

# Merging Netflix and TiVo

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I don't jump up to answer a phone, and my computer doesn't make any sound when I get email. It makes me feel like I'm in charge of technology instead of the other way around. As part of that, I also don't like watching TV when the TV tells me too. I also don't want to deal with the local video store and their operating hours and return schedule. That makes both TiVo, my digital video recorder, and Netflix, a DVD-by-mail program, perfect for me.

Netflix is a service that sends me DVDs in the mail. I watch them and send them back. When Netflix gets them back, they send me more DVDs out of my queue. On their website (<http://www.netflix.com>), I maintain a list of movies that I want to see and in which order I want to see them. I use the 3-out-at-a-time plan, meaning I have up to three DVDs at a time.

TiVo also has a website (<http://www.tivo.com>) that is smart enough to know what's playing on my local cable provider. I can schedule programs to record through the website. It's a decent website, but just like I hate dealing with my phone, email, and local video store, I don't want to deal with websites either.

Is there a way that I can figure out which movies in my Netflix queue will be on cable so I can schedule TiVo to record them? Why waste the money renting DVDs and using up some of my Netflix bandwidth if I can get it on cable?

I could go through the list of all movies through my TiVo box's "Find a program" interface, but that's tedious. When something is tedious, I reach for Perl so I can automate it. I wrote `netflix2tivo` to do this, and the programming was a snap to write; it was figuring out what I needed to do that took up most of the time.

## ■ The basics-----

My basic solution involves getting the titles from my Netflix queue, then going through each title to find it in TiVo Central Online (TCO) (<http://tivo.com/tivo-tco/index.do>) service. TCO is an online service and is not directly connected to my TiVo hardware in my home. I can search for shows and schedule recordings in TCO, but my actual TiVo hardware doesn't find out about any of this until it talks to the TiVo mothership again.

To get this done, I use a combination of the Perl modules `WWW:Mechanize` and `CGI` for a program I run from the command line. I'll login to both my Netflix and TCO accounts,

extract the information I need, then match up the titles that are on both sides. Easy peasy.

## ■ The modulino prototype-----

*Code Listing 1* (next page) shows the program I want before I implement the real code. This is the basic setup for a modulino, which I go through in Chapter 18, "Modules as Programs", of *Mastering Perl*. I write the program as a module and include a run method that puts the module parts together to do what I need. If I use this file like a program, `caller` is false and I invoke `run`. Otherwise, if I use this file as a module, perhaps in a test script, `run` doesn't execute but I can test the subroutines.

Part of my modulino process is pretending that the interface that I want already exists. Instead of starting with a bit of the code that does part of the task and building up from there, I'll assume those bits exist already. This isn't quite top-down design either, since I don't make any attempt to figure out everything I want to do or to make a complete, consistent interface. I just do what seems natural for each part, and sometimes this works nicely.

Inside `run`, I first initialize that application, which I'll show in a moment. I'm going to think about initialization only as I run into situations where my application needs to know something. Once I set up everything and have my application object (`$app`), I call `get_netflix_titles` to get my Netflix queue. After I have the queue, I go through each of the titles and look for them through TCO.

When I went through the Netflix queue, I remembered the production year for each title so I could distinguish between different shows with the same title. I knew that was going to be a problem because I like old movies and too many of them have remakes. I know that both Netflix and TiVo have the year information. Again, I'm just pretending I've already figured out how to do that. I'll show how I did that later. My solution looks easy, but it really took me a while to figure out how to extract all of that info.

Remembering the year doesn't completely solve the problem though, because the 2006 movie *Curious George* (<http://imdb.com/title/tt0381971/>) still matches the ongoing TV show of the same title, which also produced episodes that year and run as repeats. I could do a bit more work to figure out the show duration and

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