ADT: Todo List Version 1.0

Functional Specification

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`Document Revisions

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

	Date	Description	Author
1	15 October 2001	Screenshots, Params, Views, etc	Josh
2			
3			
4			

TABLE OF CONTENTS

1 Introduction

1.1 Purpose of this document

The purpose of this document is to specify the functional and system specification of the Todo List 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 specification covers the functional specifications of the Todo List 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 Todo List application:
- To store, view, edit, and keep track of Tasks.
- To perform a search on the tasks using the advanced or quick search.
- To redefine the display view.

1.4 Business Context

Todo List is a groupware application designed for multiple users over a wide area. Users on the go may use it as a group task list or personal list managed by more than one person. The generic version is open source for distribution. Anyone may take advantage of the powerful eXtropia Perl ADT. Improvements will be made incrementally as bug reports come in and suggestions are made. The generic Web Todo List will ultimately benefit both the company and our users.

2 General Description

2.1 Product Functions

The general functionality of the Web Todo List application is to allow users to view, edit or search the tasks in a single location online. The application generates a dynamic page depending on the entered information and the setup preferences.

2.2 General Constraints

The application is designed for one or multiple users. No login is required for viewing information. A login is required to add information or new record.

The application will be written in Perl and the data files are stored in a common flatfile system (ASCII File). This will slow down in terms of searching for information if there is a presence of huge database.

The application is also able to interface with relational databases should the administrator desire it.

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	On	
Session Manager Setup		
Type	FormVar	
Cgi Object	$CGI	
Session Params	Session Config Params	
Authentication Setup		For the datasource
Type	File	
Field Delimeter	I (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	
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/Extropia	
Script Display Name	'Web Todo'	
Script Name	$CGI->script_name()	
Page Top View	PageTopView	
Page Bottom View	PageBottomView	

Link Target	'_self' or current window	
User_Fields	Auth_username, auth_password, auth_groups, auth_firstname, auth_lastname, auth_email	
Mail Params		
Type	Sendmail	Default on most systems
User Mail Send Params		
From	you@yourdomain.com	
Subject	Password Generated	
Admin Mail Send Params		
From	you@yourdomain.com	
To	you@yourdomain.com	
Subject	Registration Notification	
Auth Manager Config Params		
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	
Data Handler Setup		How data is handled
Add Form DHM Config		
Type	CGI	
CGI Object	$CGI	
Data Handlers	Email, Exists, HTML, String	
Field Mappings	owner, start_date, due_date, subject, description, status, priority, last_mod_by, last_mod_date	
Datasource Setup		Configure the database and fields displayed
Field Names	record_id, owner, start_date, due_date, subject, description, status, priority, last_mod_by, last_mod_date,	Corresponds to default extropia database
My %months	@months{1..@months} = @months	
My %years	$years{$_} = $_ for (2001..2005)	
My %days	$days{$_} = $_ for (1..31)	
My %priority	1 => 'LOW', 2 => 'MIDDLE', 3 => 'HIGH',	
My %status	1 => 'NEW', 2 => 'IN PROGRESS', 3 => 'DONE',	
Sample Default Widget Definitions		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
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' datetime => [-TYPE => "Date", -STORAGE => 'y-m-d H:M:S', -DISPLAY => 'y-m-d H:M:S',],	Specify a specific kind of field
Mailer Setup		Required for regular email. Not the same as Auth Mailer
Mail Config Params		
Type	Sendmail	
Email Display Fields	subject, location, start_date, end_date, recur_interval, recur_until_date, description,	Email these fields
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	$APP_NAME_TITLE Delete	
Add Event Mail Send		Tells user of additions
From	you@yourdomain.com	
To	you@yourdomain.com	
Reply To	you@yourdomain.com	
Subject	$APP_NAME_TITLE 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	$APP_NAME_TITLE Modification	
Logging Setup		
Type	File	
Log File	$APP_DATAFILES_DIRECTORY/$APP_NAME.og	
Log Entry Suffix	'|' . _generateEnvVarsString() . '|',	
Log Entry Prefix	'Todo|'	
View Setup		Views to use, display, and defaults

Valid Views	CSSView, AddRecordView, BasicDataView, DetailsRecordView, AddAcknowledgementView, AddRecordConfirmationView, DeleteRecordConfirmationView, DeleteAcknowledgementView, ModifyAcknowledgementView, ModifyRecordConfirmationView, ModifyRecordView, PowerSearchFormView, SessionTimeoutErrorView, LogoffView, OptionsView,	The program cannot display views that are not available here.
Row Color Rules	{'status' => [qw(Requested 99CC99)]}, {'status' => [qw(In-Process CC9999)]}, {'status' => [qw(Delivered CC9999)]}	This is just blank by default.
Field Color Rules	{'project_size' => [qw(Large BLUE)]}, {'project_size' => [qw(Small ORANGE)]}	
View Display Params		Defaults for Views
Application Logo	logo.gif	
Application Logo Height	40	
Application Logo Width	353	
Application Logo ALT	Todo	
Color for Even Rows	E5E5E5	
Color for Odd Rows	FFFFFF	
Display Fields	Subject, description, start_date, due_date, status, priority	
Table BG Color 1	6699CC	
Table BG Color 2	E5E5E5	
Table BG Font Color 1	BLACK	
Table BG Font Color 2	BLACK	
Date Time Setup		
Type	ClassDate	ClassDate is a Perl Module required for Todo and WebCal
Filter Setup		
HTMLIZE Filter		
Type	HTMLize	
Convert Double Linebreak to P	On	
Convert Linebreak to BR	On	
Charset Filter		
Type	CharSet	
Embed Filter		
Type	Embed	
Enable	Off	
Action/Workflow Setup		
Action Handler List	Defaults	User should not need to modify
Action Handler Action Params		
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 Modifications	On	
Allow Duplicate Entries	Off	
Allow Username Fields to be Searched	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	On	
Display Confirmation	On	

On Delete		
Display Confirmation On Modify	On	
Enable Sorting	On	
Default Sort Field 1	Status	
Default Sort Field 2	Project_name	
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	Off	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	Off	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,	
Basic Input Widget Display COLSPAN	4	

3 Functional Requirements

3.1 Todo List 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:
- Any user may view the database
- Any 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/Todo/todo.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

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.
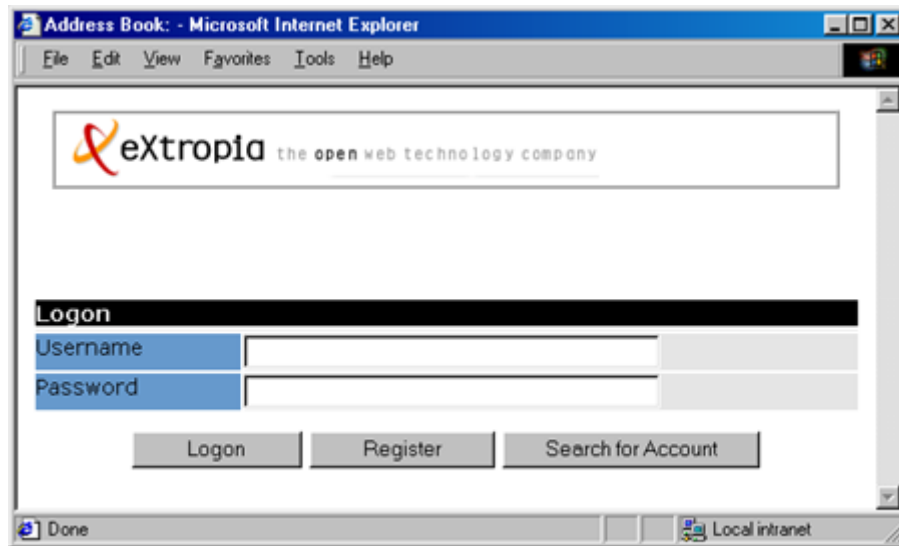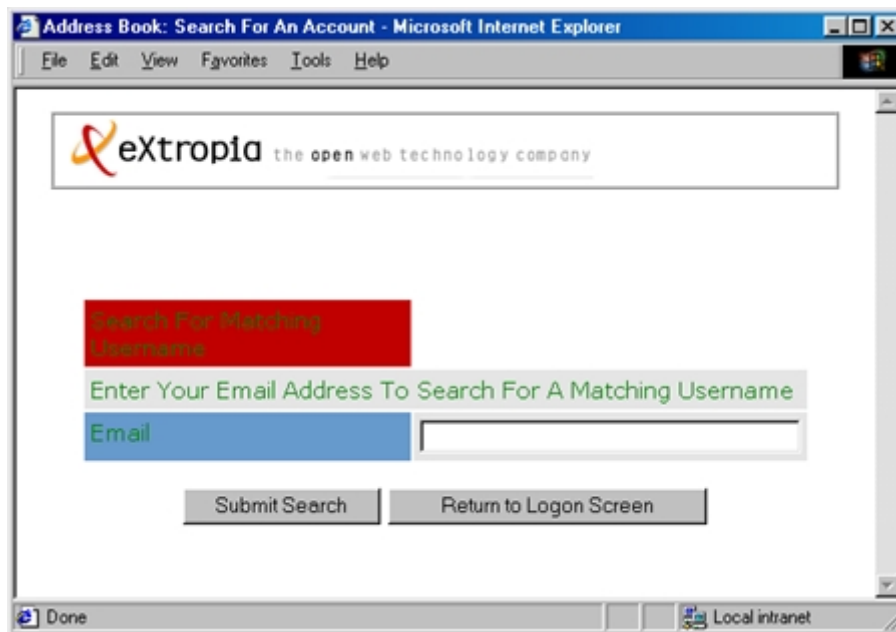

- **Register View** permits any user to enter Username, Password, Confirm, Password, First Name, Last Name, and E-Mail. The user may then Register or Return to Logon Screen.
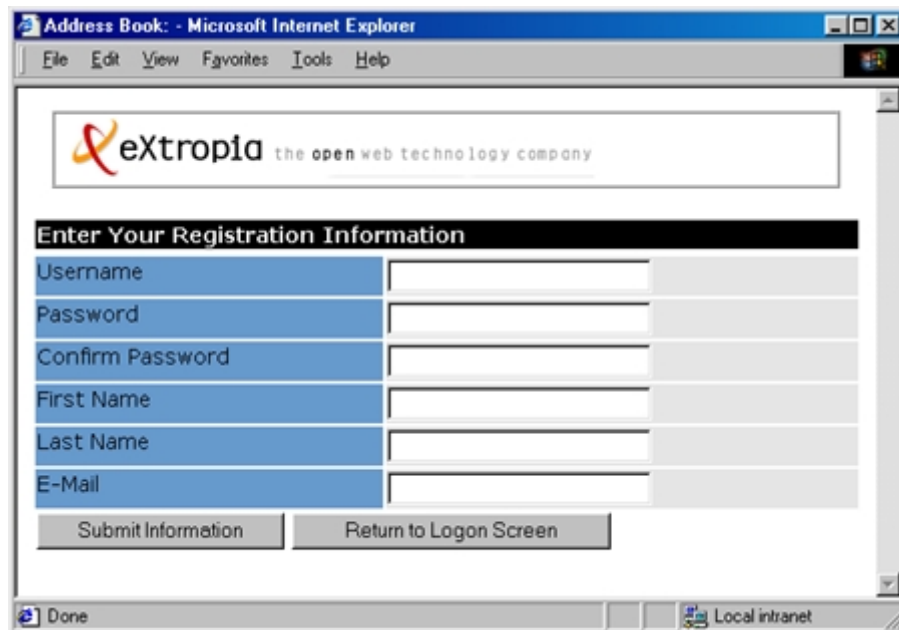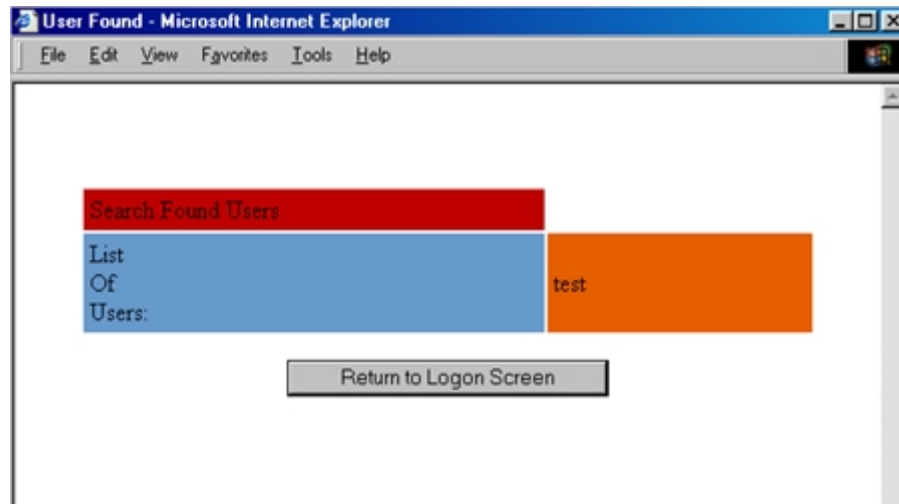
- **Register Confirmation View** confirms registration and returns the user to the Logon View.
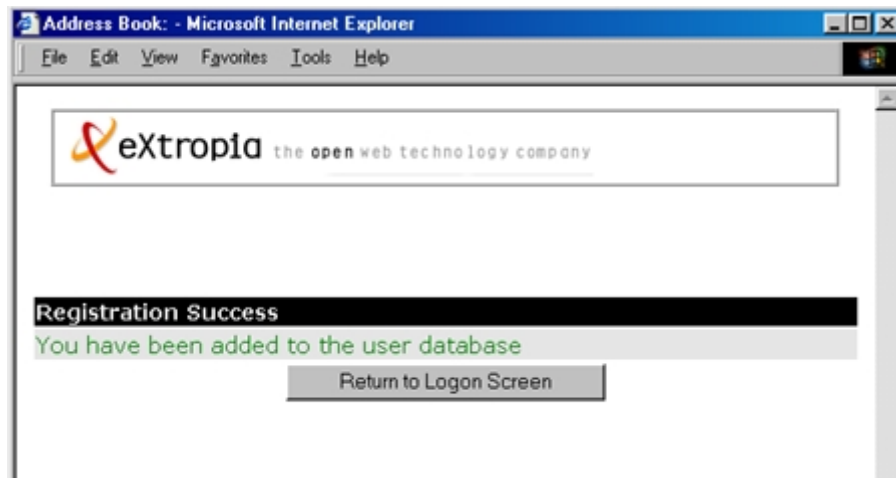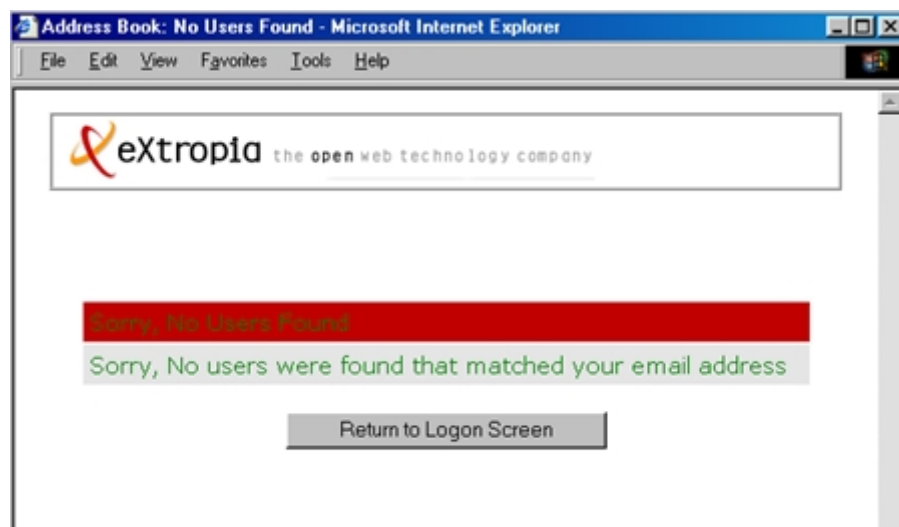

- **Search for Account** requests an email address to match users and then sends the password to the user.

- **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.
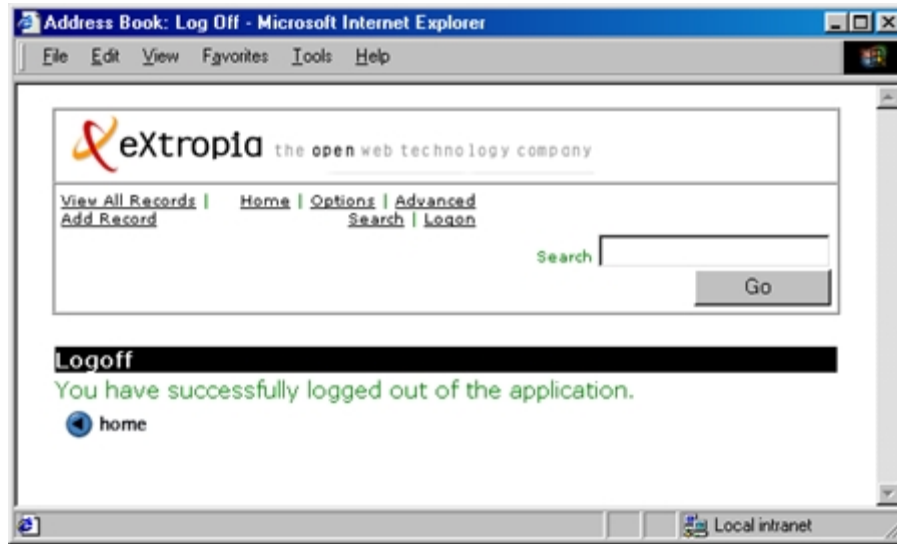
Application Specific View Definitions

- **Home View** shows all available projects. Users may View All, View My Records (theirs), change Options, Basic and Advanced Search, and Logon/Logoff. Users may also Add or view Details of records.
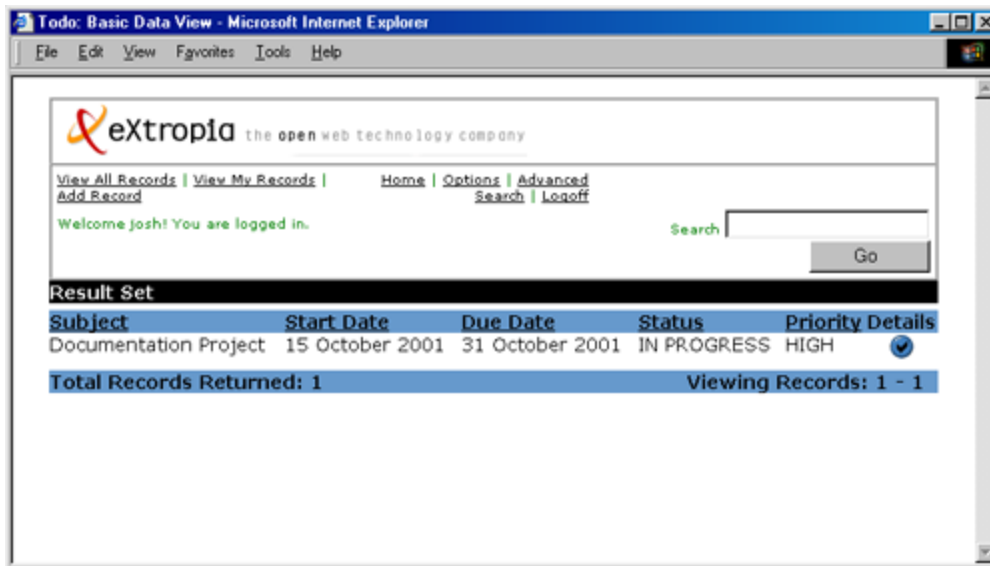
- **View All Records** will show all the projects. Same as Home.
- **View My Records** requires logon to match usernames. It will only display projects created by the current user. Same as Home.

- **Add Record Form** will allow logged on users to add a project. A task has a Subject, Start Date, End Date, Description, Priority, and Status.
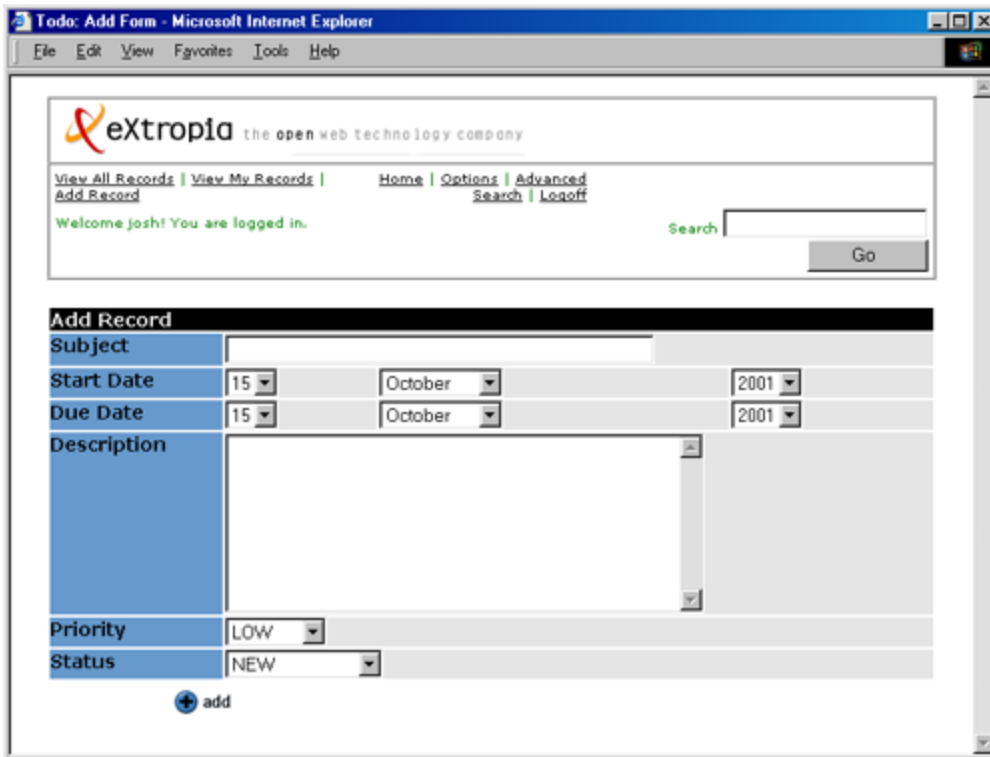

- **Delete Record View** will allow logged on users to delete any record.

- **Modify Record** will provide the user with the ability to edit the details for any project.

- **Details View** displays the record contents. A task has a Subject, Start Date, End Date, Description, Priority, and Status.
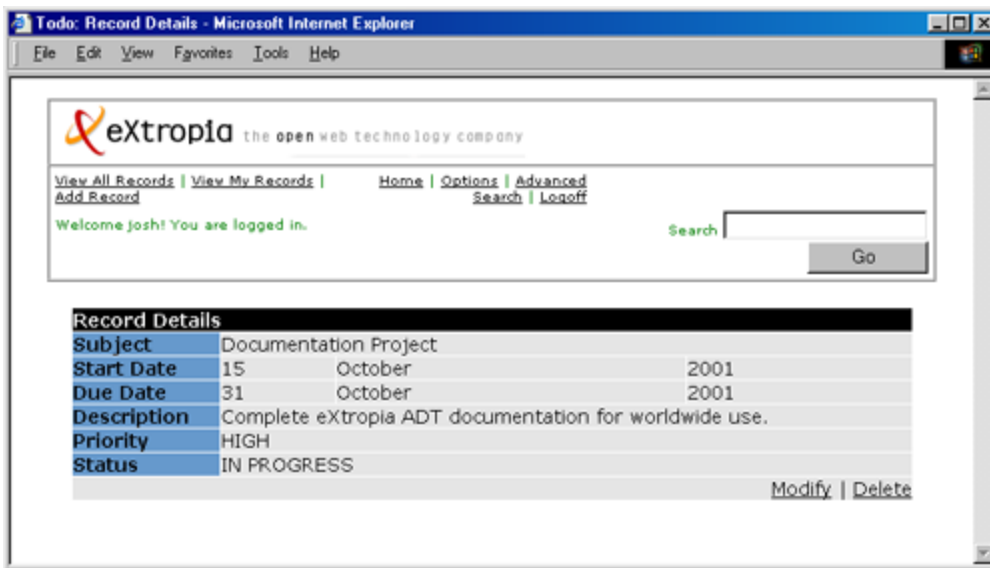
- **Acknowledgement View** will be displayed after Add, Modify, or Delete to let the user know that the action was successful.
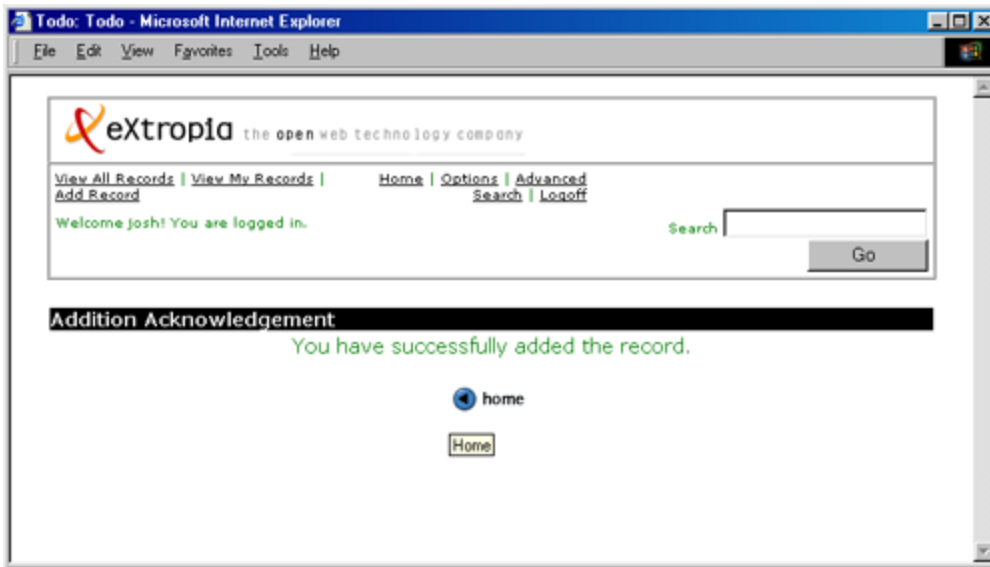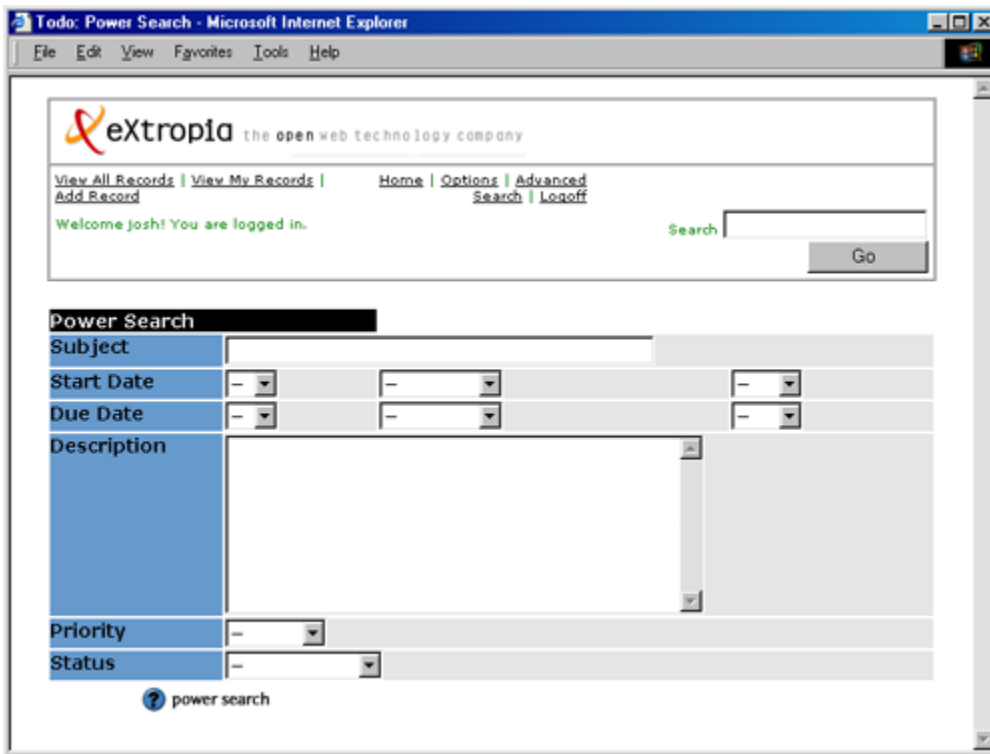

- **Confirmation View** will display project details for final confirmation before they are committed to the data source.
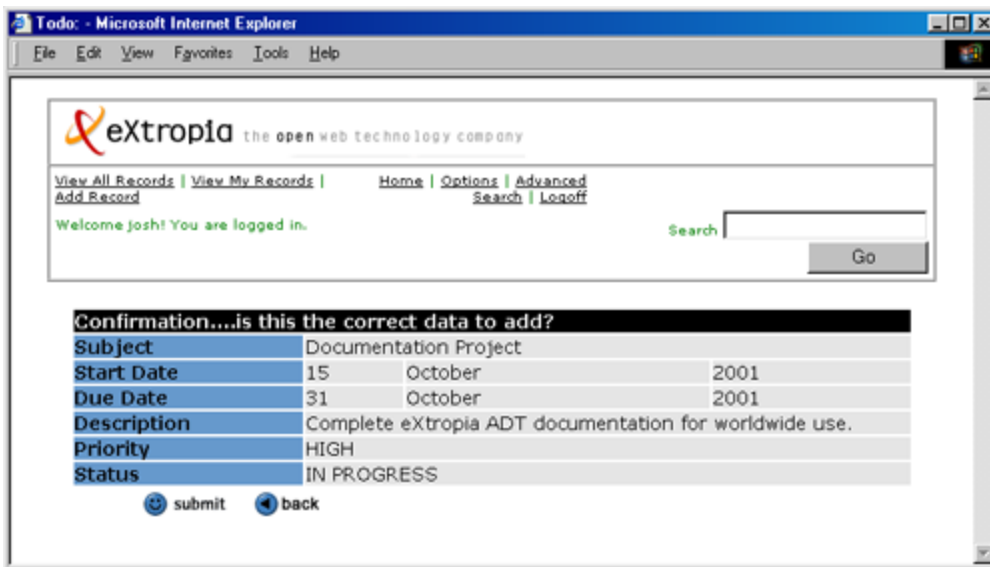

Common Features Definitions

- **Basic Search** permits any user to search the database based upon keywords. Available in the header.

- **Advanced Search** permits any user to search the database for any or all of the available fields.

- **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.
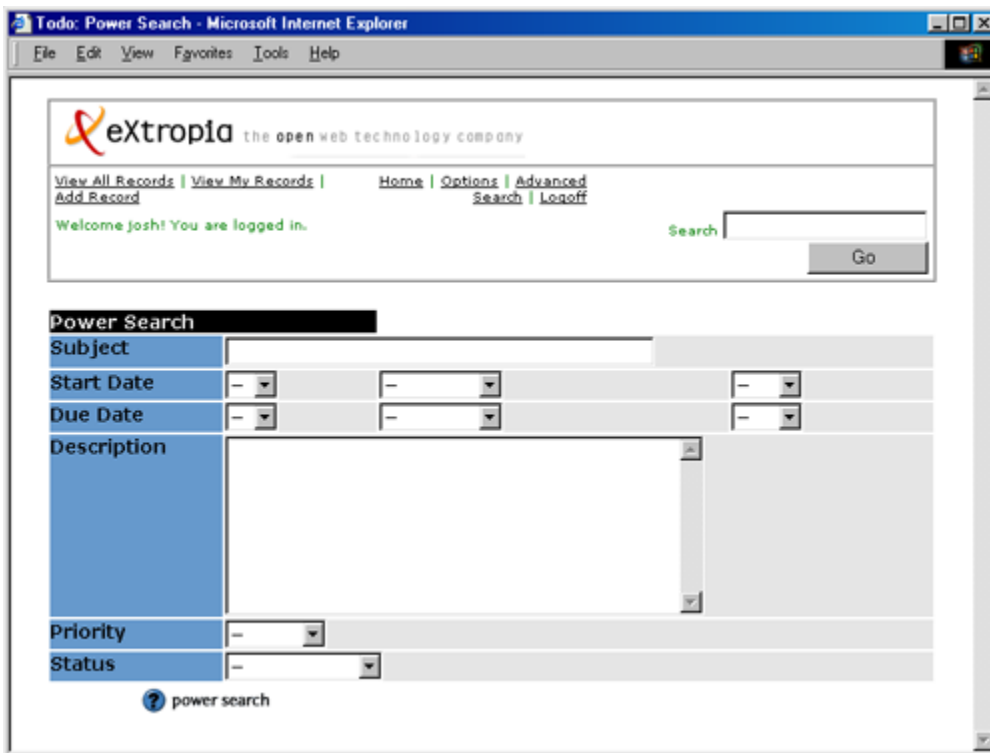
3.1.2 Risks and Dependencies

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 '|'.

Field Name	Description	Field Type
record_id	Record value (Auto Incremental)	Autoincremented integer
Owner	Owner of the task	Char
Start_date	Start Date	Date
Due_date	End Date	Date
Subject	Subject line	char
description	Description of task	Char (text)
Status	Current Status	Char
Priority	Priority	Char
Last_mod_by	Username of last modifier	Char
Last_mod_date	Date of last modification	Date

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 Todo List 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 eXtropia ADT that divorces form and function.

5.5 Reusability

Web Todo List is highly reusable. The application can be modified for just about anything!

5.6 Serviceability