Topics

- Interface design as multidisciplinary activity
- From interface prototype to implementation
- Guidelines for user-centered interface design
- Interface windows
- Dependencies between windows
- Window navigation
GUI design multidisciplinary

- A team includes
  - Analyst
  - Designer
  - Technology expert
  - Graphic artist
  - Social and behavioral scientist
  - Programmer
Example 7.1 – Contact Management

Organisation Details

Company: Bedrock Stone Quarry Pty. Limited
Phone: (02) 9953 0144
Fax: (02) 9953 2452
Email: stoney@bedrockquarry.com.au
Address: 15 Riverbed Avenue, Bedrock, NSW 2077
Type: Advertiser

OK
Cancel
GUI design guidelines

- User in control
- Consistency
- Personalization and customization
- Forgiveness
- Feedback
- Aesthetics and usability
GUI-program flow of control

- User event
- Call to window
- Call to 4GL-SQL procedure
- Call to external program
- Rule or exit processing
- Perform GUI event

- GUI window
- 4GL-SQL Procedure
- External program
User in control

- Rather “user’s perception of control”
- No mothering principle
- Feedback
Consistency

- The conformance to the GUI vendor’s standards
  - A GUI developer must not be too creative and innovative in the interface design.

- The conformance to the naming, coding and other GUI-related standards developed internally by the organization
  - This includes the naming and coding of the menus, action buttons, screen fields, etc.
  - It also includes any standards for the placement of objects on the screen and consistent use of other GUI elements across all internally developed applications.
Personalization and customization

- The GUI personalization is the customization for a personal use
  - e.g. when a user reorders and resizes columns in a row browse (grid) display and saves these changes as his/her personal preference

- The GUI customization is an administrative task of tailoring the software to different groups of users
  - e.g. when the program can operate differently for novice and advanced users
Forgiveness

- A good interface should allow the users to experiment and make mistakes in a forgiving way.
- The forgiveness encourages an interface exploration because the user is allowed to take erroneous routes but can be "rolled back" to the starting point if necessary.
- The forgiveness implies a multi-level undo operation.
Feedback

- The feedback guideline is a spin-off of the first guideline – the user in control guideline. To be in control implies to know what’s going on when the control is temporarily with the program.

- The developer should build into the system visual and/or audio cues for every user event.

- Hourglass, wait indicator…
Aesthetics and usability

- The **aesthetics** is about the visual appeal.
- The **usability** is about the ease, simplicity, efficiency, reliability and productivity in using the interface.

The issues to consider include
- the fixation and movement of the human eye,
- the use of colors,
- the sense of balance and symmetry,
- the alignment and spacing of elements,
- the sense of proportion,
- the grouping of related elements, etc.

- **Simplicity** – additional and related guideline
Primary window

- Title bar icon
- Title text
- Buttons to minimize, maximize, and close window
- Menu bar
- Toolbar
- Pane
- Vertical scroll bar
- Horizontal scroll bar
- Status bar

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Example 7.2 – Contact Management

Microsoft Outlook – Calendar window

- Progress review meeting (Boardroom) at 09:00
- ITC demo (Training room) at 11:00
- Visit to Oracle at 14:00
Example 7.2 – Contact Management
<table>
<thead>
<tr>
<th>Ad Link</th>
<th>Product</th>
<th>Advertiser</th>
<th>Agency</th>
<th>Central</th>
</tr>
</thead>
<tbody>
<tr>
<td>44300</td>
<td>Capri Body Fashion Lingerie St</td>
<td>Capri Body Fashions</td>
<td>Direct/Advertiser</td>
<td>ATMC</td>
</tr>
<tr>
<td>44301</td>
<td>Capri Body Fashion Lingerie St</td>
<td>Capri Body Fashions</td>
<td>Direct/Advertiser</td>
<td>ATMC</td>
</tr>
<tr>
<td>44302</td>
<td>Capri Body Fashion Lingerie St</td>
<td>Capri Body Fashions</td>
<td>Direct/Advertiser</td>
<td>ATMC</td>
</tr>
<tr>
<td>44303</td>
<td>Capri Body Fashion Lingerie St</td>
<td>Capri Body Fashions</td>
<td>Direct/Advertiser</td>
<td>ATMC</td>
</tr>
<tr>
<td>703135</td>
<td>Classic Sounds Hi Fi Str</td>
<td>Classic Sounds Hi Fi</td>
<td>Direct/Advertiser</td>
<td>ATMC</td>
</tr>
<tr>
<td>791037</td>
<td>Classic Sounds Hi Fi Str</td>
<td>Classic Sounds Hi Fi</td>
<td>Direct/Advertiser</td>
<td>ATMC</td>
</tr>
<tr>
<td>767987</td>
<td>Classic Sounds Hi Fi Str</td>
<td>Classic Sounds Hi Fi</td>
<td>Direct/Advertiser</td>
<td>ATMC</td>
</tr>
<tr>
<td>936551</td>
<td>Classic Sounds Hi Fi Str</td>
<td>Classic Sounds Hi Fi</td>
<td>Direct/Advertiser</td>
<td>ATMC</td>
</tr>
<tr>
<td>1008655</td>
<td>Classic Sounds Hi Fi Str</td>
<td>Classic Sounds Hi Fi</td>
<td>Direct/Advertiser</td>
<td>ATMC</td>
</tr>
<tr>
<td>612797</td>
<td>Centrepoint Toyota Dealers</td>
<td>Centrepoint Toyota Dealers</td>
<td>Direct/Advertiser</td>
<td>ATMC</td>
</tr>
<tr>
<td>612814</td>
<td>Centrepoint Toyota Dealers</td>
<td>Centrepoint Toyota Dealers</td>
<td>Direct/Advertiser</td>
<td>ATMC</td>
</tr>
<tr>
<td>1076412</td>
<td>NWS9 Promotions/Competition</td>
<td>NWS9 (SA)</td>
<td>Young &amp; Rubicam Adelaide</td>
<td>ATME</td>
</tr>
<tr>
<td>1461650</td>
<td>NWS9 Promotions/Competition</td>
<td>NWS9 (SA)</td>
<td>Media Edge/Yng &amp; Rubicam</td>
<td>ATME</td>
</tr>
<tr>
<td>960401</td>
<td>Gateway Tasmania Tourism</td>
<td>Gateway Tasmania Ltd</td>
<td>Andrews Thomas&amp;Mallinson</td>
<td>ATME</td>
</tr>
<tr>
<td>955070</td>
<td>Gateway Tasmania Tourism</td>
<td>Gateway Tasmania Ltd</td>
<td>Andrews Thomas&amp;Mallinson</td>
<td>ATME</td>
</tr>
<tr>
<td>1177271</td>
<td>Meander HorseDrawn Coach</td>
<td>Meander Coaches</td>
<td>Direct/Advertiser</td>
<td>ATME</td>
</tr>
<tr>
<td>964005</td>
<td>Gateway Tasmania Tourism</td>
<td>Gateway Tasmania Ltd</td>
<td>Andrews Thomas&amp;Mallinson</td>
<td>ATME</td>
</tr>
<tr>
<td>1403901</td>
<td>Atomfest Student Film Festival</td>
<td>Aust Teachers Of Media</td>
<td>Direct/Advertiser</td>
<td>ATME</td>
</tr>
<tr>
<td>617484</td>
<td>Examiner Newspaper</td>
<td>Examiner Newspaper</td>
<td>Direct/Advertiser</td>
<td>ATME</td>
</tr>
<tr>
<td>628823</td>
<td>Examiner Newspaper</td>
<td>Examiner Newspaper</td>
<td>ZZ TV Agency (TV Use Only)</td>
<td>ATME</td>
</tr>
<tr>
<td>617484</td>
<td>Examiner Newspaper</td>
<td>Examiner Newspaper</td>
<td>Direct/Advertiser</td>
<td>ATME</td>
</tr>
</tbody>
</table>
## Multi-pane row browser

### Agencies

<table>
<thead>
<tr>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virgin Advertising (VIC)</td>
<td>Contact: Chris Frayman 0412 386 806. 4/11/98. Gill.</td>
</tr>
<tr>
<td>Wade-Ferrell Larkins (NSW)</td>
<td></td>
</tr>
<tr>
<td>Walker Wamble Media (NSW)</td>
<td>Accreditation confirmed June 96. Doug</td>
</tr>
<tr>
<td>Webster Marketing Svcs (NSW)</td>
<td>(02) 6228 1800. Gill. 15/12/98.</td>
</tr>
<tr>
<td>Whybin TBWA &amp; Partners (NS...)</td>
<td>Previously known as Box Emery &amp; Partners. Media buying for this agency is thru BO.</td>
</tr>
</tbody>
</table>

### Advertisers

<table>
<thead>
<tr>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Briquettes Australia</td>
<td>Fuel merchants and manufacturers of heating products (Heat-a-brix) Ph: 03 9398 8231</td>
</tr>
<tr>
<td>Hardings Hardware Stores</td>
<td></td>
</tr>
</tbody>
</table>

### Products

<table>
<thead>
<tr>
<th>Description</th>
<th>Category</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Briquettes Heat A Brix</td>
<td>BBQ's &amp; Equipment</td>
<td>Artificial heating product for wood fire. Burns 3 times</td>
</tr>
</tbody>
</table>

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Tree and row browser

AdEx2000 Data Collection and Quality Control - [Agency Groups]

Agency Groups
- Carat Consortium
  - Carat Australia Media Group
    - Carat Australia Sub-Group (NSW)
  - Equmedia Consortium
    - AIS Group
      - AIS Media (NSW) Sub-Group
      - AIS Media (QLD) Sub-Group
      - AIS Media (SA) Sub-Group
      - AIS Media (VIC) Sub-Group
    - AIS Media (WA) Sub-Group
    - Total Media (VIC) Sub-Group
    - Bowtell Clarke Yole Group (WA)
    - Charterhouse Adv Sub-Group
    - DMB&B Group
    - Euro RSCG Partnership Group
    - MediaCompete Group
      - MediaCompete (NSW) Sub-Group
      - MediaCompete (VIC) Sub-Group

Agencies for - AIS Media (VIC)

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>974</td>
<td>Advertising Works (VIC)</td>
</tr>
<tr>
<td>557</td>
<td>AIS Media (VIC)</td>
</tr>
<tr>
<td>612</td>
<td>C&amp;N Advertising Pty Ltd (VIC)</td>
</tr>
<tr>
<td>677</td>
<td>Francis Agency The (VIC)</td>
</tr>
<tr>
<td>816</td>
<td>Leeds Media &amp; Comm Svcs (VIC)</td>
</tr>
<tr>
<td>724</td>
<td>Magnum Opus Advertising (VIC)</td>
</tr>
<tr>
<td>628</td>
<td>Nicholson Guthrie Advtg (VIC)</td>
</tr>
<tr>
<td>588</td>
<td>Sanford Vick &amp; Assoc (VIC)</td>
</tr>
<tr>
<td>499</td>
<td>SSB Advertising (VIC)</td>
</tr>
<tr>
<td>568</td>
<td>Us Advertising (VIC)</td>
</tr>
<tr>
<td>665</td>
<td>Wilson Everard Advtg (VIC)</td>
</tr>
</tbody>
</table>
Web page

Macquarie University Library - Microsoft Internet Explorer - [Working Offline]

File Edit View Favorites Tools Help

Address http://www.lib.mq.edu.au/

Macquarie University Library

INFORMATION RESOURCES

Catalogue
Locate the Library's books, journals, newspapers, videos & multimedia

Databases
Find a database to research a topic for your essay, thesis or report

JournalSearch
Find full text journals online

Reserve Collection
Where to find readings for your course and past exam papers

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Secondary window

- Modal or modeless
- No “bars” – menu bar, toolbar, scroll bar, status bar

- Kinds
  - Dialog box
  - Tab folder
  - Drop-down list
  - Message box
Dialog box

Field prompt

Not editable field value

Editable field value

Update Product - 12 Volt World The

Details

Product Details:

ID: 161557
Description: 12 Volt World The
Category: Energy Retail
Status: Active

Created by: JAS
Created on: 01/01/1990
Last Modified by: GAL
Last Modified on: 21/12/1998

Notes:


OK
Cancel
Example 7.3 - Contact Management

Details

Task
Organisation: ABC Radio
Contact: Anne Norton
Task: Install AimView
Value: 1000

Action: Visit
Priority: Normal

Notes: A new setup is required for Cleese Electrical. All Media in NSW.

Created: 09/10/98 18:34
Due: 08/05/19 13:45
Completed: 

New Event
OK
Cancel
Example 7.4 - Contact Management

Maintain Organisations

ABC Radio

General | Postal Address | Courier Address | Contacts

Leonard Norton
Elle Norton
Anne Norton
Gloria Norton

Add | Edit | Delete

OK | Cancel | Apply
Drop-down list
Message box

AIM2000 Data Dictionary Maintenance

No Ad Link modified by the Merge!

OK
Document and its view
Single document interface
Multiple document interface
Stereotyping for GUI design

<<Primary Window>>
Product Browser

<<toolbox button / menu item>>
Insert

<<toolbox button / menu item>>
Delete

<<toolbox button / menu item / double click>>
Update
State stereotypes

- Primary window
  - Pane in primary window
  - Row browser
  - Tree browser
  - Web page

- Secondary window
  - Dialog box
  - Message box
  - Tab folder

- Window data
  - Text box
  - Combo box
  - Spin box
  - Column
  - Row
  - Group of fields
Activity stereotypes

- Drop-down menu item
- Pop-up menu item
- Toolbar button
- Command button
- Double click
- Picklist selection
- Keyboard key
- Keyboard function key
- Keyboard accelerator key
- Scrolling button
- Window close button
Window navigation diagram

- **Product Browser**
  - **Insert**
  - **Update**
  - **Delete**

**Dialog boxes**:
- **Insert Product**
  - **OK**
  - **Cancel**
  - **Save**
  - **Clear**

- **Update Product**
  - **OK**
  - **Cancel**
  - **Save**
  - **Clear**

- **Delete Product**
  - **OK**
  - **Cancel**
  - **Save**
  - **Clear**
Example 7.6 - Telemarketing

Diagram illustrating the user interface of a telemarketing system, showing the main window with options for Next Call, Quit, Campaign Details, and Supporter History, as well as secondary windows for Order, Reschedule, and Welcome Message.
Summary

- The GUI design is a **multidisciplinary activity** requiring a combined expertise of a few professions.
- The design must adhere to the **guidelines** published by the manufacturer of a Windows interface adopted in the project.
- The Microsoft Windows interface distinguishes between the **primary window** and **secondary window**
  - Primary window can be a row browser, tree browser or Web page.
  - Secondary window can be a dialog box, tab folder, drop-down list or message box.
- **Window Navigation Diagram** captures the possible navigation paths between application windows.