

Overview

With the uprising of the TV binge-watching phenomenon, college students, housewives, and teenagers everywhere need to keep their TV life in order. And if maintaining 15 different emotional commitments at once isn't challenging enough, the Internet is trying to make it difficult for you to keep up with your shows. When you're trying to plan your week (because who needs dinner, when Leroy Jethro Gibbs is about to take down the bad guys) it's a clunky, slow, multi-page pain to find the shows you're interested in, and put them in your schedule. Instead, searching for shows should be easy, and you should be able to view your favorites each week in just a glance.

Current Interface

While my original plan was to improve the TV schedule as given in the XBMC program, in my research I ran across some more relevant solutions. I will focus on one such solution, episodecalendar.com, which allows users to register for an account and view custom calendars. These monthly calendars display which of their indicated, favorite shows will be available each day as well as the episode number that will be airing.

Problem with current interface

While this website, in general, has excellent features, it does not give users the option to view only one week at a time. It also differentiates between season premieres, unwatched episodes, watched episodes, and episodes during the next month. To reduce information overload with unnecessary details, users should only be presented with the current week they are interested in, and only new episodes should be displayed – not re-runs. To allow easy intake and processing of information, shows should have familiar banners or logos displayed.

Applying which HCI concept would help?

To improve this service, I will apply the concept of minimal memory load for users – they will simply add a TV show and its banner will appear during the day and time the next episode airs. Novices will be able to easily use this interface, as the only function they will be performing is the familiar “search” feature. With this application, users will have reduced short-term memory load, will not have to learn any new skills, and with the assistance of visual mapping will be able to take in their weekly TV schedule in one glance. This display will reduce the time it takes a user to add a favorite show to their calendar and discover the day and time of the next showing.

Related research papers

Nine Ways to Reduce Cognitive Load in Multimedia Learning

Nine solutions are offered to reduce cognitive load: off-loading, segmenting, pretraining, weeding, signaling, aligning words and pictures, eliminating redundancy, synchronizing, and individualizing. These solutions solve five types of overload, as defined by the authors. In addition, five modes of knowledge representation are discussed – physical, sensory, shallow working memory, deep working memory, and long-term memory.

In my project I will use weeding, aligning works and pictures, and eliminating redundancy. Weeding will involved removing unnecessary information that episodecalendar.com displays, such as

episode number and title. Aligning words and pictures simply involves ensuring banners displayed for each show have both familiar scenes/logos as well as show title text. Finally, eliminating redundancy will be the removal of additional weeks on a single page.

Direct Measurement of Cognitive Load in Multimedia Learning

Researching the effect of single tasks vs. dual tasks (both visual and multimedia), these researchers found it took significantly less time for subjects to perform a task in single-task conditions than in dual-task conditions. For dual tasks, times were significantly faster for multimedia tasks than purely visual tasks.

By having only one main task on my page - adding a show to your schedule – I intend to reduce the time it takes for my clients to create their schedules. Their overall experience should be simpler and easier to understand. In addition, my use of banner images rather than purely text will complement these improvements.

Multimedia instructions and cognitive load theory: Effects of modality and cueing

This study found that lessons with images and other media, rather than just text, had higher retention rates. However, it also found that these results could not necessarily be generalized outside of this study.

None-the-less, I mention that I found the results intriguing, and hope it is further reason that replacing text with banners will help users quickly and efficiently take in the interface.

Existing solutions

I found three additional sites that provide weekly TV scheduling. The first, <http://www.locatetv.com/new-tv-episodes/>, provides *too* much information, and does not provide opportunities to customize what shows are displayed, which is an important feature for our audience, especially in order to reduce the number of shows we display – which they are not interested in. The second, <http://epguides.com/grid/>, has a similar problem. Again, it displays all the shows, and we want our audience to be able to choose the shows they watch, so their time spent reading this schedule is reduced. The final service, <http://www.mytvrss.com/feed.do#>, is probably closest to our goal in terms of allowing users to easily choose their favorite shows, and upcoming episodes on a week-by-week basis. However, this service is not intended for novices, as it requires setting up an RSS feed.

Population

- 1) Who are they?
 - a. Novice users who are interested in creating a schedule for the weekly TV shows they wish to keep up with.
- 2) How are you going to find people to test your interface?
 - a. Because no install is necessary, users could be found online or asked to participate some place around campus. I will probably do both of these tactics, as well as ask some younger and older audiences I'm friends with to evaluate it, to attempt and remove age or experience biases.

Metric

- 1) What tasks are you going to have users do?
 - a. To test this interface, I will ask users to perform the same tasks on episodecalendar.com and my website, then report their times and subjective opinions of each.

Interview clients

- 1) Describe procedure (Attach questions in appendix)
 - a. Clients were emailed and asked to respond to the 6 attached questions.
- 2) Describe main findings
 - a. Of the clients who track their TV schedules, nearly all had never used episodecalendar.com before. However, they evaluated the website and over 7/10 said they would prefer a weekly view. Opinions were split on whether the dates should update daily, however. While a lot of comments were out of the scope of this project, the most common request were options – ability to change the week, view of the week (eg. If the dates updated daily or weekly), etc. 4/10 people mentioned using photos instead of text, which I had meant to bring up in my survey, and was surprised they specified.
- 3) How will the findings influence your design
 - a. I will move forward with creating a TV scheduling website which displays a single week, per request. As for displaying dates, I'll go with updating dates daily, though I will try to incorporate an option, which allows users to switch this, if time permits. Instead of using text to display TV names, I will use banners supplies by thetvdb.com. Together, these 2 main redesigns will decrease information users are expected to take in and allow for a more minimal, relevant experience. The simplicity of this design will benefit novices, as well, as no learning is required.

Your Proposed Improvement

- 1) How are the papers influencing your proposed design?
 - a. Since I researched these papers after surveying my clients, I found my prompts and their desires to be backed by research. Removing additional weeks and unnecessary information and instead simplifying the interface and using images to display images rather than text will improve the interface. Users will find the site simple to use, quick to personalize, and easy to understand quickly.
- 2) What are proposed clients asking for?
 - a. Of the clients I've spoken with, they've asked for a simplified view, with images, that you can easily add shows to. They specifically want to be able to either save this page or print it. Some clients have become very excited and asked for a number of additional features, which are beyond the scope of this project.
- 3) What is the programming component?
 - a. I have written HTML/CSS before, but I have not used the tvrage.com or thetvdb.com APIs before. To create this interface, I will create a web page which formats the information received from tvrage.com and thetvdb.com at the user's request.
- 4) What are the features you are going to specifically build?
 - a. I will build the website, the search, and the calls to receive information from tvrage.com and thetvdb.com.

Appendix

Research Articles:

Nine Ways to Reduce Cognitive Load in Multimedia Learning

http://chua2.fiu.edu/nursing/anesthesiology/courses/ngr%206715%20insttech/slides/reduce_cognitive_load_in_me_mayer_moreno2003.pdf

Mayer, R. E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational psychologist, 38*(1), 43-52.

Direct Measurement of Cognitive Load in Multimedia Learning

http://steinhardtapps.es.its.nyu.edu/create/courses/2174/reading/Brunken_Plass_Leutner_EP.pdf

Brunken, R., Plass, J. L., & Leutner, D. (2003). Direct measurement of cognitive load in multimedia learning. *Educational Psychologist, 38*(1), 53-61.

Multimedia instructions and cognitive load theory: Effects of modality and cueing

<http://onlinelibrary.wiley.com/doi/10.1348/000709904322848824/abstract>

Tabbers, H. K., Martens, R. L., & Merriënboer, J. J. (2004). Multimedia instructions and cognitive load theory: Effects of modality and cueing. *British Journal of Educational Psychology, 74*(1), 71-81.

Questions asked:

1. Do you create calendars to track your favorite TV shows?
2. Have you used episodecalendar.com before?
3. When viewing the calendar offered by episodecalendar.com, what improvements would you like to make?
4. If you had the choice, would you prefer to see a monthly view of your programs, a weekly view (that doesn't display your show if it isn't airing that week), or a permanent weekly view (displays all your shows during their regular airings, even if they are not airing that week)?
 - a. If you chose a weekly view, would you prefer that each day be updated daily, or rather on a weekly basis? (That is, on Tuesday the 12th, the Monday before it would change to display 'Monday the 18th).
5. What additional changes would you like to see?