skills

- Users need to understand (the four steps):

    1. what data is required, understanding the question itself

    2. where to find that data

    3. how to assess whether the answer fits the question

    4. how to enter the data, where and in what format

(Jarret and Gafney 2009)

The Steps

Step 1: Understanding the question

- – Questions should be easy to understand
- – Use familiar concepts and words
- – Ask one question at a time
- – Long forms can be broken up by topic

(Jarret and Gafney 2009)

The Steps (cont'd)

Step 2: Finding an answer

The aim in this step is to make it easy for the user to find the answers (e.g. user selected data) and provide help and hints

- There are **four different places to find answers**:
  1. *Slot-in* answers: answers that depend on our memory
     - E.g. address, or phone number
  2. *gathered answers:* answers that need to be personally collected and *gathered* (or very distant memories)
     - E.g. the credit card number or the tax file number
  3. *Third-party* answers: answers that require asking other people,
     - E.g. when you need to ask your partner about the dinner reservation (whether to book the table indoors or outdoors)
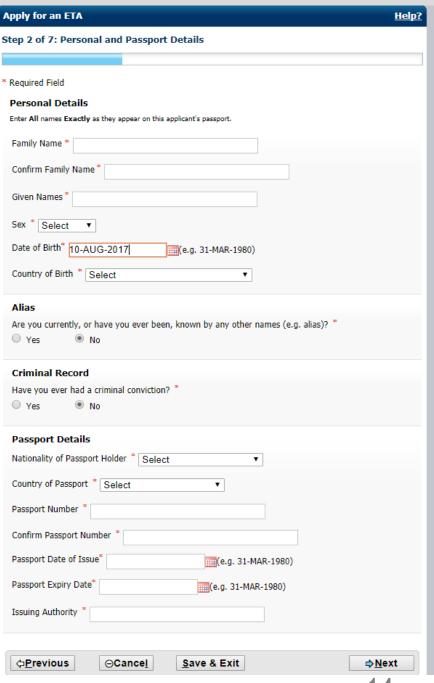 4. The rest of the answers can be considered as ***created***. They require the least amount of memory.

(Jarret and Gafney 2009)

Example

Jane using an online form for buying flowers for her mum		
Information the user needs	How the user finds the answer	The type of the answer
Name	In her head	Slot-in
Method of payment	Needs to get the credit card from her bag	Gathered
Time of delivery	Makes a phone call to check when her mum will be home	Third-party
Message	Thinks for a few seconds to make up something appropriate	Created

(Adapted from Jarret and Gafney 2009, pg 57)

Example

- Identify four types of answers in this form (**Slot-in**, **gathered**, **third-party**, or **created** answers).

- Identify **user generated** data and **user selected** data

https://www.eta.immi.gov.au/ETAS3/etas

The Steps (cont'd)

Step 3: Judging an answer

- Make it easy to judge the answer
- Provide truthful explanations why this information is needed and how it will be used to reduce privacy errors
  - E.g. when a user does not want to provide their phone number

User name:

First Name:

Family Name:

Email*:

Your email will be used to send you a passcode

Interests: *remember this will be used by companies to see if you fit the company's culture*

The Steps (cont'd)

Step 4: Entering the answer on the form.

- Make it easy for users to enter the answer
- Convenient and correct tab movement and order
- Provide the options that match the user's knowledge in the head
- Consider 'Other' as the last option for some questions
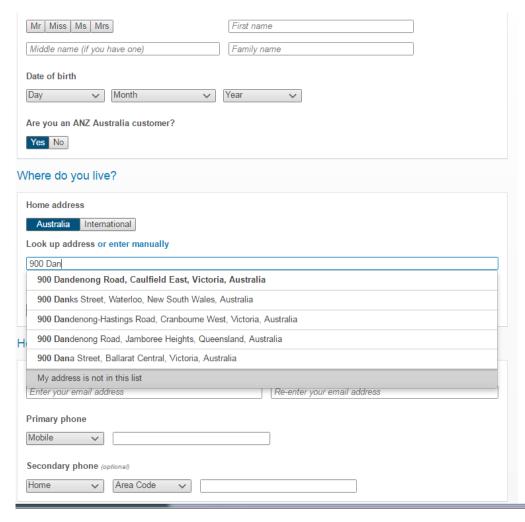- Keyboard entry can be sometimes faster than using the mouse

(Jarret and Gafney 2009)

ANZ Form Example

Find an example for each:
- Easy to understand questions, familiar words, a long question has broken into separate parts (step 1)
- Help with finding the answers, e.g. through using user selected data for slot-in answers (step 2)
- Make it easy to judge the answer, explaining how the information will be used (step 3)
- and make it easy for users to enter the answer (step 4)

Form Design Guidelines

- Create a smooth and natural conversational flow, with logical and sensible order of options

- If the form requires gathered or third party answers, try to store this information

- When the form is split across pages by topic, use a progress indicator

- Error prevention (e.g. through constraints, user selected data, hints and examples)

- Providing useful error messages

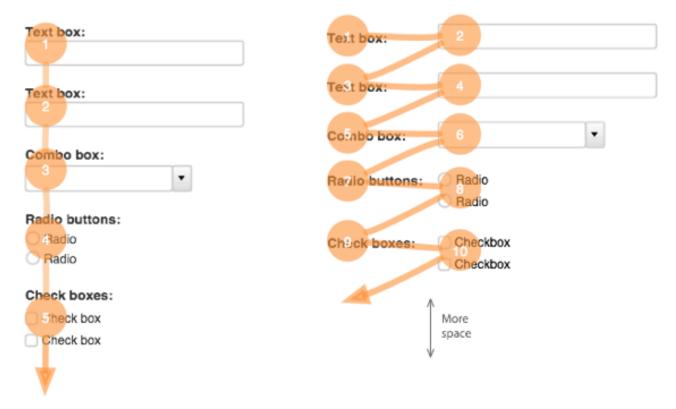- Finish the form smoothly with a 'thank you' or an acknowledgement

(Jarret and Gafney 2009)

Form Design Guidelines (cont'd)

- Meaningful, familiar and standard field labels
- Consistent terminology and abbreviations
- Optional and required fields clearly marked
- Comprehensible instructions
- Use visible space and boundaries for data entry fields
- Differentiate grouped items
- Visually appealing layout (alignment)
- Use lists if possible to minimise errors
- Immediate feedback
- Completion feedback

(Shneiderman et al. 2014)

Forms and Labels

- Labels: vertical labelling vs horizontal labelling
- The number of places you have to look slows down and impedes filling in a form

Source http://uxmovement.com/forms/faster-with-top-aligned-labels/

Vertical Labelling
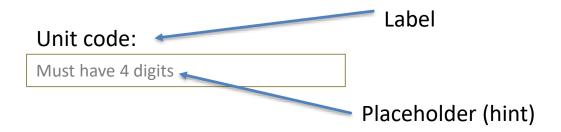
- Horizontal labelling: labels truncated or overlapped
- Vertical labelling: better spacing and better visual flow

Theresa Neil , 2014, Mobile Design Pattern Gallery, Chapter 2

Labels and Placeholders

- Labels tell the user what information to provide in a form field
- Hints help the user with data entry and clarifying the expected format
  - Providing a hint text can reduce errors
  - Providing a hint text can reduce short term memory load
- Hints are commonly implemented using placeholders to reduce the clutter
- Placeholders shouldn't be used for labels as they will disappear

Unit code: ← Label

Must have 4 digits ← Placeholder (hint)

Source: https://www.nngroup.com/articles/form-design-placeholders/

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Placeholders
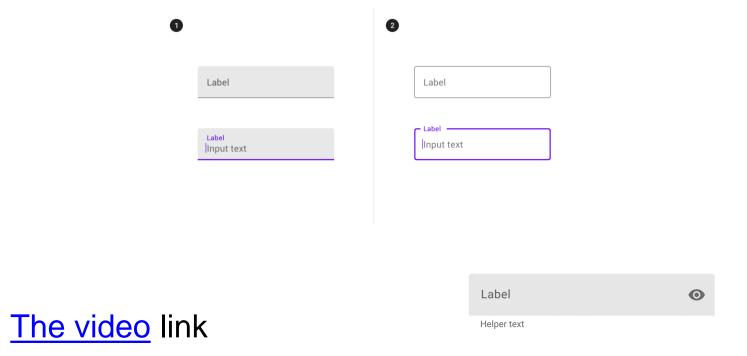
- Issues with placeholders:
  - If it disappears when the user moves to the field, the user might not remember it later (usability problem)
  - If it remains after the user moves to the field, the user has to manually remove it (usability problem)
  - It can be mistaken for automatically filled-in data
  - It can also introduce accessibility issues as they are hard to read because of poor colour contrast, and some screen readers might not read the placeholder aloud

Source: https://www.nngroup.com/articles/form-design-placeholders/

Forms and Material Design
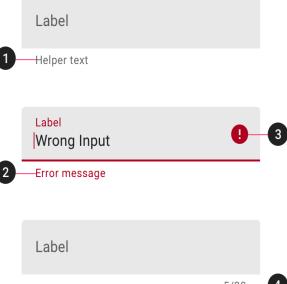
- Use of floating labels and helper text
- Two type of text fields: filled and outlined text fields
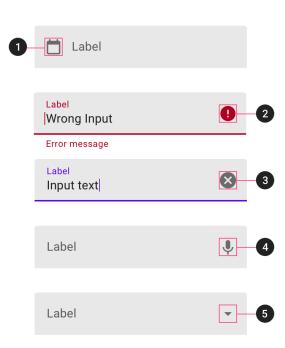

[The video](#) link

Forms and Material Design (cont'd)

Assistive elements

1. Helper text: provides additional guidance
2. Error message: display instructions on how to fix it when an error occurs, replacing the helper text until fixed
3. Icons: can be used to with error messages
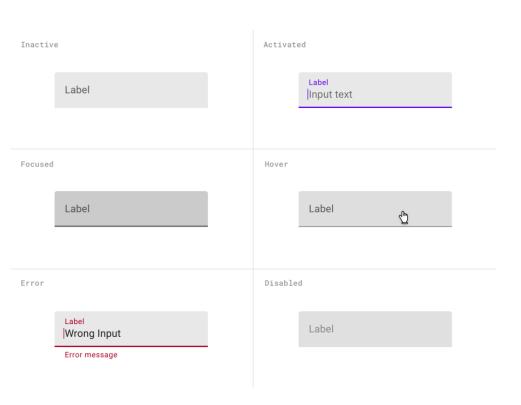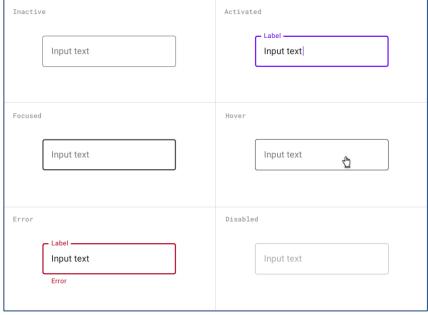4. Character counter: is used if there is a character or word limit

Forms and Material Design (cont'd)

Icon Signifiers

1. They describe the type of input of a text field e.g. a calendar icon
2. Valid or error icon
3. Clear icon: let users clear the text
4. Voice input icon
5. Dropdown icon for nested selection

Forms and Material Design (cont'd)

- Different states of a text field

Forms and Material Design (cont'd)

Three principles

- **Discoverable**
  - Text fields should be discoverable to indicate that users can input information
  - Using filled and outlined text fields to provide a perceived affordance, making the fields discoverable
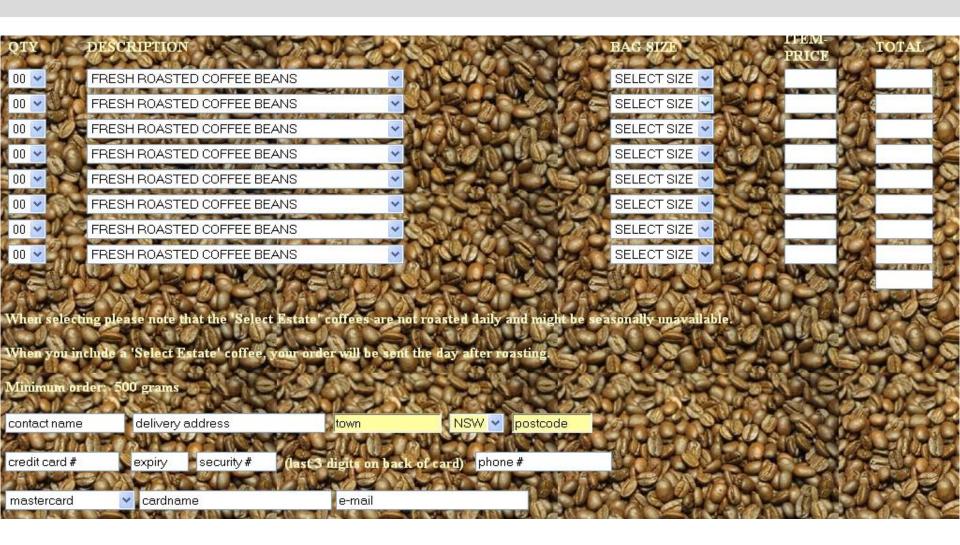- **Clear**
  - Text field states should be clearly differentiated from one another
- **Efficient**
  - Text fields should make it easy to understand the requested information and to address any errors

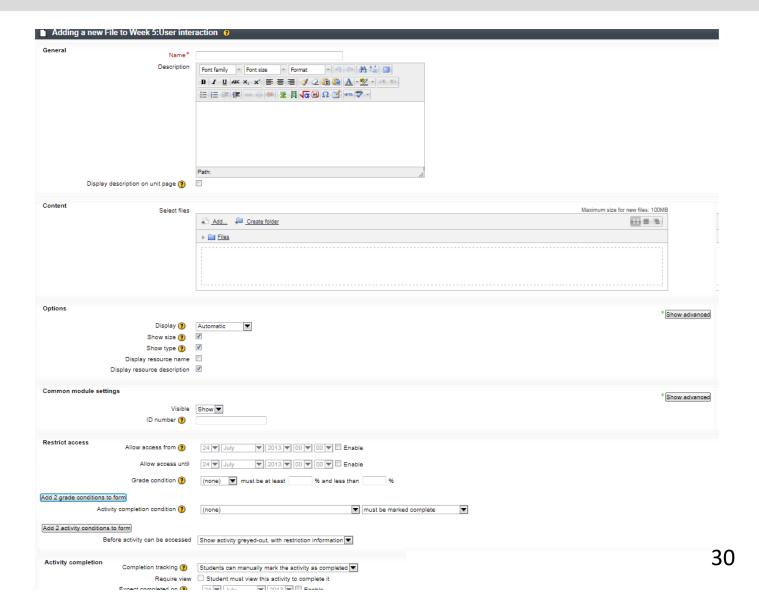Source https://material.io/design/components/text-fields.html#anatomy

Any Design Issues?

Minimise Controls – Example 2

Moodle

Mobile Form Design

- When filling forms on a desktop computer, users have a stable environment

- Mobile users are on the move:
  - They can be distracted/interrupted
  - They need to perform tasks faster
  - The screen size of mobile phones is a constraint
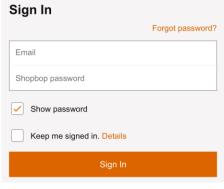
- Mobile forms need to be more efficient and simpler

Chui Chui Tan (2011) http://www.uxbooth.com/articles/mobile-form-design-strategies/

Mobile Form Examples

- Sign-in forms
- Search forms
- Calculator forms
- Check-out forms

Sign-in Forms

- Sign-in forms have only few inputs
- Login or Sign-in for existing users and Register/Sign-up for new users
- An option to remember the password
- An option if the password is forgotten
- An option to hide/show the password
- An option to keep the user signed in
- An option to login through social sign-in

(Neil 2014)

Shopbop login

Sign-in Forms: Passwords

- In Sign-in forms, passwords are usually masked

- Research shows that most users forget their passwords or have trouble remembering them

- Password masking can be a usability issue

- To mask or not mask the password?

- Is masking really making it secure?

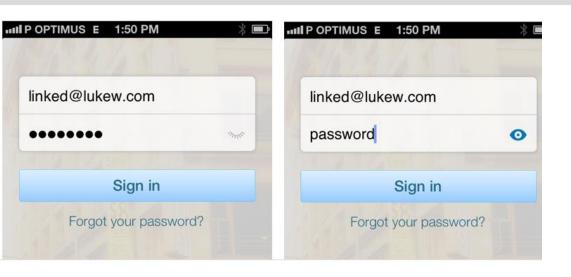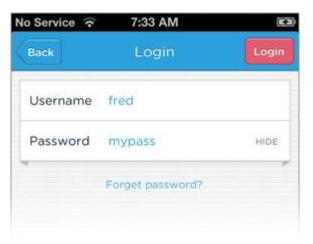- When using the touch keyboard, characters are shown and visible to others

(Wroblewski 2015)

http://www.lukew.com/ff/entry.asp?1941
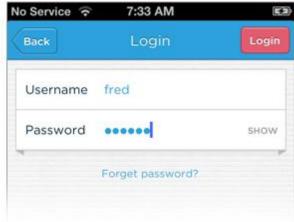
Sign-in Forms – Passwords (cont'd)

- To improve usability, many designers adopted clear passwords

- But unmasking passwords can cause security issues

- Better to give the user both options: hide/show passwords

(Wroblewski 2015)

Show/Hide or Hide/Show as Default?
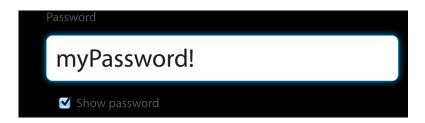
http://www.lukew.com/ff/entry.asp?1941

A Related Study

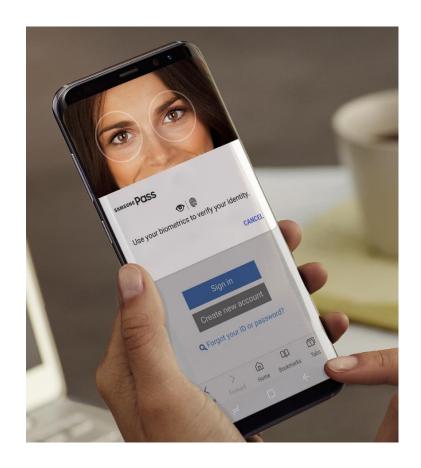The results of a study that tested unmasked passwords:

- Unmasked passwords were unexpected
- Some thought there was an error and lost their trust
- However when participants were offered the option to show or hide
  - They did not consider this as an error
  - They understood the usability benefits
  - It did not affect their trust

Password

myPassword!

☑ Show password

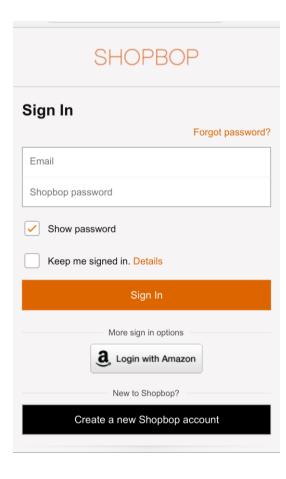Source http://passwordmasking.com/

Emerging Trends for Authentication

- Biometric authentication (e.g. fingerprints, retina and iris patterns, voice) and facial recognition

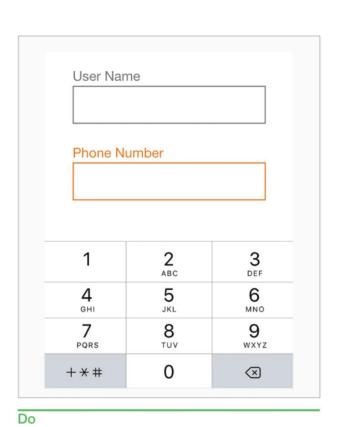# Linking Accounts

- Capturing data from other social connections

General guidelines

- **MATCH KEYBOARD TO INPUT**

Don't

Do

General guidelines
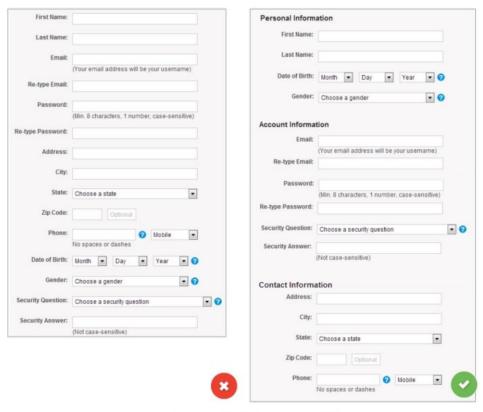
- **LIMIT TYPING – PROVIDE AUTOCOMPLETION**

General guidelines

- **USE GROUPING**

Group together related fields. Image credits: NNGroup

Mobile Form Guidelines

- Replace horizontal labelling by vertical labelling
- Keep the input fields to a minimum and combine similar input fields
- Eliminate redundant and less important entries
  - Is email confirmation necessary?
- Use clear error messages
- Error correction: refocus on the field containing the error
- Consider all possible inputs by the user in the design
- Provide the user with the feedback on the current status and progress
- Inline feedback wherever appropriate

(Neil , 2014) and
http://www.uxmatters.com/mt/archives/2012/09/mobile-inline-form-validation.php

Mobile Form Guidelines (cont'd)

- Provide hint text using appropriate design pattern
- Reduce visual clutter
- Logical grouping of related items
- Shorten the list items to the most popular or primary options

(Neil , 2014) and
Chui Chui Tan (2011) http://www.uxbooth.com/articles/mobile-form-design-strategies/

Summary

- Forms are everywhere

- Form design requires understanding of users, what data is required, and how it can be found and entered.

- Data quality is essential and relies on good design to capture the correct data

- Facilitate data entry and follow the guidelines

"Form abandonment […] is an enormous and costly problem. But compared to mobile, the Web is pretty forgiving, because mobile […] give you, the designer, virtually no leeway for bad design."

Theresa Neil , 2014

References

- Jarret, C. And Gafney, G. (2009) Forms that Work: Designing Web Forms for Usability, Chapter 5, 6.

- Theresa Neil, 2014, Mobile Design Pattern Gallery: UI Patterns for Smartphone Apps, O'Reilly Media; 2 edition. Chapter 2.

- Shneiderman, Plasiant, Cohen, Jacobs (2014) *Designing the User Interface: Strategies for Effective Human-Computer Interaction, Pearson.* Chapter 6

- Luke Wroblewski (2015), Showing Passwords on Log-In Screens http://www.lukew.com/ff/entry.asp?1941

- Luke Wroblewski (2013) Designing for Thumb Flow http://www.lukew.com/ff/entry.asp?1734=

- Mobile Form Design Strategies by Chui Chui Tan http://bit.ly/1g36jwU

- How the float label pattern started by Matt Smith (2013) http://mds.is/float-label-pattern