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With a foreword by Marc Laidlaw

HACK
#81

Put Your Face in DOOM

Increase the immersiveness of id's classic FPS by replacing the space marine's pictures with your own.

id Software's groundbreaking DOOM almost singlehandedly created the modern FPS genre. With style oozing from every crevice, a near-infinite amount of customizability, and an open source codebase, it's no wonder that people still play variants such as PrBoom (<http://prboom.sourceforge.net/>).

As any dedicated modder will tell you, half the fun is in making your own fun. Earlier games were also hackable, but DOOM was unique in *encouraging* gamers to add their own maps, weapons, and graphics. Since it was a pre-Windows pioneer, the tools aren't very user-friendly, but they exist and work with a little prodding.

Creating your own maps is a lot of work, but it's much easier to replace individual graphics. One good way to start is to change the picture of your character in the game's status bar.

Finding DOOM

Start by downloading PrBoom or an equivalent. PrBoom is nice in that it supports Windows and Linux equally well. Windows installation is as easy as downloading the latest Windows ZIP archive (2.2.4 at the time of writing) and unzipping it into an appropriate directory.

If you have the registered version of DOOM somewhere,* copy its *.wad* files into the PrBoom directory. Otherwise, look for a file called *doom1.wad* online. This is the shareware version; I found it at <http://www.lbjhs.net/~jessh/lsdldoom/doom1.wad.gz>.

How WADs Work

DOOM stores all its maps, images, and sounds in WAD files. There are two types. IWADs are the original internal WADs shipped with the game; they contain the default game information. PWADs are player-supplied WADs that change or add parts of the game. They can be much smaller, because anything they don't supply directly comes from the original IWAD.

Think of a WAD as a directory containing subdirectories and files, somewhat like a ZIP archive. To replace a particular graphic, you have to know its details within the IWAD and add an equivalent graphic to your PWAD.

* id still sells Ultimate DOOM (<http://www.idsoftware.com/games/doom/doom-ultimate/>).

That's where tools such as DeuTex (<http://www.teaser.fr/~amajorel/deutex/>) come in.



Technically, you're not supposed to be able to create or use PWADs with the shareware IWAD. I renamed *doom1.wad* to *doom.wad*, and PrBoom and DeuTex were happy.

DeuTex is a WAD disassembler, meaning that it can disassemble a WAD into a real directory. It runs on DOS and Linux. Download and extract DeuTex into its own directory, then extract the data from *doom.wad* with a command resembling:

```
$ ./deutex -extract /usr/share/games/doom/doom.wad
```

This creates several directories such as *textures/* and *sounds/* as well as a file called *wadinfo.txt*.

Replacing an Image

Besides trial and error, there's really no good way to figure out which image within this WAD to replace. Fortunately, I can tell you that the files in *graphics/stf** represent the face in the status bar. I replaced the god-mode powerup image (type **iddqd** while playing) with a picture of my nephew. DeuTex extracts this image to *graphics/stfgod0.pnm*.

The trickiest part of this process is building a 24×29 image that looks good in DOOM, especially with its restricted palette. I cropped and adjusted the picture until it fit, then saved it as a 256-color GIF file in *graphics/stfgod0.gif*. Be sure to keep the same base name as the file you're replacing; otherwise, DOOM won't know how to find the resource. It's okay to use a different file extension; DeuTex converts BMP, GIF, or JPEG files to PPM files automatically when it builds a WAD. If you do use a different extension, though, be sure to move the original file out of the way so that DeuTex will use your replacement.



For best results, remove the background of the image, leaving only the subject's face and head. The image is much less jarring this way.

The next step is to build a manifest file to tell DeuTex which files to assemble. Open the *wadinfo.txt* file in your favorite text editor. It has several internal sections for the different types of files within the WAD. Delete everything that you haven't replaced. In my case, I had a very short file:

```
# List of Pictures (with insertion point)
```

```
[graphics]  
STFGODO -5      -2
```

Be sure to keep the `[graphics]` heading, though you can delete the entries beneath it for the images you want to stay the same. Save the file with a different name, perhaps *godinfo.txt*, so you can make other modifications by copying the relevant lines from the original manifest.

Building a PWAD

The final step is to assemble all the new resources into a PWAD. DeuTex again can do this. Use a command resembling:

```
$ ./deutex -build godinfo.txt baby.wad
```

If everything goes well, this will write a new PWAD called *baby.wad* in your current directory. DeuTex helpfully refuses to overwrite an existing file, so delete or move *baby.wad* if you've already generated one.

Launching Your New PWAD

To see the effects of your work, launch PrBoom with your new PWAD. Use the `-file` switch to give the location of the file:

```
$ prboom -file baby.wad
```

Start a new game, type **iddqd**, and marvel at the connection between innocence and ultimate power, seen in [Figure 7-4](#).

The same technique here works for replacing any image or sound within the IWAD files, including monsters and weapons. Remember, if you can do it for one image, you can do it for many.



Figure 7-4. An alternate god-mode image