

Pathway Tools Website

Customization

(or how to make a **good impression** with **minimum efforts**)



Mario Latendresse
Bioinformatics Research Group
SRI International

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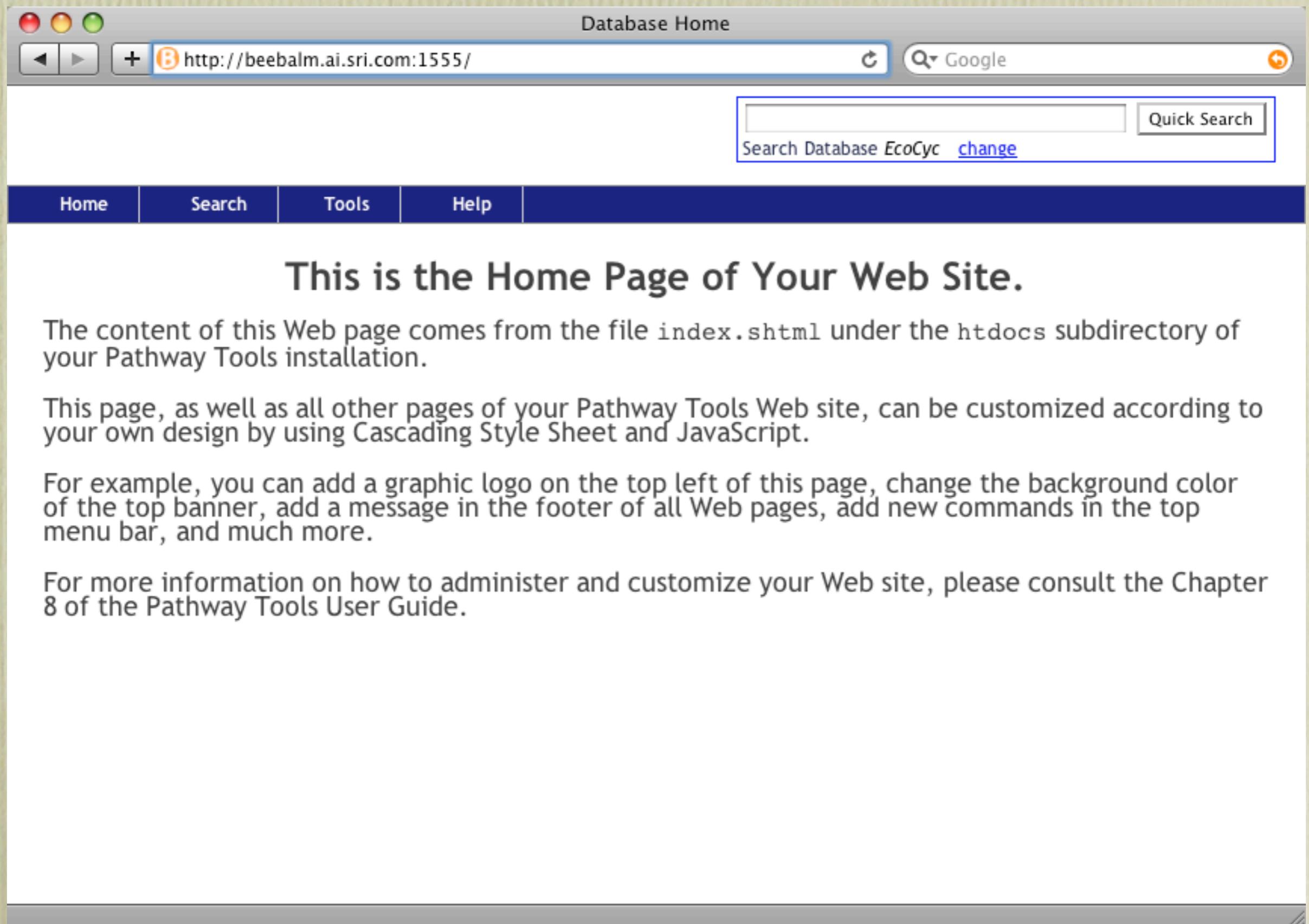
Starting a Pathway Tools Web Server

Starting a Pathway Tools Web server can be as simple as doing:

```
Unix% pathway-tools -www
```

but many line options and parameters are available in the `ptools-init.dat` file (in your `ptools-local` directory). More on this later. Also see the [Pathway Tools User Guide](#).

A User Web Site Without Customization



BioCyc.com is a User Customized Web Site (2)

The screenshot shows a web browser window titled "BioCyc Home" with the address bar displaying "http://biocyc.com/". The page features a navigation bar with "Home", "Search", "Tools", and "Help" links. A search box contains the text "Escherichia coli K-12 substr. MG1655" and a "Quick Search" button. The main content area is divided into sections: "ABOUT BIOCYC", "BIOCYC TOOLS", "BIOCYC PATHWAY/GENOME DATABASES", and "BioCyc Tier 1: Intensively Curated Databases". A left sidebar contains "News", "Information", and "Services" sections with various links.

Home | **Search** | **Tools** | **Help**

ABOUT BIOCYC

BioCyc is a collection of 507 Pathway/Genome Databases. Each database in the BioCyc collection describes the genome and metabolic pathways of a single organism.

To learn more about BioCyc, read the [Introduction to BioCyc](#) or watch our [free online instructional videos](#).

BIOCYC TOOLS

The BioCyc Web site contains many tools for navigating and analyzing these databases, and for analyzing omics data, including the following.

- Genome browser
- Display of individual metabolic pathways, and of full metabolic maps
- Visual analysis of user-supplied omics datasets by painting onto metabolic map, regulatory map, and genome map
- Comparative analysis tools

The downloadable version of BioCyc that includes the Pathway Tools software provides more speed and power than the BioCyc Web site [\[more\]](#). Multiple database configurations are available for installation with the software including multiple *E. coli* and *Shigella* genomes, multiple *Bacillus* genomes, multiple *Mycobacterium* genomes, and multiple mammalian genomes.

BIOCYC PATHWAY/GENOME DATABASES

The BioCyc databases are divided into three tiers, based on their quality.

Tier 1 databases have received person-decades of literature-based curation, and are the most accurate. Tier 2 and Tier 3 databases contain computationally predicted metabolic pathways, predictions as to which genes code for missing enzymes in metabolic pathways, and predicted operons.

PGDBs for many other organisms are available outside the BioCyc collection, created by other users of Pathway Tools. Some of these PGDBs are highly curated, and exist for important model organisms including *Mouse*, *Arabidopsis*, and *Yeast*. For more information on accessing these PGDBs, [click here](#).

BioCyc Tier 1: Intensively Curated Databases

BioCyc.com is a User Customized Web Site (2)

BioCyc.com uses the basic Pathway Tools distribution files and is customized according to the rules presented in these slides. (Also the rules in [Chapter 8](#) of the Pathway Tools User Guide.)

We simply copy user modifiable files on top of the “[htdocs](#)” directory. (Ok!, it is a bit more complex due to our cluster of servers.)

Two Types of Web Pages

1. Dynamic Web Pages (footer has “Page Generated ...”)

They are not stored on the file system. You **cannot** easily modify their contents. You **can** modify some of their look.

2. Static Web Pages

They exist **as files** on the file system. Usually under the “htdocs” subdirectory of your installation (modifiable). You could modify their content. You can easily modify their look.

Which Files Should Not Be modified

1. Most files should not be modified. In particular, all “.shtml” and “.html” files that have “template” in their name, should not be modified.
2. If you modify them, **your changes** would need to be merged with **our changes** which might result in **conflicts**.
3. If you modify some files, please keep a copy **outside** the Pathway Tools installation directory.
4. In the coming slides, we mention the files that can be modified without risking future conflicts.

The Home Page file `index.shtml`

The Home Page file `index.shtml` should be the first file to modify. This file typically refers (hyperlinks, virtual inclusion) to **other** Web pages (files) that you design and create. It is all a matter of knowing HTML, CSS and possibly some JavaScript.

In general, files that you modify should be **saved outside** your installation directory so that if a new Pathway Tools installation is done, your modified files do not get overwritten.

Virtual Include Mechanism

A “.shtml” file may include another file by using the command

```
<!--#include virtual="file-name"-->
```

The file `file-name` will be inserted in-situ when the parent file is served by the server (as in Apache).

This mechanism is used to decompose Web pages in smaller chunks. This is heavily used by Pathway Tools standard Web site look.

Template Files

To easily get the standard look, your pages should use the already defined template files.

Almost all your static files should follow the following pattern.

```
<!--#include virtual="template-part1of3.shtml"-->
<title>My Pathway Tools Web Site</title>
<!-- Anything that you want in the head tag.
      Could include scripts and css definitions.
-->
<!--#include virtual="template-part2of3.shtml"-->

<center><h1>My Web Site</h1></center>
<!-- The content of the page -->
<!--#include virtual="template-part3of3.shtml"-->
```

Two Main “Code” Files

1. File `style.css` has the basic Cascading Style Sheet definitions. It defines most of the look of the Web site.
2. File `pathwayTools.js` has the basic JavaScript code to add functionality to the Web site.
3. These files **should not be modified**, but **should be consulted** to understand the CSS definitions and JavaScript code to override in the user customizable files...

Overriding Mechanism

1. The files `userWebsiteCustomization.css` and `userWebsiteCustomization.js` are **loaded after** files `style.css` and `pathwayTools.js` for all Web pages.
2. So the two main user customization files can **override** the definitions in `style.css` and `pathwayTools.js`

Two Main “Code” Files to Modify

1. `userWebsiteCustomization.css`

For your own cascading style sheet definitions that adds new styles. Or to modify some definitions in `style.css`

2. `userWebsiteCustomization.js`

For your own JavaScript that adds functionality to your Web pages. Or to override some specific functions in `pathwayTools.js`

Temporary Message (in banner)

You simply need to modify the file `temporary-message.shtml`

```
<!-- Beginning user temporary message -->  
  
<div id=userTemporaryMsg class=temporaryMsg>  
<!-- you should enter your temporary message here -->  
</div>  
  
<!-- End user temporary message -->
```

The look of the message is controlled by the CSS definition of class “temporaryMsg”. You can modify this definition in `userWebsiteCustomization.css`

Graphic Logo in the Banner

redefining (from `style.css`)

```
#ptbanner a.logo {  
    display: block;  
    height: 60;  
    width: 160;  
    float: left;  
}
```

to something like

```
#ptbanner a.logo {  
    background-image: url("myLogo.gif");  
    background-repeat: norepeat;  
    display: block;  
    height: 60;  
    width: 160;  
    float: left;  
}
```

in file `userWebsiteCustomization.css`

Adding a Footer Text to All Web Pages

Edit the file `userFooterCustomization.shtml` with your own content and design.

It is distributed with an empty HTML content with some comments.

Background Color in the Banner

Create a definition like so in `userWebsiteCustomization.css` with your favorite color.

```
#ptbanner {  
  width: 100%;  
  padding: 0;  
  margin: 0;  
  border: 0;  
  background-color: #FFFFFF;  
  background-position: 0px 2px;  
  height: 60;  
  padding-top: 6px;  
}
```

and many other style parameters could be modified.

Modifying the QuickSearch Box Look

The following css definition can be redefined in
`userWebsiteCustomization.css`

```
.searchMenu {  
  font-size: 11px;  
  color: black;  
  padding-bottom: 0px;  
  text-align: right;  
  white-space: nowrap;  
}
```

for example, changing the font-size of the text
to 12px

The File `style.css` is the Place to Look

Many other modifications to the look of the Web pages can be done.

There are too numerous to list individually and likely to expand in the future.

You can consult the file `style.css` for more possible modifications.

The modus operandi: modify `userWebsiteCustomization.css`
not `style.css`

Where to Define Your Initializing JavaScript Code?

1. All Web pages have `<body onload=initOnWindowLoad()>`
(included by `template-part2of3.shtml`)
2. The function `userDefinedBeforePathwayToolsInit` is called by `initOnWindowLoad` before the function `pathwayToolsInit`. Also, `userDefinedAfterPathwayToolsInit` is called after the function `pathwayToolsInit`.
3. So, your initializing JavaScript code should be defined in function `userDefinedBeforePathwayToolsInit` or/and in `userDefinedAfterPathwayToolsInit` in file `userWebsiteCustomization.js`

The Yahoo! User Interface Library (YUI)

Most complex Widgets (dialog panel, autocompletion, tree view, organism selector, top menu bar) are based on the **YUI library**.

There are lots of examples on the YUI Web site on how to create and manipulate the widgets.

The look of the widgets can be controlled via the `userWebsiteCustomization.css` file.

How to Modify the Top Menu Bar

The top menu bar uses the YUI library. The file `template-top-menubar.shtml` contains the basic structure of the top menu bar. But you should not change it. Instead you define function `addSiteSpecificMenuItems` in `userWebsiteCustomization.js`

Example:

```
function addSiteSpecificMenuItems () {
  if (orgID() == "ECOLI") {
    var searchMenu =YAHOO.widget.MenuManager.getMenu("search");
    searchMenu.addItem ({ url: "/ecocyc/textpresso.shtml",
                          text: "Search Full-text Articles"});
  }
}
```

Administering Your Web Site (I)

Many parameters to set in the `pools-init.dat` file to control the behavior of your Web site.

1. User account database parameters.
2. List of accessible (public) databases.
3. The name of your Web site.
4. The email address to use when user sends technical support questions.
5. The root directory of the static Web pages (HTML, CSS, JS).
6. ReCaptcha keys for the reCaptcha system when providing user accounts.

Administering Your Web Site (2)

1. It is recommended to restart your Pathway Tools Web server from time to time. For example, once a day.
2. This eliminates memory leak issues and potentially the fragmentation of the Lisp heap.

Where to Find More Information

1. The **Chapter 8** of the Pathway Tools User Guide.
2. The files `style.css`, `pathwayTools.js`
3. Cascading Style Sheet and JavaScript reference books. (or the Web)
4. The YUI library Web site. (Yahoo!)
5. `ptools-support@ai.sri.com`

The End

(of how to make a good impression with
minimum efforts)
