A Context-Sensitive Wiki Help System

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Presented By
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Agenda

- Introduction
- Background and Preliminary work
- Design and Implementation
- Experiments
- Tests & Future Scope
- Demo
- Q & A
Introduction
Yioop

- Open source search engine software by Dr. Chris Pollett.
- Written in PHP and can use MySQL/SQLite3 as back end.
- Blogs, social groups, wikis, and a search engine are Yioop’s most important offerings.
- Why Yioop?
- Current help system in Yioop with over 80 pages of docs.
- Yioop can be placed in more hands than most of the modern day Search engine software or Portals.
Different Help approaches

<table>
<thead>
<tr>
<th>Help Systems</th>
<th>Professional</th>
<th>Community Powered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation oriented</td>
<td>Online Manuals, Professional Docs</td>
<td>Wikis, Wikipedia</td>
</tr>
<tr>
<td>Computer Aided</td>
<td>Help Desk, Chat Support</td>
<td>Q&amp;A sites, Mailing lists, Forums</td>
</tr>
<tr>
<td>Context-Sensitive Help Systems</td>
<td>Context-Sensitive Help in OS', Software Applications</td>
<td>?</td>
</tr>
</tbody>
</table>

**Preliminary Work- MATCH**

- **MATCH: MULTIMODAL ACCESS TO CITY HELP**
  - The majority of commands can be given by speech, by pen, or by a multimodal combination of speech and pen.
  - A simple use case that leverages Multimodal interface to find a cheap Italian restaurant, or a information regarding a group of restaurants.

Fig. 1. MATCH running on Fujitsu PDA

Fig. 2. Unimodal pen command

Preliminary Work - LemonAid

- LemonAid Help System

[2002] LemonAid: Selection-Based Crowdsourced Contextual Help for Web Applications, Parmit K. Chilana, Andrew J. Ko, Jacob O. Wobbrock
Preliminary Work – Microsoft Windows 3.1

- Screen Based Help in Windows 3.1
Procedural Help

Change the vertical alignment of text on a page.

Article 1: Vertical alignment determines the position of the text within a section of a document relative to the top and bottom margins. Vertical alignment is often used to...
User centered Help Design

• Users need help while they are engaged in a task.

• They do not need/consult help ahead of time.

• Users require a “Scent of information” that guides them to help.

• Help should always help the user accomplish the task with minimum to no interruption.

• Finally the Goal: Keep the users engaged in task flow.

Help Authoring Tools

- Adobe RoboHelp and Madcap Flare
- Comparable in features and configuration
- Help is compiled in chapters by default.
- Each chapter corresponds to a Help topic.
- JavaScript Framework used by Developers.
- Both tools support only popups by default.
- Help articles were compiled and integrated with Yioop.
Community Sourced Help

• Wikis for collaborative writing.
• Disconnect between design and usage.
• “Help Yourself” for Help systems.
• Design might not foresee each and everything the user is looking for.
• Community sourced help solves this problem.
Wiki Systems – Implementation Examples.

• Installed and Configuring MediaWiki and TikiWiki.
• How Wikis work.
• Understand Wiki markup and parsing schemes.
• Understand Revision control.
• Yioop Wiki system
Context-Sensitive Wiki Help Design

- Help Interface Design.
- Overlay Help mode like LemonAid
- Problems associated with this approach.
Context-Sensitive Wiki Help Design

• Simple side pane for Context-Sensitive Help.
Context-Sensitive Wiki Help Design

• Similar side panes for right-to-left written languages.
Context-Sensitive Wiki Help Design - Mobile

• Help pane resides on the top.
• Slides down for Mobile interfaces.
• Closes by rolling up to reveal the main user activity on the page.
Context-Sensitive Wiki Help Design –
WYSIWIG Editor

• MediaWiki and TikiWiki style editor.
• Enable users to create and edit wiki articles even if they don’t know Yioop Wiki markup.
• An editor that is modular in nature, works on multiple browsers and reusable.
• Keyboard shortcuts.
Context-Sensitive Wiki Help
Implementation – Wiki Editor
JavaScript framework for Wiki Editor

- JavaScript Framework for wiki editor from ground up.
- The wiki editor is modular and configurable.
- Each button has an identifier and the markup symbols used.
- Easy to add new buttons.
Wiki Editor Usage

- Wiki button identifiers
Wiki Editor Usage

• Attach wiki editor to any text area on page.
  
  <script>editorize("id_of_textarea");</script>

• Selective rendering of Wiki buttons.
  
  <textarea id="wiki-page" class="tall-text-area" name="page" data-buttons="all,wikibtn-bold"></textarea>

• More examples
  
  • data-buttons="all,wikibtn-bold,wikibtn-italic" – render all the buttons except “Bold” & “Italic” buttons.
  • data-buttons="wikibtn-bold" – render only “Bold” button.
  • data-buttons="all" – renders all buttons.

• Keyboard Shortcuts
  
  • Ctrl+b – Bold
  • Ctrl+i – Italic
  • Ctrl+u - Underline
Wiki Systems – Yioop Groups and Wikis

• Groups and Wikis in Yioop.
• Access is controlled by Groups to which the Wiki articles belong.
• Creating Wiki Pages similar to MediaWiki.
Retrieval of Wiki help articles

- How Wiki articles are retrieved in Yioop.
- Synchronous Web page rendering.
- Wiki pages are tightly coupled with the page requested.
Retrieval of Wiki help articles

• Help articles can load from multiple places on the page.
• Help articles are not pre-loaded.
• Asynchronous Help article rendering is required on demand.
• Articles should be loaded with minimal latency.
• Web service implementation to support asynchronous wiki article loading.
• Load only what is required, on the request of the user.
Retrieval of Wiki help articles

CONTD..

```json
{
  "wiki_content": "Creating or Joining a group
You can create or Join a Group all in one place using this Text field. Simply enter the Group Name You want to create or Join. If the Group Name already exists, you will simply join the group. If the group name doesn’t exist, you will be presented with more options to customize and create your new Group.

Browse Existing Groups
You can use the [Browse] hyper link to browse the existing Groups. You will then be presented with a web form to narrow your search followed by a list of all visible groups to you beneath.

[[https://www.seekquarry.com/?c=static&p=Documentation#Managing Users, Roles, and Groups| Learn More..]]

"group_id": "3",
"group_name": "Help",
"page_id": "26",
"page_name": "Browse Groups",
"page_view_title": "Browse/Join Groups",
"can_edit": true
}```
Parsing and Displaying Help articles.

• Client-side Framework for Parsing Yioop wiki to HTML.
• Client-side parsing is performed using Regular expressions to convert Wiki markup to HTML.
• Display the Help contents as HTML in the respective Help Pane.
• Major Wiki systems parse on server-side vs this implementation.
Retrieval of Wiki help articles CONTD..

- Implementing retrieval and display of Wiki help articles.
Rendering Help buttons

• Example of a Context-Sensitive Help button.
Displaying Wiki help articles
Displaying Wiki help articles
Upgrade in Yioop

Start Upgrade For Version 25.

Version stored in the Yioop Database less than 25.

YES

Update Yioop version stored in Yioop Database to 25.

A group with Group ID equal to "HELP_GROUP_ID" exists.

YES

Update the numeric ID for the group from "HELP_GROUP_ID" to the Max group ID, i.e. Move the group to the end of the groups list.

Create The new Help Group with group ID equal to "HELP_GROUP_ID".

Insert Help articles into the New Help Group.

Terminate.

NO

NO
Experimentation and results

• Two rounds of testing, Lasting 351 minutes overall.
• 40 minutes per session on an average.
• First round with minimal to No help at all.
• Intended for Information design based on user feedback.
• Users were able to perform tasks based on their prior knowledge.
• Users used trial and error for performing some tasks If they did not have prior knowledge.
Experimentation and results CONTD..

- Users provided feedback with their experience from First round.
- Problems visited before performing Second round:
  - Mostly concentrated on “What is this? What should I enter? Which should I select?”
  - Provide Procedural help Where necessary.
  - Highlighted Information in the help articles to make sure Users can skim through Help articles quickly.
  - Split context of help to be more specific. More specific the context is, the shorter the article is and the easier it is to provide help.
Experimentation and results CONTD..

- Also requested the users to edit help if required.
- On seeing erroneous articles, Users responded positively by editing and simplifying the articles.
- Changes were made before going into second round.
Creating or Joining a group
You can create or Join a Group all in one place using this Text field. Simply enter the Group Name You want to create or Join. If the Group Name already exists, you will simply join the group. If the group name doesn't exist, you will be presented with more options to customize and create your new Group.

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Learn More..
Experimentation – A small video snippet.
<table>
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<th>Feature</th>
<th>Facebook</th>
<th>Gmail</th>
<th>MS Windows</th>
<th>Yioop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community powered</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Context-Sensitive Help</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Online Manual</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
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<td>Q&amp;A Help</td>
<td>Yes</td>
<td>Yes</td>
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</table>
UI Testing for Yioop and Context Sensitive Help.

• Selenium was initially experimented, discarded due to heavy setup.
• Ended up experimenting and using PhantomJS, a head-less, scriptable web kit browser.
• Tests written in JavaScript and requires just one binary, PhantomJS.
PhantomJS UI Test Suite

- Test Framework triggered from web interface
- Renders results from PhantomJS Shell.
- Easily extensible to add more UI tests.

SeekQuarry Tests

See test case list.

PhantomjsUiTest

UI test results - web

[PhantomJS web UI Tests [5/5]

UI test results - mobile

[PhantomJS mobile UI Tests [6/6]

- PhantomJS can also be used to Unit test other existing JavaScript sources on Yioop.
Conclusion

• Studied the existing Help systems and Information design of Help Systems.
• Explored the combination of Community powered Help with Context-Sensitive Help.
• Experimented by Implementing a Context Sensitive Help system for Yioop.
• Developed components like Wiki Editor, Wiki parser that can be used with any other Wiki system.
• Experimentation and improvements to Help articles based on user feedback were crafting better help articles.
• Improvements were made to Yioop UI based on user feedback.
Future Scope

• Develop a Knowledgebase of Wiki help articles to complement the reference based Documentation system in Yioop.

• One place to manage all help articles also means less work for the Help publishers/Web administrators.

• Clean, up-to-date documentation from user collaborations.

• Role level Access control.
Demo
Q&A
Thank You