#### A Context-Sensitive Wiki Help System

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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

Help Systems	Professional	<b>Community Powered</b>
Documentation oriented	Online Manuals, Professional Docs	Wikis, Wikipedia
Computer Aided	Help Desk, Chat Support	Q&A sites, Mailing lists,Forums
<b>Context-Sensitive Help Systems</b>	Context-Sensitive Help in OS' , Software Applications	

[Stevens2006] Stevens, G. and Wiedenhofer, T. CHIC Proc ACM NordiCHI (2006), 212-221.

# 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.

#### 2. THE MATCH MULTIMODAL ARCHITECTURE



Fig. 1. MATCH running on Fujitsu PDA



Fig. 2. Unimodal pen command

[Johnston2002] Context-Sensitive help for Multimodal Dailogue. Helen Wright Hastie, Michael Johnston, Patrick Ehlen. ICMI '02 Proceedings of the 4th IEEE International Conference on Multimodal Interfaces. 2002.

# Preliminary Work - LemonAid

LemonAid Help System

ankof	America	Online Banking
Jankon	America	Locations - Mail - Help - Sign Off Press Technic
-	Questions asked by other users	X Butther agent to east the test the
2	What do I have to do to cancel a bill pay 3 ? : [1] how to set up a recurring bill payment? [2]	how to set up a recurring bill payment? 5
	Can I set up my credit card payment here? : [0] How do I configure my bill payments? : [0] My bill payment got denied. Who should I contact? : [0]	Answer #2: To set up recurring payments, you have to do this, and that, and the other thing. Answer #1:
0	Provide keywords to see new results, or ask your own questions.	To set up recurring payments, first select a merchant and then you can create a schedule for payments. You can select a specific date for which you want your payment to be recieved every week or month, etc. You can set up recurring payments up to an year in advance.
	4. Enter your account number wit	thave an answer 6 httppropriate merchant name.
M Share web	4. Enter your account number wit statement, then click the subm	h that merchant as it appears on your it request button. The new merchant

[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**

Eswara Raiesh Pinapala - 006522334	Word Help
ige Setup	
Margins Paper Layout	• P Search •
Iop:         1*         Bottom:         1*           Left:         1*         Bight:         1*           Gutter:         0*         Gutter position:         Left	Search help
Portrat Landscape	t More on Office.com: templates
Pages Multiple pages: Normal M	h Article I Vertical alignment of text on a p Article I 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 t
	n Rotate page orientation between portrait an Article I Change the orientation of your entire Word 2007 document or how to use both portrait and landscape orientation in the same document.
Apply to: Whole document	**

# 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.

[Ellison2009] User-centred Design of Context-sensitive Help. AODC. 2009.

# 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.

Help_Title [Edit] Help contents here.	

# 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

```
'wikibtn-bold': ['----', '----'],
'wikibtn-italic': ['--', '--'],
'wikibtn-underline': ['<u>', '</u>'],
'wikibtn-strike': ['<s>', '</s>'],
'wikibtn-nowiki': ['<nowiki>', '</nowiki>'],
'wikibtn-hyperlink': ['[[', ']]'],
'wikibtn-slide': ['=' + tl['wiki js slide sample title'] + '=\n'
+ '* ' + tl['wiki js slide sample bullet'] + '\n'
+ '* ' + tl['wiki js slide sample bullet'] + '\n'
+ '* ' + tl['wiki_js_slide_sample_bullet'] + '\n'
+ '....' + '\n'].
'wikibtn-bullets': ['* ' + tl['wiki js bullet'] + ' \n'],
'wikibtn-numbers': ['# ' + tl['wiki js enum'] + ' \n'],
'wikibtn-definitionlist': [
    '; ' + tl['wiki is definitionlist item']
    + ' : ' + tl['wiki js definitionlist definition']
    + '' + '\n'
   + '; ' + tl['wiki is definitionlist item']
    + ' : ' + tl['wiki_js_definitionlist_definition']
    + '' + '\n'],
'wikibtn-leftaligned': ['{{left|','}}'],
'wikibtn-centeraligned': ['{{center|','}}'],
'wikibtn-rightaligned': ['{{right|','}}'],
'wikibtn-hr': ['---- \n']
```

# 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.

Name	Owner	Register	Access	Voting	Post Lifetime	Actions
Help [wiki]	root	Public Request 📀	Read Write Wiki 📀	+/- Voting 📀	Never Expires 📀	Edit Delete
Public [wiki]	root	Public Request	Read	No Voting	Never Expires	Edit Delete
Test Group [wiki]	root	No One	No Read 😒	No Voting 📀	Never Expires 📀	Edit Delete

# 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 CONTD..

- 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..

"wiki\_content": "==Creating or Joining a group==\r\nYou 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.\r\n==Browse Existing Groups==\r\nYou 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.\r\n[[https://www.seekquarry.com/?c =static&p=Documentation#Managing Users, Roles, and Groups| Learn More..]]\r\n"

```
"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.

<?php
e(
Sthis->view->helper("helpbutton")>render("Locale\_Writing\_Mode",\$data[CSRF\_TOKEN])
); ?>
Add Locale
Locale Name:
Locale Tag:
Writing Mode:
Select Mode © ?
Locale Enabled:
Submit

<button type="button" class="help-button default" data-tl="{wiki\_view\_edit :
"Edit",wiki\_view\_read :"Read"}" data-back-params="{}" onclick="javascript:
displayHelpForId(this,false,'admin','manageLocales','YI00P\_T0KEN','NjvcHg1bi8|1416956504','3','api','wiki','read')" data-pagename="Locale Writing Mode">
?</button>

# **Displaying Wiki help articles**

#### YOOD - Admin [Manage Groups]

Account Access	Or set al la							
Manage Account	Create/Jo	in G	roup					
Manage Users	Name:		[Bro	wse] ?				
Manage Roles		0						
Crawls		Save						
Manage Crawl	Subscribe	od G	roune					
Manage Classifiers	Row 0 to 31 of	31 Sh	w in B	Search1				
Page Options	100 0 0 0 0 0	51 01	<b>ON</b> 30 <b>D</b>	rearcing				
Results Editor	Name	Owner	Register	Access	_	Voting	Post Lifetime	Actions
Search Sources	Help [wiki]	root	Public Request	Read Write V	Nix 📘	white a	New Lipme	Edit Delet
	Public (wiki)	root	Public Reque	stRead	-	No Voting	Never Expires	Edit Delet
Social	Test Group (wik)	root	NeOne E	No-Read	B	No Voting	New Expres	Edit Delet
Manage Groups	Test10 (wki)	root	None E	No-Read	B	No Voting	New Lignes	Edit Delet
Feeds and Wikis	Test11 (wik)	root	NON	No-Read	B	No Voting	New Lignes	Edit Delet
Mix Crawls	Test12 (wiki)	root	NoOne	No-Read	B	No Voting	New Lipnes	Edit Delet
System Settings	Test13 [wik]	root	Notre	No Read	B	No Voting	New Dorine	Edit Delet
Manage Machines	Test14 [wki]	root	No One	No.Read	B	No Voting	New Loren	Edit Delet
Manage Locales	Test16 [wiki]	root	No One	No.Read	E	No Voting	New Expres	Edit Delet
Server Settings	Test17 (wiki)	root	NoOne E	NoReal	B	No Voting	New Lores	Edit Delet
Security	Test18 [wiki]	root	No One	No Peed	B	No Voting	New Expres	Edit Delet
Continue	Test19 (wiki)	root	No One	No Read	B	No Voting	New Lipins	Edit Delet
vorshee	Test20 (wiki)	root	No One	No Read	8	No Voting	New Lipres	Edit Delet
	Test21 (wiki)	root	None	NoRead	B	No Voting	New Lores	Edit Delet
	Test23 (wiki)	root	No One	No Read	B	No Voting	New Dorm	Edit Delet
	Test24 lwiki	root	No.Con	I to Beat	-	No. Vetera	Amer Factor D	Edd Delet

Account Access	Create/	oin (	Group				
Manage Account	oreate/J	Unit v	oroup				
fanage Users	Name:		[8/	towse] ?			
Aanage Roles		Sau	1				
Crawls		Gave					
Manage Crawl	Subscrit	hed (	Groups				
Manage Classifiers	Row 0 to 31	of 31 S	thow as D	Georchi			
Page Options	1000010001	0.010	10 m - 50 - 10 1	or other carry			
Results Editor	Name	Owner	Register	Access	Voting	Post	Actions
Search Sources	Help (wiki)	root	Public Request	Read With With		Never Expres	Edt Delete
locial	Public laiki	mot	Public	Rand	No Votino	Never	Edit
lanage Groups	Control format	1004	Request	News2	no mang	Expires	Lucosen
eeds and Wikis	Test Group [wiki]	root	NON B	No Paul	No Visting	New Laires	Edit Delete
lix Crawls	Test10 [wiki]	root	NON B	No Flead	No Witting	Saver Express	Edit Delete
stem Settings	Test11 [wiki]	root	No One	No Read	No Voting	Never Expres	Edit Delete
inage Machines	Test12 [wiki]	root	NON B	No Feed	Ne Viting	New Lares	Edt Delete
anage Locales	Test13 (wiki)	root	No One	No Read	No Yoting	Never Depres	Edit Delete
rver Settings	Test14 (wiki)	root	No.One	No Feed	No Voting	New Lapres	Edit Delete
	Test16 Jackil	root	No One	No Read	No Voting	New Lipite	Edit Delete
ounty	TRATING THING						
curty nfgure	Test17 (wiki)	root	Ni Ore	No Read	No Wetrig	Mover Expres	Edt Delete
urby figure	Test17 (wiki) Test18 (wiki)	root root	No One	No Read	No Voting	Never Expres	Edit Delete
urty figure	Test12 (wik) Test18 (wik) Test19 (wik)	root root root	No Del	No Read	No Vating Ro Vating Ro Vating	Never Expres	Edit Delete Edit Delete Edit Delete

Browse Groups [Ed

Manage Groups is available to only those with a standard user role.

Groups are collections of users that have access to a group feed and a set of wiki pages. Any User with a user role can create or edit groups. The Create/Join Group form takes the name of a group, by which the use can select an existing group to Join. If you enter a name that currently does not exist. You will have the option to create a New group, which will be done on the Create Group form.



خيريث حساب Social

Manage Groups

Feeds and Wikis تركيبخان خزثرها

Groups List

:Name

[Row 0 to 5 of 5 Show so B [Search

Save

he user can select an existing group to Join.									
If you enter a name that currently does not exist. You will have the option to create a	Actions		Post Lifetime	Voting	Access	Register	Owner	Name	
.Group form	Delete	Edt	teertipre B	Sating -t-	Head Arrise Wile:	By Request	epinapala	Eswara_CS2. []wiki	
	Unsubscribe	Edit	Never Expires	No Voting	Request Join	Public Request	cpollett	Pollet (wiki	
	Delete	Edit	Never Expires	No Voting	Read	Public Request	root	(Public (wiki	
	Unsubscribe	Edt	Never Expires	No Voting	Request Join	Public Request	root	Yicop Tuto. []wiki	
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[? [Browse]

تطعك متو غدع

[Browse Groups [

with a standard user role

Manage Groups is available to only those

Groups are collections of users that have

access to a group feed and a set of wiki pages. Any User with a "Standard" role can

reate or edit groups. The Create/Join Group form takes the name of a group, by which

# **Displaying Wiki help articles**

Manage Groups

.Group form

:Name

50 Show

Name

[[wiki Pollett

[[wiki

Public

Row 0 to 5 of 5

Owner

..cpollet

Add Group

Save



# Upgrade in Yioop



### 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.

#### Experimentation and results CONTD..

[X]

#### Manage Machines [Edit]

#### Add Machine:

The Add machine form allows you to add a new machine to be controlled by this Yioop instance. The **Machine Name** field lets you give this machine an easy to remember name. The Machine URL field should be filled in with the URL to the installed Yioop instance.

The **Mirror** check-box says whether you want the given Yioop installation to act as a mirror for another Yioop installation. Checking it will reveal a drop-down menu that allows you to choose which installation among-st the previously entered machines you want to mirror. The **Has Queue Server** check-box is used to say whether the given Yioop installation will be running a queue server or not.

Finally, the **Number of Fetchers** drop down allows you to say how many fetcher instances you want to be able to manage for that machine.

#### Browse/Join Groups [Edit] [X]

#### 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.

Learn More ..

#### Experimentation – A small video snippet.



#### Comparison

			MS	
	Facebook	Gmail	Windows	Yioop
Community				
powered	No	No	No	Yes
Context-				
Sensitive Help	No	No	Yes	Yes
Online				
Manual	Yes	Yes	Yes	Yes
Q&A Help	Yes	Yes	No	No

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



#### Thank You