Localisation

Is this Universal Design?

- Internationalisation: The practice of writing software which can easily be extended to support users from multiple cultural and linguistic backgrounds

- Localisation: The process of taking internationalized software and actually producing a version tailored to users from a particular culture and language background

Localisation Concerns

- Language
  - Spelling variations, e.g. "color" vs. "colour"
  - Terminology variations e.g. "lift" vs. "elevator"
  - Language variations
- Writing System
  - Direction of scan (Left-to-Right vs. Right-to-Left)
  - Character set (various alphabets)

Localisation Concerns

- Display layout

US English

Caption 1 nnnnn   Caption 2 nnnnn

German

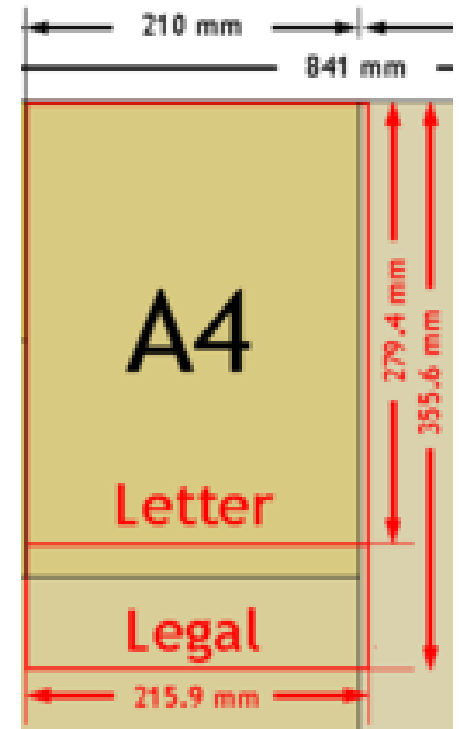BigGermanTranslationOfCaption1 nnnnn

BigGermanTranslationOfCaption2 nnnnn

Arabic

nnnnn 2noitpaC   nnnnn 1noitpaC

Localisation Concerns

- Print layout
  - US Letter paper (8 ½ by 11 inches)
  - A4 paper (210×297 mm)

Localisation Concerns

- Units of measure
  - Imperial - US
    - Feet/inches/miles
    - Pounds, stone
    - Fahrenheit
  - SI – Rest of world
    - Metres/centimetres/kilometres
    - Kilograms
    - Celsius

Localisation Concerns

- Numbers
  - Decimal separator – character varies
    - 1,000 (Ireland) "one thousand"
    - 1,000 (Parts of Europe) "one"
  - Readability delimiters
    - 1,000,000 (Ireland)
    - 1.000.000 (Germany)
    - 1 000 000 (France)
    - 100,0000 (China)

Localisation Concerns

- Dates
  - Does 01/06/2015 mean "January 1, 2015" or "June 1, 2015"?

- Times
  - 5:00pm vs. 17.00

Design Considerations

- A "language tag" or "locale" describes a common language + culture shared by a group of users, often at a national level.
- Documented by IETF "Best Current Practice" 47 http://www.ietf.org/rfc/bcp/bcp47.txt
- Optional extensions for dialect, writing system
  - en – English   zh – Chinese
  - en-US – US English   zh-cmn – Mandarin Chinese
  - en-IE – Irish English   zh-cmn-TW – Mandarin Chinese
                                                          spoken in Taiwan
  - en-GB – UK English
  - es-US – US Spanish   zh-cmn-Hans-CN – Mandarin
                                                          Chinese written with
                                                          simplified system, as used in
                                                          China

Language

```
<html>
    <head>

    </head>
    <body lang="en-IE">
        <h1 style="align:center">
            Learning French
        </h1>
        <p lang="fr">
            Ceci est un paragraphe.
        </p>
    </body>
</html>
```

Design Considerations

- Collect information in user profile, such as:
  - "Preferred language"
  - Time zone
  - Preferred units-of-measure
  - Preferred currency

Design Considerations

- A "resource" is a screen artefact—text, image, etc.—which contains localised information. For example, a caption written in English would be a resource

- Place text captions in a separate file for translation

Design Considerations

- When text *must* be included in an image:
  - "ALT" text should be placed in a separate file, and should match image text (if any) for ease of translation
  - Image "path" should be locale-specific, e.g. medem.com/images/en_us/next_button.gif

Design Considerations

- Layout Technique 1
  - Produce general layout that will work for most languages
  - Where needed, make language-specific "override layouts"
- Layout Technique 2
  - "Least common denominator" layouts that will always work
  - Example: restrict print layouts to 210mm by 279mm – works on US Letter and A4

Design Considerations

- Dates
  - Pick a reasonable standard format for storage in your database (e.g. ISO 8601 "2006-05-24T18:15:00Z")
  - Translate for display based on user's locale (5/24/06 10:15am Pacific Daylight Time)

Design Considerations

```
function getDate() {
    var date = new Date();
    var dateAsText;

    if(ILiveInIreland == true)
        dateAsText = date.getDate() + " / "
                        + (date.getMonth() + 1)
                        + " / " + date.getFullYear();
    else
        dateAsText = (date.getMonth() + 1) + " / "
                        + date.getDate() + " / "
                        + date.getFullYear();

    return dateAsText;
}
```

Question

- How could each of the following help to localise your application
  - XML
  - Cookies
  - CSS