
Human Computer Interaction

Interactive Design Basics

Lecture # 8

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Screen Design and Layout

Tools for layout

- Grouping of items
- Order of items
- Decoration - fonts, boxes etc.
- Alignment of items
- White space between items

Grouping and Structure

- Logically together \Rightarrow Physically together

Billing details:

Name

Address: ...

Credit card no

Delivery details:

Name

Address: ...

Delivery time

Order details:

item

quantity cost/item cost

size 10 screws (boxes)

7 3.71 25.97

.....

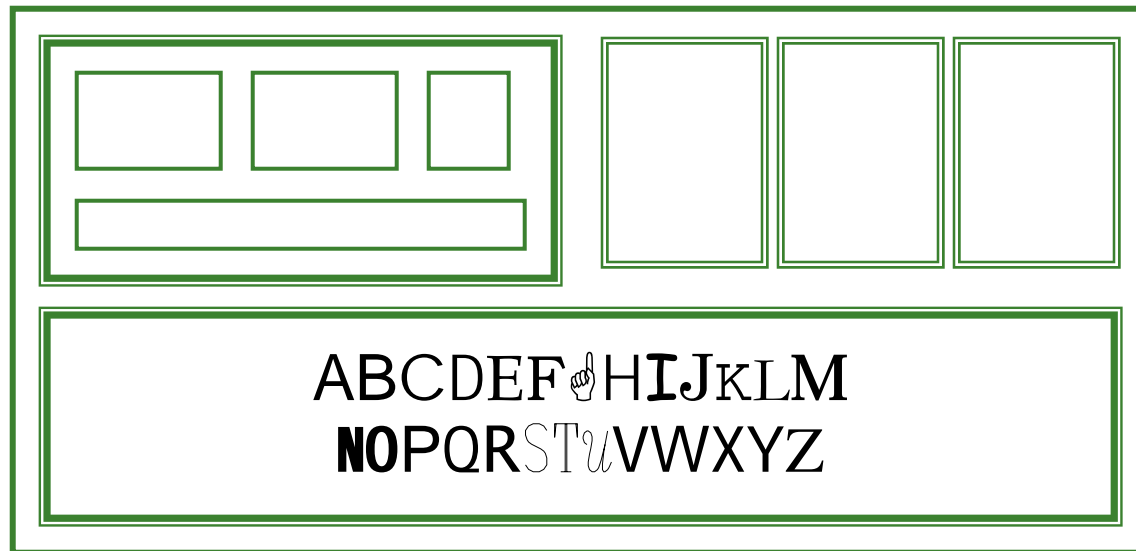
...

Order of groups and items

- Think! - what is natural order
- Should match screen order!
 - Use boxes, space etc.
 - Setting up tab key order for data entry forms

Decoration

- Use boxes to group logical items
- Use fonts for emphasis, headings
- But not too many!!



Alignment - Text

- You read from left to right (English and European)
⇒ align left hand side

Willy Wonka and the Chocolate Factory
Winston Churchill - A Biography
Wizard of Oz
Xena - Warrior Princess

Boring but
readable!


Fine for special effects
but hard to scan

Willy Wonka and the Chocolate Factory
Winston Churchill - A Biography
Wizard of Oz
Xena - Warrior Princess


Alignment - Names

- Usually scanning for surnames
⇒ make it easy!

Alan Dix
Janet Finlay
Gregory Abowd
Russell Beale



Dix , Alan
Finlay, Janet
Abowd, Gregory
Beale, Russell



Alan	Dix
Janet	Finlay
Gregory	Abowd
Russell	Beale



Alignment - Numbers

Which is biggest?

532.56
179.3
256.317
15
73.948
1035
3.142
497.6256

Alignment - Numbers

- Visually:
 - Long number = big number
- Align decimal points
- Or right align integers

627.865
1.005763
382.583
2502.56
432.935
2.0175
652.87
56.34

Multiple Columns

- Scanning across gaps

sherbert	75
toffee	120
chocolate	35
fruit gums	27
coconut dreams	85

Multiple Columns

- Use leaders (Lines linking the columns)

sherbert	75
toffee	120
chocolate	35
fruit gums	27
coconut dreams	85

Multiple Columns

- Use of colours/shading behind rows or columns

sherbert	75
toffee	120
chocolate	35
fruit gums	27
coconut dreams	85

Multiple Columns

- Or even (with care!) 'bad' alignment

sherbert	75
toffee	120
chocolate	35
fruit gums	27
coconut dreams	85

White Space – Counter

- Ignore the contents of screen – concentrate on counter
- Screw up your eyes so that screen appears blurred
 - Overall feel of the layout
 - Related elements look separate – something wrong

Space to Separate



Space to Structure



Space to Highlight



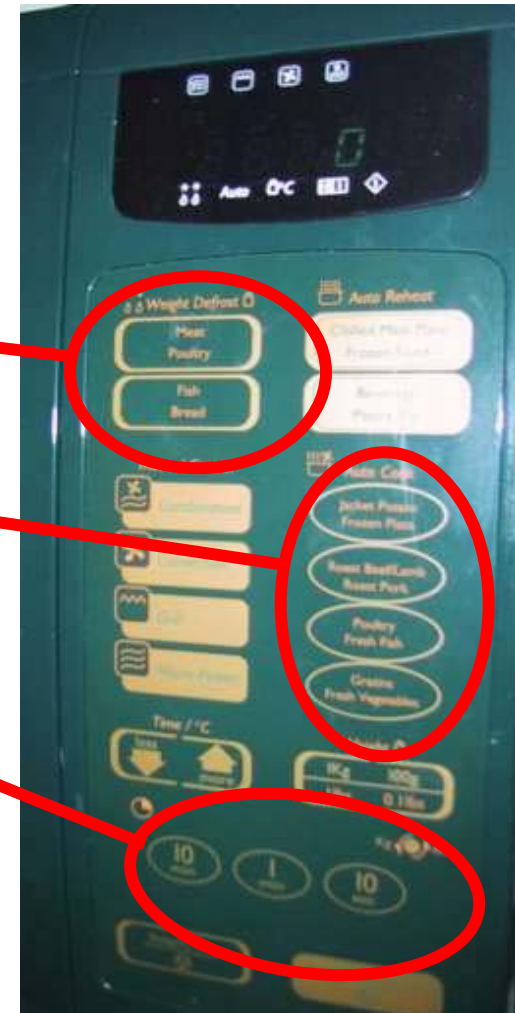
Physical Controls

- Grouping of items

Defrost settings

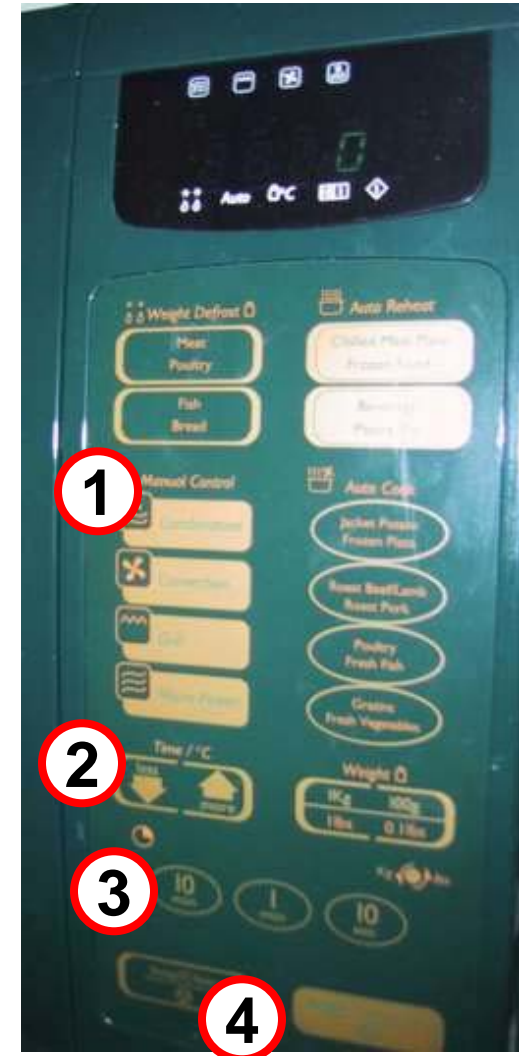
Type of food

Time to cook



Physical Controls

- Grouping of items
- Order of items
 - 1) Type of heating
 - 2) Temperature
 - 3) Time to cook
 - 4) Start

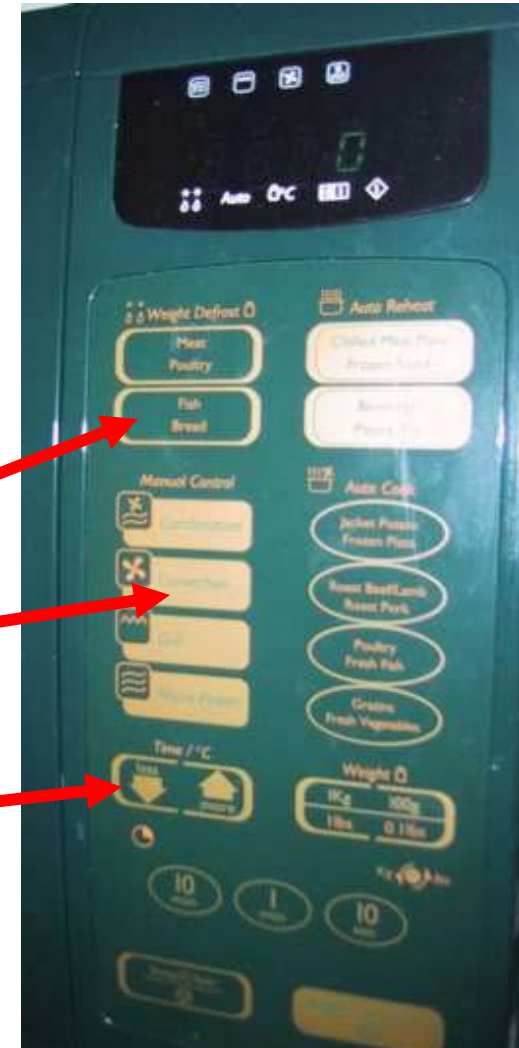


Physical Controls

- Grouping of items
- Order of items
- Decoration

Different colours for different functions

Lines around related buttons (temp up/down)



Physical Controls

- Grouping of items
- Order of items
- Decoration
- Alignment

Centred text in buttons



Physical Controls

- Grouping of items
- Order of items
- Decoration
- Alignment
- White space

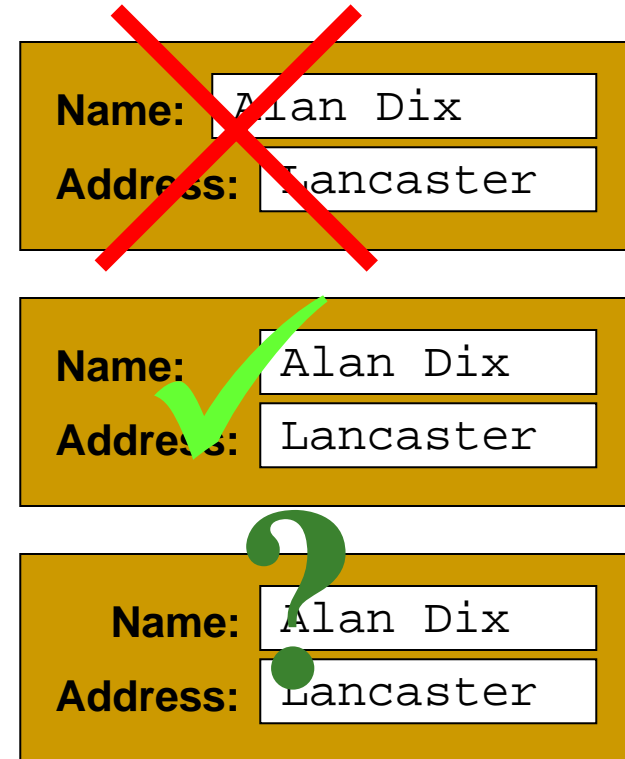
Gaps to aid grouping



User Action and Control

Entering Information

- Form-Based interfaces
 - Presentation + data input
 - Alignment



The image displays three examples of form alignment for a data entry interface, each within a yellow rectangular container. The first example shows left-aligned labels and text, marked with a large red 'X' indicating it is incorrect. The second example shows right-aligned labels and text, marked with a large green checkmark indicating it is correct. The third example shows centered labels and text, marked with a large green question mark indicating it is uncertain or incorrect.

Name:	Alan Dix
Address:	Lancaster

Name:	Alan Dix
Address:	Lancaster

Name:	Alan Dix
Address:	Lancaster

Knowing what to do?

- What is active what is passive
 - Where do you click
 - Where do you type
- Consistent style helps
 - E.g. web underlined links
- Labels and icons
 - Standard – Save, Delete, Print

Affordances

- Shape/Attributes of an object suggest what you can do with it
- Examples
 - Button affords pushing
 - Handle affords grasping/pulling
- For screen objects
 - Buttons/icons afford clicking




Appropriate Appearance

Presenting Information

- Information Presentation – Kind of information
 - Text, numbers, maps, tables
 - Sort Order
- Interactive Interaction – Advantage
 - Allow user chose among several representations

name	size
chap10	12
chap5	16
chap1	17
chap14	22
chap20	27
chap8	32
...	...



Aesthetics and Utility

- Pretty Interface – Not necessarily a good interface
- Aesthetically pleasing
 - User Satisfaction – Increase in productivity
- Several teams work on interface – Consistency
 - Telephone style – Calculator style numeric keypad

- Poster Background

- Good to look at
 - Hard to read



Color and 3D

- Both often used very badly!
- Colour
 - Colour over used because 'it is there'
 - Beware colour blind!
- 3D effects
 - Good for physical information and some graphs
 - But if over used ...
 - E.g. 3D Text

Bad use of colour

- Over use - without very good reason (e.g. kids' site)
- Colour blindness
- Poor use of contrast
- Gray only
 - Can you still read your screen?

Internationalization

- Localisation & internationalisation
- Changing interfaces for particular cultures/languages
- Globalisation
 - Try to choose symbols etc. that work everywhere
- Simply change language?
 - Left-right order etc.
- Deeper issues
 - Meanings of symbols
 - E.g tick and cross ... +ve and -ve in some cultures



References

- Chapter 5 - Human Computer Interaction by Dix et al.
- HCI Paradigms and User Centred Design, Yan Liu, Wright State University
- User Interface Hall of Fame/Shame

