

Writing A Custom Skin for Pavlov

1. Writing a Skin for Pavlov

One of the big improvements in Pavlov 1.1 is the leveraging of the [Apache Jakarta Project's Velocity Template Engine](#) to create templated Pluglets and Skins. This document describes how to write a custom Skin for Pavlov.

2. Step 1: Find The Skins Directory

Let's assume you already have Pavlov 1.1B1 or later installed. Find the directory it was installed in. Now, there will be a subdirectory called `resources` and its subdirectory of `resources/skins`. In the 1.1B1 release, there are several subdirectories of skins, like "ciph" and "euphoria." Every subdirectory of `skins` is scanned at startup for subdirectories that have velocity template files named `Library.vm`, `Logon.vm`, `QuizPanel.vm`, and `Welcome.vm`. Pavlov also looks for a file called `Theme.theme` which specifies the fonts and colors to use for the skin.

Note:

Don't spend any time working on the Logon and Welcome templates. They need to be there, but aren't really used. They won't need to be there in a near-future release.

Let's take a look at one of these examples.

3. Step 2: Look at an Example

We open up the file `QuizPanel.vm` in the `ciph` directory and see something like this:

```
01 <html>
02 <head>
03 <title>pavlov quiz: $BOOK_NAME: $CHAPTER_NAME</title>
04 </head>
05 <body text="#ffffff" bgcolor="#000000" link="#ffffff" vlink="#ffffff"
06   alink="#ffffff" background="{BASE_URL}ciph.JPG">
07 pavlov quiz: $BOOK_NAME: $CHAPTER_NAME
08 <HR>
09 <table width="100%" height="400" border="1">
10   <tbody>
11     <tr width="100%" height="200">
```

```
12
13 #if( $QUESTION_IMAGE!="")
14     <td valign="Top" height="200" colspan="1">
15         <div class="P"><big>$QUESTION_TEXT</big></div>
16     </td>
17     <td>
18     </td>
19
20 #else
21     <td colspan="2" height="200" >
22     <div class="P"><big>$QUESTION_TEXT</big><</div>
23     </td>
24
25 #end
26     </tr>
27     <tr>
28     <td colspan="2">
29     <table width="100%" border="0" height="200">
30     <tbody>
31     <tr>
32     <td height="100%"><!-- start a -->
33     <div class="P"><big><a href="$ {BASE_URL} $A_BUTTON"><b>
34     A.</b></a>
35     $A_ANSWER </big></div>
36     <hr>
37     ... stuff deleted...
37     </td>
38     </tr>
39     </tbody>
40     </table>
41     </tbody>
42     </table>
43</body>
44</html>
```

Let's make a few observations:

- This is a well formed HTML document (Java doesn't like bad HTML)
- It has some funny stuff with pound "#" signs (this is Velocity for "do something")
- It has some funny stuff with dollar "\$" signs (this is Velocity for "value of something")
- \$BOOK_NAME and \$CHAPTER_NAME let you reference the name of the book and chapter the user is quizzing on.
- On lines 13 to 18, we display the question's image along with the question's text if the image exists
- On lines 20 to 25, we display the question's text if no image exists for the question
- On lines 33 to 35, we display answer A as well as providing a link that Pavlov uses to determine if it is the right answer or the wrong answer
- Note the \$BASE_URL variable in line 5. This lets you use resources in the same directory as QuizPanel.vm.
- The rest of the code just closes the table and document.

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- Since we know about how big this HTML page is going to be, we set the table height and width. This makes life a little easier on Java. If we do not know the size, the Java components can figure it out on their own.
- Feel free to use CSS Stylesheets, either inlined with the <STYLE> tag or loaded with a <LINK> tag. Remember to use \$BASE_URL to help the system find linked files.

Note:

Java doesn't like some META tags (charset specifiers seem to be the primary offenders), and it hates bad HTML. If you have problems debugging a VelocityPluglet, try to remove META tags and simplify the HTML.

4. Step 3: Set up A Default Theme

When you've got your HTML how you want it, you've probably made some decisions on what sort of fonts and colors you want the skin to use. You can ensure that the rest of the Pavlov application uses these fonts and colors by providing a file `Theme.theme` in your skin directory. You can create this file by hand or using the "Theme Editor" available in Pavlov. (If you use the theme editor, you'll have to save your theme, then copy it from `resources/themes/YourTheme.theme` to `resources/skins/yourskin/Theme.theme`.)

Note:

You can skip the next paragraph if you're planning to use the ThemeEditor to create your themes.

As an introduction to themes, let's take a look at the `Binary.theme` file. The colors are comprised of triplets of numbers from 0-255 describing the amount of red, green, and blue in the color. Attributes like `fontSize`, `name`, and `fontName` are pretty self-explanatory. The best way to understand what parts of the GUI correspond to the various colors is to use the Theme Editor in Pavlov.

```
#Tue May 11 20:41:04 EDT 2004
name=Binary
fontName=Microsoft Sans Serif
text2=153,153,153
text1=255,255,255
black=255,255,255
fontStyle=1
white=0,0,0
primary3=0,0,0
secondary3=31,31,31
primary2=0,0,0
secondary2=204,204,204
primary1=204,204,204
secondary1=0,0,0
fontSize=14
```

5. Step 4: The Other Template Files

The files `Logon.vm` and `Welcome.vm` shouldn't be part of the skin system, but they have to be there for now. You shouldn't spend any effort customizing these templates. The `Library.vm` file controls how the books and chapters containing questions are displayed to the user. You should customize `Library.vm` to agree with your `QuizPanel.vm` template.

6. Step 5: Use Advanced Velocity Features

The best source for information on advanced Velocity features is at [Apache Jakarta Project's Velocity Site](#). There are some neat tricks on display there.

7. Step 6: Get More Information From Pavlov

Pavlov passes a great deal of information to your template. The default skin in `skins/default` displays all the information Pavlov passes. If you want to display more or less information, feel free.

8. Step 7: Publish

When you get a skin that you like, send it to the Pavlov project. We'll need copyright information and have to filter out obscenities, but other than that, we'll be happy to make your skin available. That way, others can not only use your skin, but learn from it as well!

9. Known Bugs and Issues

- Selecting a skin before starting a quiz causes some (minor) problems in how the `QuizPanel` is drawn.
- It's a really good idea to use HTML tables to enclose the content in `Library.vm` and `QuizPanel.vm`, and to set the width and height of these tables. 100% is a good setting for table width. Using exact numbers like `width="400" height="400"` is a good idea.