

Introduction to Graphical User Interface for Image Matching

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Abstract: Graphical User Interface (GUI) patterns are used extensively in the design of today's software. In this paper our aim is to build GUI patterns commonly recurring solutions that solve common GUI design problems, such as "login," "file-open," and "search." The space of all possible interactions with a GUI is typically very large. Here in this paper GUI is build with MATLAB to work for image matching under various applications like biomedical, crime prevention and main aim of paper is to develop GUI for various basic applications. As GUI's are critical components of today's software; there should be more emphasis on GUI testing.

Keywords: GUI, user center design, design process, design essential.

1. INTRODUCTION

A GUI user interface to a computer. As you read this, you are looking at the GUI or graphical user interface of your particular Web browser. The term came into existence because the first interactive user interfaces to computers were not graphical; they were text-and-keyboard oriented and usually consisted of commands you had to remember and computer responses that were infamously brief. The command interface of the DOS operating system (which you can still get to from your Windows operating system) is an example of the typical user-computer interface before GUIs arrived. An intermediate step in user interfaces between the command line interface and the GUI was the non-graphical menu-based interface, which let you interact by using a mouse rather than by having to type in keyboard commands. Elements of a GUI include such things as: windows, pull-down menus, buttons, scroll bars, iconic images, wizards, the mouse, and no doubt many things that haven't been invented yet. With the increasing use of multimedia as part of the GUI, sound, voice, motion video, and virtual reality interfaces seem likely to become part of the GUI for many applications. A system's graphical user interface along with its input

2. DETAILS OF GUI

A GUI is a type of human-computer interface (i.e., a system for people to interact with a computer) that uses windows, icons, pull-down menus and a pointer

and that can be manipulated by a mouse (and usually to some extent by a keyboard as well). An icon is a small picture or symbol that represents a program (or command), file, directory (also called a folder) or device (such as a hard disk or floppy disk). Several software applications have a restricted functionality That is only accessible after a successful authentication. Independently of the specific implementation, a typical authentication mechanism is normally comprised by two input fields – username and password – and a submit button. Nowadays, it has become noticeable that different GUI implement common behaviour and the majority put into practice the concept of UI patterns providing both similar and recurring solutions (behaviour) for common problems.

History- The history of the graphical user interface, understood as the use of graphic icons and a pointing device to control a computer, covers a five-decade span of incremental refinements, built on some constant core principles. Several vendors have created their own windowing systems based on independent code, but with basic elements in common that define the WIMP "window, icon, menu and pointing device" paradigm.

There have been important technological achievements and enhancements to the general interaction in small steps over previous systems. There have been a few significant breakthroughs in terms of use, but the same organizational and interaction idioms are still in use. Although many GUI operating systems are controlled by using a mouse, the keyboard can also be used with keyboard shortcuts or arrow keys. The interface developments described, below, have been summarized and omit many details in the interest of brevity. The influence of game computers and joystick operation has been omitted.

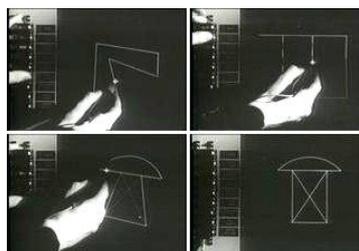


Figure 1: Ivan Sutherland Demonstrating Sketchpad

3. TIPS AND TECHNIQUES

The following tips and techniques that I have learned over the years should prove valuable: Consistency, consistency, consistency. I believe the most important thing you can possibly do is ensure your user interface works consistently. If you can double-click on items in one list and have something happen, then you should be able to double-click on items in any other list and have the same sort of thing happen.

Be prepared to hold the line. When you are developing the user interface for your system you will discover that your stakeholders often have some unusual ideas as to how the user interface should be developed.

Navigation between major user interface items is important. If it is difficult to get from one screen to another, then your users will quickly become frustrated and give up. When the flow between screens matches the flow of the work the user is trying to accomplish, then your application will make sense to your users.

Use color appropriately. Color should be used sparingly in your applications and, if you do use it, you must also use a secondary indicator. The problem is that some of your users may be color blind and if you are using color to highlight something on a screen, then you need to do something else to make it stand out if you want these people to notice it. Expect your users to make mistakes. How many times have you accidentally deleted some text in one of your files or deleted the file itself? Were you able to recover from these mistakes or were you forced to redo hours, or even days, of work? The reality is that to err is human, so you should design your user interface to recover from mistakes made by your users.

Justify data appropriately. For columns of data, common practice is to right-justify integers, decimal align floating-point numbers, and to left-justify strings.

Your design should be intuitively able. In other words, if your users don't know how to use your software, they should be able to determine how to use it by making educated guesses. Even when the guesses are wrong, your system should provide reasonable results from which your users can readily understand and ideally learn.

4. PROCESS OF GUI DESIGN

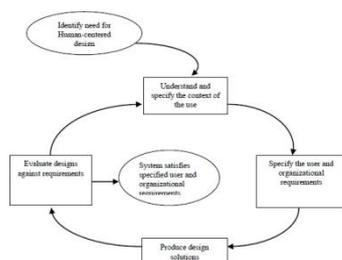


Figure 2: shows a simple view of GUI design process[8].

The first stage is establishing what exactly is needed. It is usually necessary to find out what is currently happening. Identification of needs performed through observation and interviews. The result of observation and interview needed to be ordered in some way to bring out key issues and communicate with later stages of design. Design is a central stage, move from what you want to how to do it. There are numerous rules, guidelines and design principles that can be used to help with this. Humans are complex and we cannot expect to get designs right first time. We therefore need to evaluate a design to see how well it is working and where there can be improvements. Most user interface design involves some form of prototyping provide early versions of system to try out with real users. Finally when we are happy with our design, we need to create it and deploy it. This will involve writing code perhaps making hardware, writing documentation and manuals everything that goes into a real system that can be given to others[8].

5. GUI TESTING TOOLS

To make testing easier and to motivate developers and testers to work in this field various testing tools are provided with different specification and uses. WinRunner, GUITAR, Rational Robot, Spec Explorer, IBM Rational Functional Tester (RFT), Watir, Android are some GUI testing tools[7].

6. CONCLUSIONS

In this paper we have provided different theoretical background used to build GUI for various applications also we have discussed ideas considering all basics of GUI. From this paper we can understand that GUI is graphical approach used for further development of any application.

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