Practical GUI Screen Design: Making It Usable

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ABSTRACT

There is much more to designing usable GUI screens than making them look good. The way a screen looks should tell the user how to interact with it, and what behavior to expect. Screen design is about visual communication, the bridge between the look and the feel of the user interface. In this full day tutorial you will examine the principles of good screen design, including a detailed examination of screen layout, templates and metaphors.

The tutorial provides a clear understanding of how to take advantage of user knowledge when creating screen designs that work. Examine layout techniques, including colour, fonts and symbols, and learn the principles of creating easy-to-use software and interactive new media productions. The tutorial is very much hands-on with exercises – you will put the skills you learn into practice.

Learn valuable tips and techniques for the best ways to use icons, controls, text and graphics in user interfaces.

Keywords

User interface design, screen design, graphic design, visual design, interaction design, user-centred design.

TUTORIAL OVERVIEW

With the proliferation of graphical user interfaces (GUIs) many issues and problems have arisen regarding their design, in particular the design of GUI screens. In essence, screens enable the dialog to take place between the user and the system. Failure to communicate clearly results in an application that is difficult to use. This is primarily due to the plethora of widgets and objects that are now available. The variety of screen elements means that there is an infinite number of combinations possible and consequently many decisions to be made. Making the best decisions and trade-offs for a specific application and particular instance is often difficult and requires GUI skills and knowledge. Adhering to standards adds to the complexity.

Screen design for GUIs not only encompasses the selection and layout of widgets and objects, but extends to the behavior of those widgets and the way in which users interact with the interface. Screen design covers both the visual and behavioral aspects of a GUI; the design of both requires close attention to ensure usability. Practical GUI Screen Design is a one day tutorial that covers many aspects of GUI design pertinent to screen design.

The tutorial is highly visual, with many examples of both good and bad screen design. Each point is illustrated, described and discussed, giving the tutorial a "real world" feel. You will also learn valuable tips and techniques for the best ways to use icons, controls, text and graphics in user interfaces.

This is an intermediate-level, full day tutorial.

Design Criteria

User interface design is a blend of art and science. There are three primary design criteria in software interface design:

- Usability: can users easily learn and effectively interact with the system?

- Functionality: what functions and controls are available to allow optimal use of the system?

- Visual communication and aesthetics: how does the visual appearance and spatial location of the elements optimise functionality?

What is Usability?

- Making the technology transparent

- Providing optimum access to functionality

- Focusing on the task in context

Anatomy of a Window

A screen is conceptually made up of four layers. The basis is the window which is like a canvas. The template sits on the window and it divides up the screen real estate into its components, specifying the designated role of each area. A metaphor, if required, is a concept that helps the user elucidate the function of the window. The screen elements

that sit on all of this are the controls with which the user interacts and accesses functionality.

Layout and Design

Graphic design details are not cosmetic matters or decorative touches, but an aid to communication. Graphic elements are often referred to as the "look and feel" of an application.

Successful layout and design is achieved through visual harmony, providing cues to functionality and clarity and communication. There are a range of principles that can be used to achieve these goals and improve usability.

- Colour affects both the way we react to a system and how we perceive the importance of screen elements.

- Care needs to be taken to ensure that colour does not undermine usability.

- Icons can make an interface visually more interesting and are appropriate when they communicate better than text.

- Typography should be clear, easy to read and not get in the way of usability.

- Language used throughout an application, including messages, should be natural and concise.

The Design Process

- Screen layout is about communication and usability, not making a screen "pretty".

- Design is a rational, non-arbitrary process where every decision can be justified.

- Avoid emotional decisions or those based on personal preferences.

- Often design decisions are trade-offs, generally in favour of usability or software/hardware constraints.

Design Considerations

The advent of GUIs has meant more, not less, visual clutter in most environments. In addition to the standard being used there are three main areas to consider when organising elements on the screen:

Visual harmony
- Proportion
- Balance
- Rhythm

Clarity and communication
Each screen element needs to enhance communication and justify its existence. There should be no superfluous elements on screen; everything must communicate. We examine:

- Alignment Grids
- White Space
- Bounding Boxes
- Macro and Micro Views
- Visual Differentiation
- Overly Literal Translation
- Depth Illusion in Interfaces
- Highlighting
- Gratuitous Dimensionality

Providing clues to functionality
The key to a successful user interface is usability, so each screen must effectively communicate the functionality available on that screen.

- Grouping Information
- Revealing Structure
- Affordances
- Information Hierarchy

AUDIENCE

The tutorial is aimed at computer professionals involved in user interface design, including systems analysts and designers, business analysts, software developers, multimedia developers, visual design managers and computer-based training authors. It is also aimed at students and graduates of HCI. It is an advantage if attendees are familiar with GUIs and/or GUI design. The tutorial may also be of interest to HCI educators and researchers, due to the tutorial's hands-on, practical, real-world perspective.

INSTRUCTOR

Cliff Wilding is a Senior User Interface Design Consultant with The Hiser Group, based in Melbourne, Australia. He has worked on numerous projects, performing analysis, interface design and usability testing for organizations such as Telstra, Commonwealth Bank of Australia, Australia Post, Heath Insurance, BHP and the Royal Australian Air Force. These projects involved techniques such as contextual inquiry, user analysis, collaborative design, paper prototyping, usability testing, style-guide development and expert evaluation of user interfaces.

Cliff has been with The Hiser Group for four years. He has a computer science background, and holds a degree in Computer Science (Hons. first class) from The University of Melbourne. He also has six years experience in systems analysis and design, specializing in user interfaces.