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Use of Intuitive Tools to Enhance Student Learning and User Experience

Rükiye Altın, Mustafa Bektik,
Nuray Ekşioğlu, Can Koray,
Ömer Canbek Öner, Merve Sadetaş,
Hilal Şener, Duygu Şimşek
Bilkent University 06800 Bilkent,
Ankara, Turkey
d_simsek@ug.bilkent.edu.tr

Ching-Chen Ma, Christine Price,
Christopher R. Routh

Rose-Hulman Institute of Technology
5500 Wabash Avenue / Terre Haute, IN 47803
routhcr@rose-hulman.edu

ABSTRACT

Most user interfaces today present system functions by use of verbal or iconic symbols on static 2D menu pages organized in a hierarchical system [1]. This is unnatural to all human beings and must be learned, thus being a barrier between the full use and understanding of computer systems. With this problem in mind we set out to build a website and collaborative application for International Children's Center (ICC) which could be used not only across languages but across ages as well. This effort was tested on a daily basis by a multinational team consisting of students from the United States and Turkey as well as children from the respective countries. This attention to usability will not only lead to an intuitive tool for the client but also teach the students in the course how to build intuitive user interfaces.

Categories and Subject Descriptors

D.2.2 [Design Tools and Techniques]: Structured Programming – software libraries, modules and interfaces, user interfaces.

General Terms

Theory, Design, Human Factors, Languages

1. INTRODUCTION

In this age of e-mails and instant communication there is a floodgate of information available to every user in today's world. The key to allowing students and users to not get washed away by this amount of information is not to limit the information the user can receive but present the information in an intuitive fashion that even students with limited computer knowledge can interact with readily with the system. This eliminates the learning process making the computer a tool that can be operated to its fullest extent by its users. We discussed this with our client, the International Children's Center, and were able to determine that current children's educational games as well as their communication tools lack this quality. This paper discusses the creation of a web powered collaboration tool and web games that allows for students as well as adult users to intuitively use the systems without any prior knowledge.

2. ACHIEVING INTUITIVE BEHAVIOR

The key for effective intuitive behavior is allowing the user to access massive amounts of information in ways that are familiar to them while not compromising content. We choose to accomplish

this through the use of Google technology. We decided that the best way to educate people about issues going on around the world, whether it is current events or history, was to use their Map and Earth tools to display where the issues took place on the maps. When the user clicks on these events they are then presented with information on the subject where they can then comment and share their thoughts on it with their peers.

Since students from two schools in different continents are working on this project, tools such as Google Docs and an SVN repository proved very helpful in coordinating their work.

The great promise of intuitive tools such as Google Map and Earth are their ability to work well with any age group with only adjusting the content that is delivered to the end user and not the tool itself. This allows for students and others to effectively connect the events they see on the news or read about in the history books to a spot on the globe and share the ability to discuss it.

3. USING GOOGLE APIs

Alongside the intuitive nature of the Google Map and Earth applications come many advantages to using their APIs. Being an open source solution most of their technologies have garnered a strong community of software developers that use and review their product. With this comes a extremely large user base to ask questions to as well as people to review the code for security flaws or add features. There is also a benefit to working with Google, because it is such a large company that is focused on software, their documentation for their APIs and example code is some of the most extensive in the world. The tool currently is powered by a GeoRSS or KML style content, feeding the system content via an AJAX FeedReader made available by Google.

These systems while designed for different audiences can be used across many disciplines due to the nature of their interfaces and dynamic content. These could be easily used by computer science educators to get up to the minute information about computer science in the hands of their students facilitating two way discussions of relevant issues and showing students the vast diversity that the field of computer science represents. This is just one example of how intuitive interfaces like our tool, and more human centered interfaces, have begun and will continue to influence the way we teach and live our lives.

3. REFERENCES

- [1] www.daimi.au.dk/~olavb/sjis12/2-KB_p29-60pre.pdf
- [2] <http://code.google.com>