

ADT: Bug Tracker Version 1.0

Functional Specification

Author	Jason
Version	1.0
Printed	2001-10-22 12:23 PM

Document Revisions

Revisions on this document should be recorded in the table below:

	Date	Description	Author
1	10 September 2001	First Draft	Jason
2	10 September 2001	First Edit	Josh
3	5 October 2001	Add Params, All Views, Screen Shots	Josh
4			

1 Introduction	4	
1.1 Purpose of this document		4
1.2 Scope of this document		4
1.3 Overview		4
1.4 Business Context		4
2 General Description	4	
2.1 Product Functions		4
2.2 General Constraints		4
3 Functional Requirements	11	
3.1 Web Bug Tracker Application		11
3.1.1 <i>Description</i>		11
3.1.2 <i>Risks and Dependencies</i>		18
4 Database Design	18	
4.1 Description		18
4.2 Communications Interfaces		19
5 Other non-functional attributes	19	
5.1 Reliability		19
5.2 Maintainability		19
5.3 Portability		19
5.4 Extensibility		19
5.5 Reusability		19
5.6 Serviceability		19

1 Introduction

1.1 Purpose of this document

The purpose of this document is to specify the functional and system specification of the Bug Tracker application. This document provides a road-map through which the implementation of the application will be developed and, where applicable, will also contain information detailing technical design constraints and assumptions.

1.2 Scope of this document

The scope of this specification covers the functional specifications of the Bug Tracker application. This specification does not extend to third party or infrastructure components (such as a web server installation and/or configuration).

1.3 Overview

The basic requirements summary build-in for the Web Bug Tracker application:

- To able to store the bug list in the midst of e.g. UAT of a project.
- To able to separate view depending on the status of bug reported and also via different user.
- To define a basic data listing page for viewing purpose.

1.4 Business Context

Bug Tracker is a groupware application designed for multiple users over a wide area. The generic version is open source for distribution. Anyone may take advantage of the powerful eXtropa Perl ADT. Improvements will be made incrementally as bug reports come in and suggestions are made. The generic Web Bug Tracker will ultimately benefit both the company and our users

2 General Description

2.1 Product Functions

The general functionality of the Web Bug Tracker application is to allow users to display the user Bug Tracker information in a single location online. The application generates a dynamic page depending on the entered information and the setup preferences.

2.2 General Constraints

Bold Params indicate Section Headings. *Italic Params* are objects.

Indented Params are configurable variables.

Grayed out or missing items are not required or not available in the default configuration.

Param	Default configuration	Notes
Language	Perl	
Session Setup		
Type	File	Note that flatfile data sources are slow. We recommend upgrading to a database based data source
Max Modify Time	1 hour	
Fatal Timeout	Off	
Fatal if session not found	Off	
Session Manager Setup		
Type	FormVar	
Cgi Object	\$CGI	
Session Params	Session Config Params	
Authentication Setup		For the datasource
Type	File	
Field Delimiter	(pipe)	
Create a file if none exists	On	
Field Names	From Auth User Datasource	
File	Scriptname.users.dat	Path is set at start of script
Default Authentication Fields	Username, password, groups, firstname, lastname, email, developer_status	
Authentication Manager Setup		How requests are processed
Color for even rows	E5E5E5	
Color for Odd Rows	FFFFFF	
CSS View URL	\$CSS_VIEW_URL	
Application Logo	logo.gif	
Application Logo Height	40	
Application Logo Width	353	
Application Logo ALT	WebDB Demo	
HTTP Header Params	[-EXPIRES => '-1d']	
Document Root URL	'/' or web root directory	
Image Root URL	/Images/Extropa	
Script Display Name	'BugTracker'	
Script Name	\$CGI->script_name()	
Page Top View	PageTopView	
Page Bottom View	PageBottomView	
Link Target	'_self' or current window	
<i>User_Fields</i>	Auth_username, auth_password, auth_groups, auth_firstname, auth_lastname, auth_email, auth_developer_status	
Mail Params		
Type	Sendmail	Default on most systems
<i>User Mail Send Params</i>		

From	you@yourdomain.com	
Subject	Password Generated	
<i>Admin Mail Send Params</i>		
From	you@yourdomain.com	
To	you@yourdomain.com	
Subject	Registration Notification	
<i>Auth Manager Config Params</i>		
Type	CGI	
Allow Registration	On	
Allow User Search	On	Allow anyone to check for an old account.
Generate Password	Off	
Default Groups	Normal	
Email Registration to Admin	Off	
Display Registration After Failure	On	
Upload Manager Setup		For Attachments
Type	Simple	
CGI_OBJECT	\$CGI	
Upload Field	attach	
Field to set upload filename	attach_filename	
<i>Key Generator Params</i>		
Type	Random	
Secret Element	RECRUIT	
Length	0	
Upload Directory	\$APP_DATAFILES_DIRECTORY/Uploads	
Data Handler Setup		How data is handled
<i>Add Form DHM Config</i>		
Type	CGI	
CGI Object	\$CGI	
Data Handlers	Email, Exists, HTML, String, Upload	
Field Mappings	Abstract, priority, reporter, developer, details, status, attach, resolution_text	
Datasource Setup		Configure the database and fields displayed
Field Names	record_id, abstract, priority, reporter, developer, details, status, attach, attach_filename, resolution_text, resolution_date, accepted_by, accepted_date, username_of_poster, group_of_poster, date_time_posted	Corresponds to default extropa database
<i>Sample Default Widget Definitions</i>		Configure field types for TTML
Display Name	Country	Name that appears in the browser
Type	Textfield, textarea, popup_menu	
Name	Fname	Internal field name
Size	30	Display size in characters
Maxlength	80	Maximum number of

		characters permitted
Rows	6	Initial height of textarea
Cols	30	Initial width of textarea
Values	[qw(1 2 3 4 5)]	Space between each element with qw
Wrap	VIRTUAL	Wrapping of text in textarea
Basic Datasource Config Params		Configure datasource
Type	File	
File	\$APP_DATAFILES_DIRECTORY/\$APP_NAME.dat	
Field Delimiter	(pipe)	
Comment Prefix	#	Ignore lines starting with #
Create File if None Exists	On	
Field Names	\@DATASOURCE_FIELD_NAMES	
Key Fields	['record_id']	Not required if key is not used
Field Types	Record_id => 'Autoincrement'	Specify a specific kind of field
Mailer Setup		Required for regular email. Not the same as Auth Mailer
Mail Config Params		
Type	Sendmail	
Delete Event Mail Send		Warns Someone of Deletions to the database
From	you@yourdomain.com	
To	you@yourdomain.com	
Reply To	you@yourdomain.com	
Subject	Bug Delete	
Add Event Mail Send		Tells user of additions
From	you@yourdomain.com	
To	you@yourdomain.com	
Reply To	you@yourdomain.com	
Subject	Bug Addition	
Modify Event Mail Send		Tells user of modifications to records
From	you@yourdomain.com	
To	you@yourdomain.com	
Reply To	you@yourdomain.com	
Subject	Bug Modification	
Logging Setup		
Type	File	
Log File	\$APP_DATAFILES_DIRECTORY/\$APP_NAME.log	
Log Entry Suffix	' ' . _generateEnvVarsString() . ' ',	
Log Entry Prefix	'Bug Tracker '	
View Setup		Views to use, display, and defaults
Valid Views	CSSView, AddRecordView, BasicDataView,	The program cannot

	DetailsRecordView, AddAcknowledgementView, AddRecordConfirmationView, DeleteRecordConfirmationView, DeleteAcknowledgementView, ModifyAcknowledgementView, ModifyRecordConfirmationView, ModifyRecordView, PowerSearchFormView, SessionTimeoutErrorView, LogoffView, OptionsView,	display views that are not available here.
<i>View Display Params</i>		Defaults for Views
Application Logo	logo.gif	
Application Logo Height	40	
Application Logo Width	353	
Application Logo ALT	WebDB Demo	
HTTP Header Params	[-EXPIRES => '-1d']	
Document Root URL	/	
Image Root URL	/Images/Extropia	You should changes this upon installation to be outside the cgi directory.
Script Display Name	Bug Tracker	
Color for Even Rows	E5E5E5	
Color for Odd Rows	FFFFFF	
Display Fields	abstract, priority, reporter, developer, details, status, resolution_date, resolution_text, accepted_date, accepted_by, attach,	
Table BG Color 1	6699CC	
Table BG Color 2	E5E5E5	
Table BG Font Color1	BLACK	
Table BG Font Color2	BLACK	
Filter Setup		
<i>HTMLIZE Filter</i>		
Type	HTMLize	
Convert Double Linebreak to P	On	
Convert Linebreak to BR	On	
<i>Charset Filter</i>		
Type	CharSet	
<i>Embed Filter</i>		
Type	Embed	
Enable	Off	
Action/Workflow Setup		
<i>Action Handler List</i>	Defaults	User should not need to modify
<i>Action Handler Action Params</i>		
Action Handler List	\@ACTION_HANDLER_LIST	
Add Acknowledgment View Name	AddAcknowledgementView	
Add Email Body View	AddEventEmailView	
Add Form View Name	AddRecordView	
Allow Additions Flag	On	

Allow Deletions Flag	On	
Allow Duplicate Entries	Off	
Allow Username Fields to be Searched	On	
Allow Modifications Flag	On	
Application Sub Menu View Name	ApplicationSubMenuView	
Options Form View Name	OptionsView	
Auth Manager Config Params	\@AUTH_MANAGER_CONFIG_PARAMS	
Add Record Confirmation View Name	AddRecordConfirmationView	
Basic Data View Name	BasicDataView	
CGI Object	\$CGI	
CSS View URL	\$CSS_VIEW_URL	For speed, change CSS URL to a location outside the CGI directory.
CSS View Name	CSSView	
Datasource Config Params	\@DATASOURCE_CONFIG_PARAMS	
Delete Acknowledgment View	DeleteAcknowledgementView	
Delete Record Confirm View	DeleteRecordConfirmationView	
Records Per Page Options	[5, 10, 25, 50, 100]	Remove or change numbers as desired. This appears under Options.
Max Records Per Page	\$CGI->param('records_per_page') 5	
Sort Field 1	\$CGI->param('sort_field1') 'category'	Sort by which field?
Sort Field 2	\$CGI->param('sort_field2') 'fname'	Sort by which field?
Sort Direction	\$CGI->param('sort_direction') 'ASC'	ASC=Ascending, DSC=Descending
Delete Form View Name	BasicDataView	
Delete Email Body View	DeleteEventEmailView	
Details View Name	DetailsRecordView	
Data Handler Manager Config Param	\@DATA_HANDLER_MANAGER_CONFIG_PARAMS	
Display Acknowledgement On Add	On	
Display Acknowledgement On Delete	On	
Display Acknowledgement On Modify	On	
Display Confirmation On Add	Off	

Display Confirmation On Delete	Off	
Display Confirmation On Modify	Off	
Enable Sorting	Off	
Default Sorting Field1	title	
Default Sorting Field2	abstract	
Hidden Admin Fields View	HiddenAdminFieldsView	
Input Widget Definitions	\@INPUT_WIDGET_DEFINITIONS	
Key Field	record_id	
Logoff View	LogoffView	
URL Encoded Admin Fields View	URLEncodedAdminFieldsView	
Log Config Params	ModifyAcknowledgementView	
Modify Acknowledgment View	ModifyRecordConfirmationView	
Mail Config Params	\@MAIL_CONFIG_PARAMS	
Modify Form View	ModifyRecordView	
Modify Email Body View	ModifyEventEmailView	
Power Search View	PowerSearchFormView	
Require Auth to Search	On	Is authorization required for the action?
Require Auth for Add	On	Is authorization required for the action?
Require Auth for Modify	On	Is authorization required for the action?
Require Auth for Delete	On	Is authorization required for the action?
Require Auth for Details	On	Is authorization required for the action?
Require Matching Username for Modify	Off	Is a matching group or username required for the action on that record?
Require Matching Group for Modify	Off	Is a matching group or username required for the action on that record?
Require Matching Username for Delete	Off	Is a matching group or username required for the action on that record?
Require Matching Group for Delete	Off	Is a matching group or username required for the action on that record?
Require Matching Username for Search	Off	Is a matching group or username required for the action on that record?
Require Matching Group for Search	Off	Is a matching group or username required for the action on that record?
Send Email on Delete	Off	
Send Email on Modify	Off	
Send Email on Add	Off	

Session Object	\$SESSION	
Session Timeout View	SessionTimeoutErrorView	
Templates Cache Directory	\$TEMPLATES_CACHE_DIRECTORY	
Valid Views	\@VALID_VIEWS	
View Display Params	\@VIEW_DISPLAY_PARAMS	
View Filters Config Params	\@VIEW_FILTERS_CONFIG_PARAMS	
View Loader	\$VIEW_LOADER	
Simple Search String	\$CGI->param('simple_search_string') ""	
First Record on Page	\$CGI->param('first_record_to_display') 0	
Last Record on Page	\$CGI->param('first_record_to_display') "0"	
Page Top View	PageTopView	
Page Bottom View	PageBottomView	
Action Handler Plugins	%ACTION_HANDLER_PLUGINS,	

3 Functional Requirements

3.1 Web Bug Tracker Application

3.1.1 Description

The following definitions only cover the Default settings and views.

Authentication Definition Views

The application will allow any user read-only rights to view the records registered in the application. Only registered users however, may add, modify, and delete records. There is no capacity for multiple group definitions, thus the default group is "Normal" and cannot be changed.

Default Settings Permit:

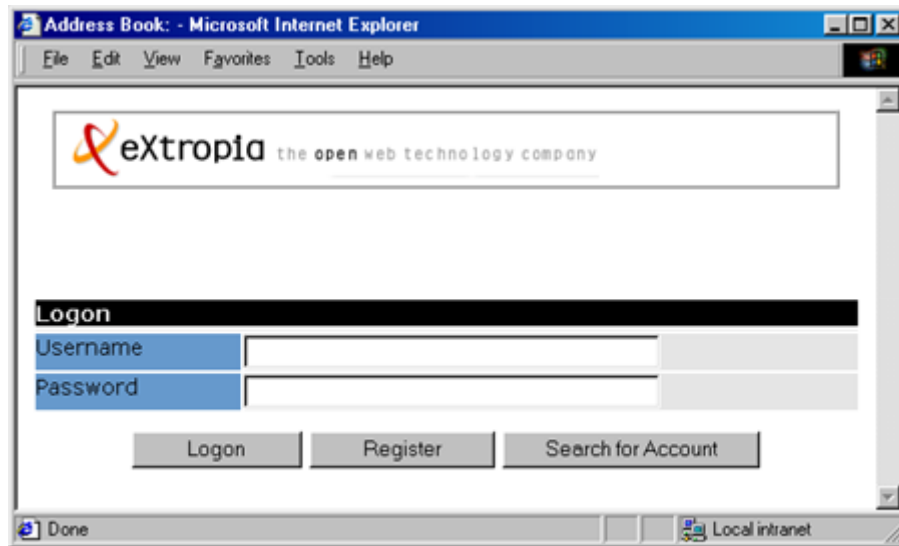
- Registered developers or testers may view the database
- Any registered user may search the database
- Registered users may add, modify, and delete records
- Registration is available to anyone

Registration of normal users is simply done by pressing "Logon" and following the Registration Views. User data is written to the datasource. In the default installation, it is written to `Datafiles/BugTracker/bug_tracker.users.dat`. It is recommended that administrators do not alter the contents, especially the encrypted passwords. The information is listed as:

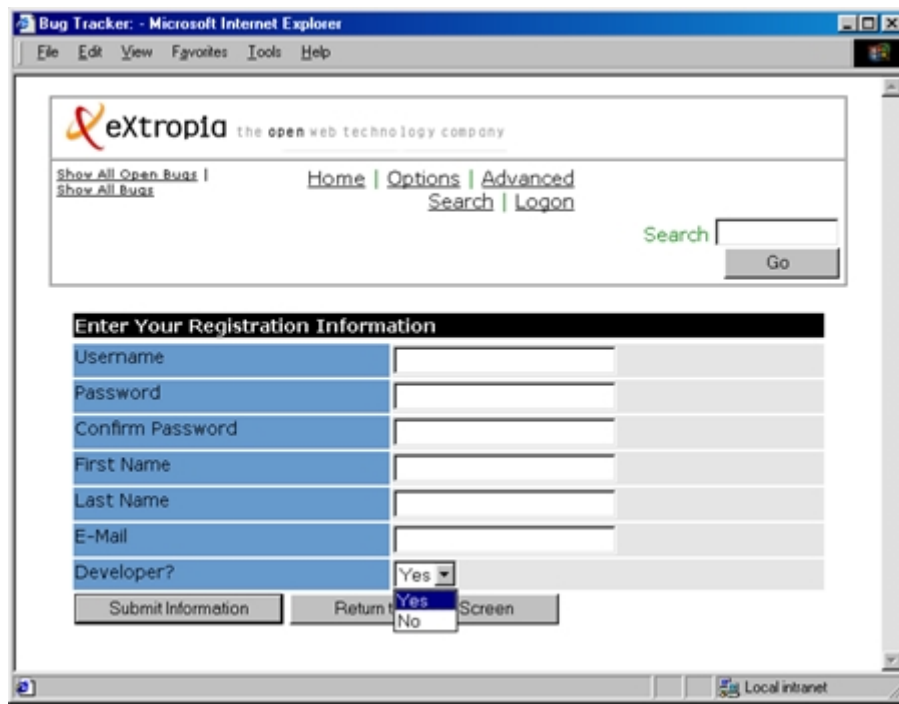
```
username | password | group_name | fname | lname | email | dev_status
```

Registration of Administrative users may be done at a later date. System administrators will be able to alter hard data in databases or flatfiles as needed.

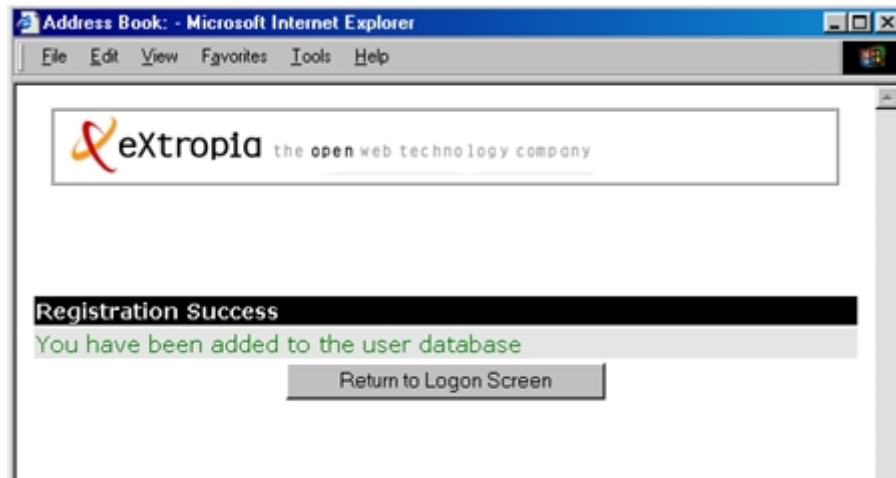
- **Logon View** requests the Username and Password of registered users. Users may attempt to logon, Register, or Search for Account. Also the view for failed logins.



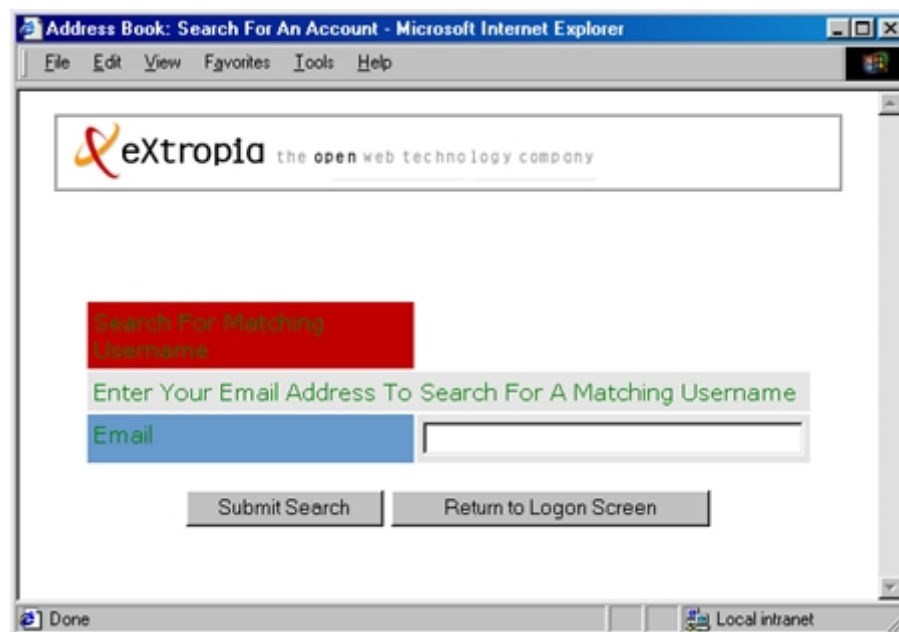
- **Register View** permits any user to enter Username, Password, Confirm, Password, First Name, Last Name, E-Mail, and Developer Status. The user may then Register or Return to Logon Screen.



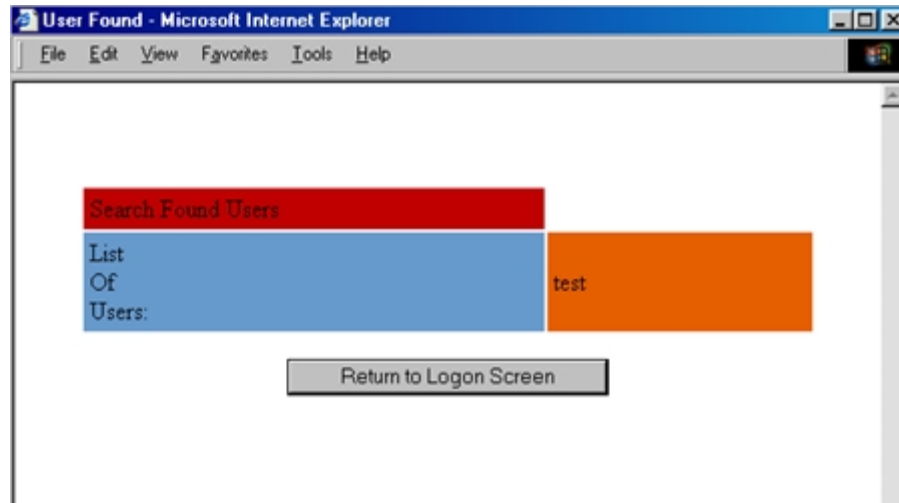
- **Register Confirmation View** confirms registration and returns the user to the Logon View.



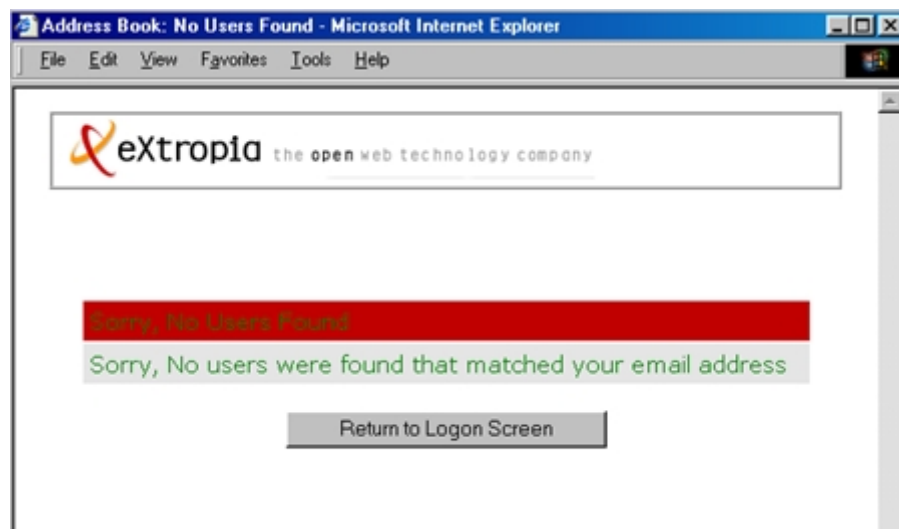
- **Search for Account** requests an email address to match users and then sends the password to the user.



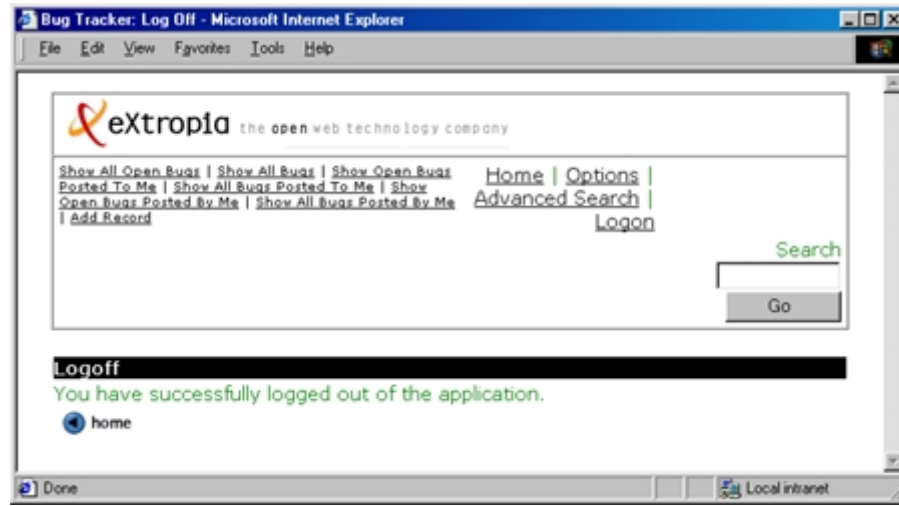
- **Search for Account Users Found** displays the username that matches the email address given.



- **Search for Users No Results** appears when no email address is associated with a username.

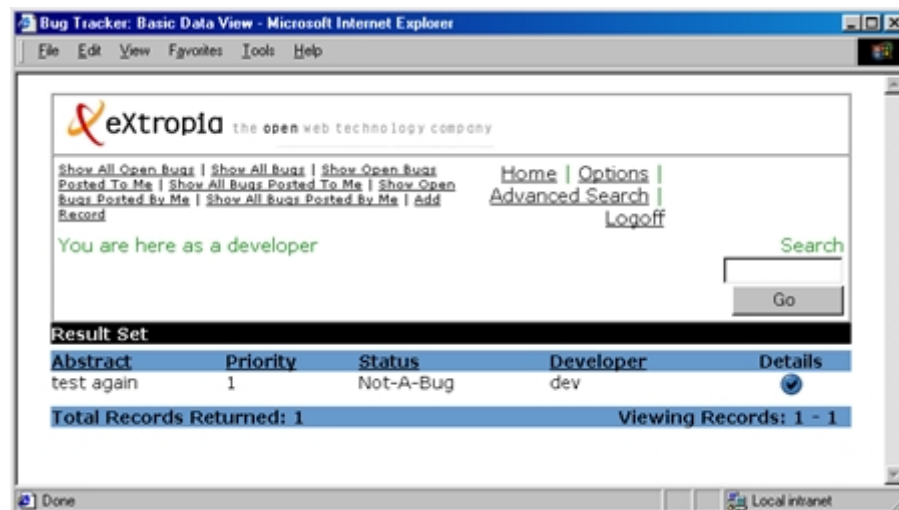


- **Logoff View** logs the user out and confirms the logoff. The session is terminated.

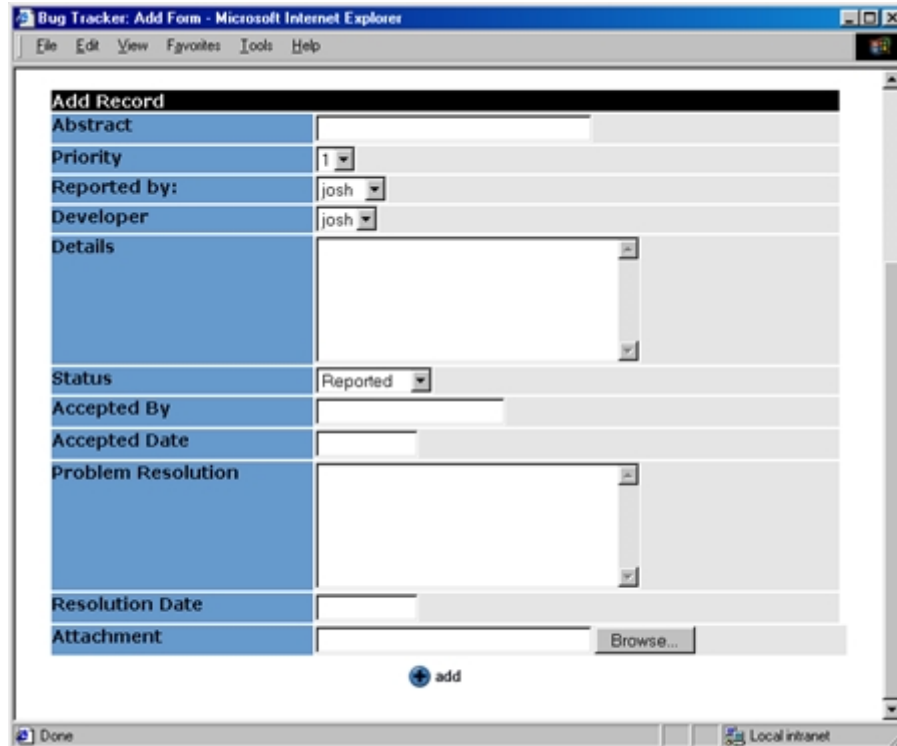


View Definition

- **Show All Open Bugs** displays all Open bug records.
- **Show All Bugs** displays all bugs.
- **Show Open Bugs Posted To Me** displays all Open bugs posted to the developer logged in.
- **Show All Bugs Posted To Me** displays all bugs posted to the developer logged in.
- **Show Open Bugs Posted By Me** displays all Open bugs posted by the current user.
- **Show All Bugs Posted By Me** displays all bugs posted by the current user.



- **Add Record** permits the user to add a bug. Fields include: Abstract, Priority, Reported by, Developer, Details, Status, Accepted By, Accepted Date, Problem Resolution, Resolution Date, and Attachment.

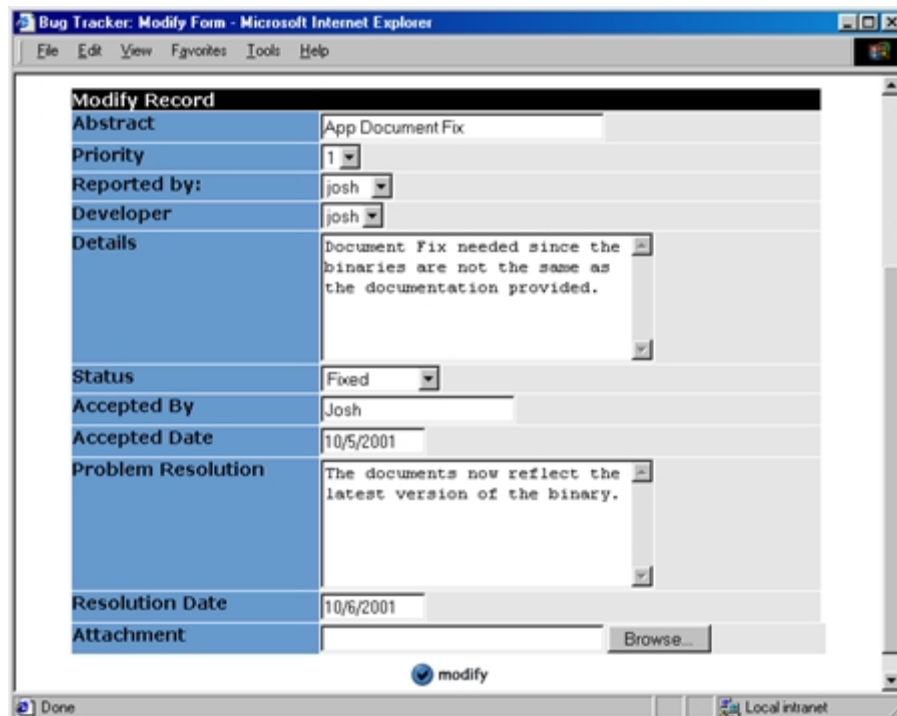


The screenshot shows the 'Add Record' form in a Microsoft Internet Explorer browser window. The form is titled 'Add Record' and contains the following fields:

- Abstract:** A text input field.
- Priority:** A dropdown menu with '1' selected.
- Reported by:** A dropdown menu with 'josh' selected.
- Developer:** A dropdown menu with 'josh' selected.
- Details:** A large text area.
- Status:** A dropdown menu with 'Reported' selected.
- Accepted By:** A text input field.
- Accepted Date:** A text input field.
- Problem Resolution:** A large text area.
- Resolution Date:** A text input field.
- Attachment:** A text input field with a 'Browse...' button next to it.

At the bottom of the form, there is a blue circular button with a plus sign and the text 'add'.

- **Modify Record** permits the modification of existing records. The user may update the fields as necessary.



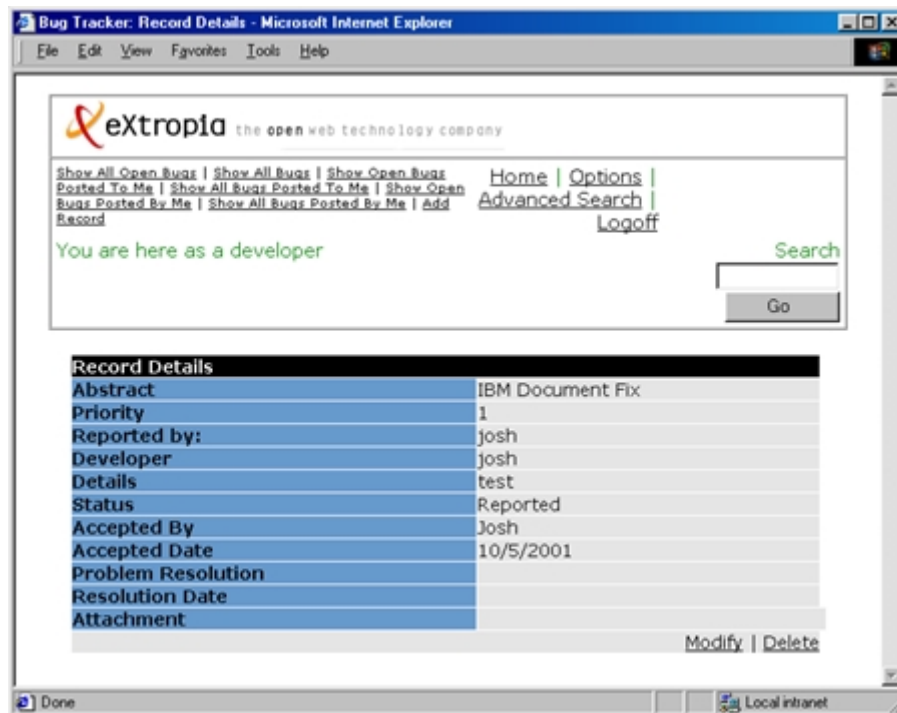
The screenshot shows the 'Modify Record' form in a Microsoft Internet Explorer browser window. The form is titled 'Modify Record' and contains the following fields:

- Abstract:** A text input field containing 'App Document Fix'.
- Priority:** A dropdown menu with '1' selected.
- Reported by:** A dropdown menu with 'josh' selected.
- Developer:** A dropdown menu with 'josh' selected.
- Details:** A large text area containing the text: 'Document Fix needed since the binaries are not the same as the documentation provided.'
- Status:** A dropdown menu with 'Fixed' selected.
- Accepted By:** A text input field containing 'Josh'.
- Accepted Date:** A text input field containing '10/5/2001'.
- Problem Resolution:** A large text area containing the text: 'The documents now reflect the latest version of the binary.'
- Resolution Date:** A text input field containing '10/6/2001'.
- Attachment:** A text input field with a 'Browse...' button next to it.

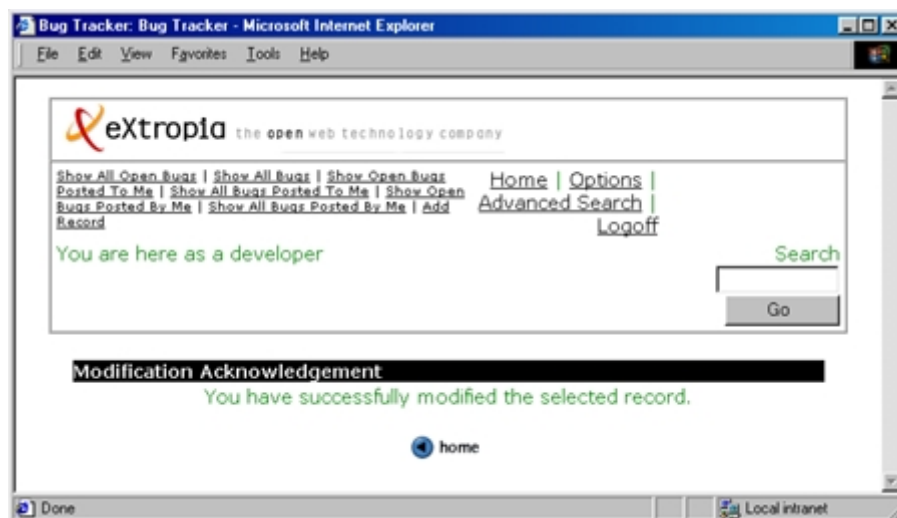
At the bottom of the form, there is a blue circular button with a checkmark and the text 'modify'.

- **Delete Record Acknowledgment** is displayed after a user presses "Delete" in the DetailsView. There is no request to confirm deletion.

- **Details View** displays the information in a record. Modify and Delete options are available.



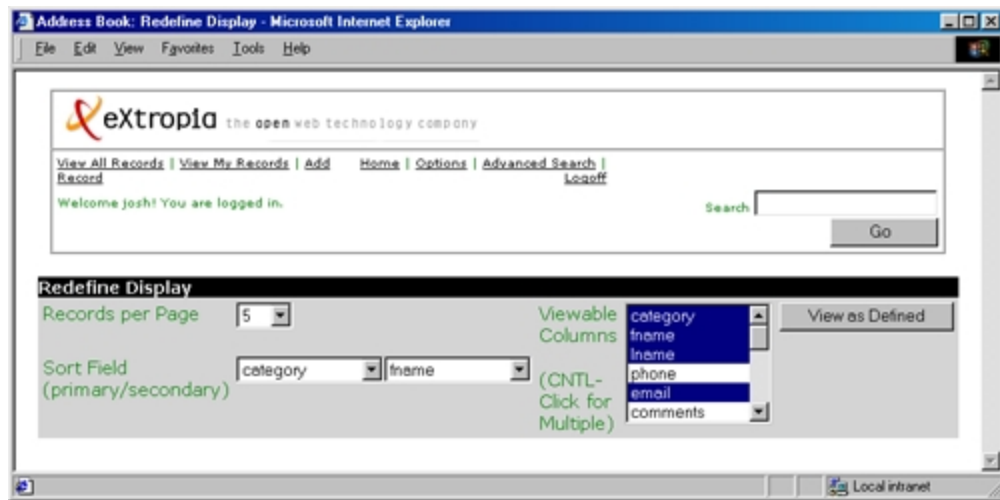
- **Advanced Search** permits any user to search the database for any or all of the available fields
- **Acknowledgment View** is displayed whenever someone successfully Adds, Modifies, or Deletes a Record.



- **Confirmation View** is displayed whenever someone attempts to Add, Modify, or Delete a Record. This is not on by default.

Common Features Definitions

- **Basic Search** permits any user to search the database based upon keywords. Available in the header.
- **Options View** permits the authenticated user to alter Records Displayed per Page, Two Sort Fields, and which Columns to View. Upon pressing View as Defined, the user will see the records as desired. The Viewable Columns will vary according to Application.



3.1.2 Risks and Dependencies

4 Database Design

4.1 Description

The data of the application will be stored in a flat file. Each data fields of a record will be separated by '|'.

Fieldname	Description
record_id	Record value (auto incremental)
abstract	The abstract of the bug
priority	Priority of the bug reported.
reporter	Name of the person who report the bug.
developer	Name of the developer who responsible for this bug.
details	Details of the bug being reported.
status	Status of the bug reported to display its status, whether has it been fixed.
attach	Supporting document for the bug reported to be attached here.
attach_filename	Filename of the attachment above.
resolution_text	Solution to the bug fixed to be entered here.
resolution_date	Resolve date of the bug fix.
accepted_by	Name of the Bug fix acceptance.

accepted_date	Date when the bug fix is accepted.
username_of_poster	Userid of login user who posted this record
group_of_poster	Group of the login user who posted this record. Eg (admin group, developer group etc.
date_time_posted	Date and Time posted of record

4.2 Communications Interfaces

5 Other non-functional attributes

5.1 Reliability

Highly reliable in a properly secured environment.

5.2 Maintainability

Requires little maintenance. Owners will want to clear out a large flat-file now and then as well as ensure their installation is secure from hackers. Users of relational databases will probably not need to clear out their database.

A modular architecture provides easy maintenance and upgrades.

5.3 Portability

5.4 Extensibility

Information entered via Web Bug Tracker is portable to any relational database. The program can easily be switched to a new database with just a few lines of code. The program relies on the eXtropa ADT that divorces form and function.

5.5 Reusability

Web Bug Tracker is highly reusable. The application can be modified for just about anything!

5.6 Serviceability