Doane Journalism iOS RSS Reader

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Abstract

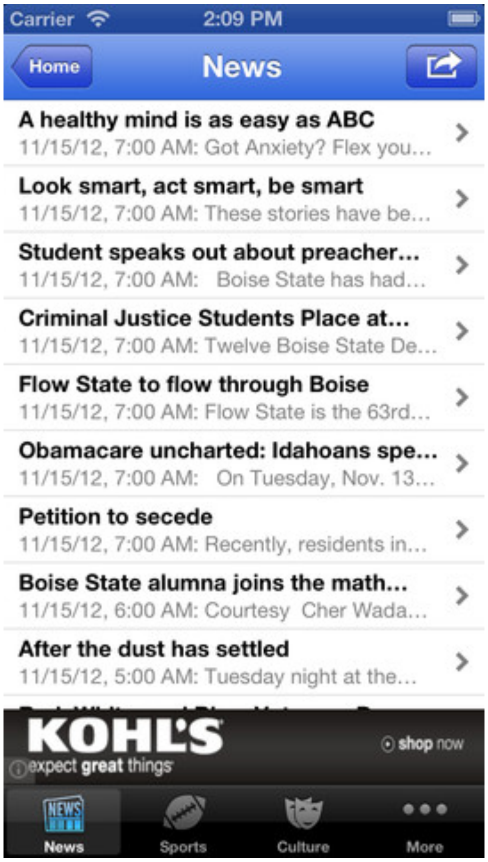
Doane journalism students operate several media outlets, such as a newspaper (The Doane Owl), a radio station (91.9, KDNE), a television station (DCTV), and a student news Web site (Doaneline). This project combines publications from these outlets into one iOS application. We found the easiest way to accomplish this was to create an RSS reader. The reader takes the different categories of RSS feeds and puts the articles into different tabs based on content type.

As with any developmental project, this one had numerous learning experiences along the way. In the end we have a working prototype of an RSS reader tailored to Doane's journalism department. There are features that we didn't have the time or the team to produce. However, the project now can easily be continued on as someone else's senior project, or it may be outsourced to a company to create the full version.

1 Recognize

Doane College journalism students operate several media outlets that include a newspaper (The Doane Owl), a radio station (91.9, KDNE), a television station (DCTV), and a student news Web site (Doaneline). The professors that oversee those media outlets knew that the next step to a media outlet was a mobile application. They looked at their options for having one created and found that it would be too expensive for their needs and budget.

They brought the project up to Doane's Information Science and Technology (IST) professors and together decided that it would be a great project for a student. This would give an IST student a hands-on, out of class experience as well as get the journalism department an application at low cost. Beyond the goal of getting all the news articles accessible, especially KDNE, on a mobile application they had no other difficult specifications.



A healthy mind is as easy as ABC
11/15/12, 7:00 AM: Got Anxiety? Flex you...

Look smart, act smart, be smart
11/15/12, 7:00 AM: These stories have be...

Student speaks out about preacher...
11/15/12, 7:00 AM: Boise State has had...

Criminal Justice Students Place at...
11/15/12, 7:00 AM: Twelve Boise State De...

Flow State to flow through Boise
11/15/12, 7:00 AM: Flow State is the 63rd...

Obamacare uncharted: Idahoans spe...
11/15/12, 7:00 AM: On Tuesday, Nov. 13...

Petition to secede
11/15/12, 7:00 AM: Recently, residents in...

Boise State alumna joins the math...
11/15/12, 6:00 AM: Courtesy Cher Wada...

After the dust has settled
11/15/12, 5:00 AM: Tuesday night at the...

Figure 1: A Tabbed iOS News Application

2 Analyze

Without any detailed specifications from the journalism department we started doing some research on different types of applications that could fit their needs. The first specification that we determined was which platform it would be. After figuring out the growing popularity of Apple devices on Doane's campus they decided iOS application would better fit their needs.

Through research we found numerous applications that we considered modeling our application after. Figure 1 shows an example of what we decided to model the app after. This app shows a tabbed environment in which each tab has a different category of news, with a full list of all the articles related to that category. Users are then able to tap on each article and it will bring up the full article. These were open, broad specifications since the professors were new to mobile development and didn't fully know what was possible to be completed. We didn't realize that Doane Student Media (DSM) stored all of their stories with a content management company and not our own servers. Once we encountered this we had to communicate with the content management company about how to gain access to the DSM content.

DSM's content management company only allows their clients access to the databases through an RSS feed. Once we learned of this detail the project then took a turn into an RSS reader that would be customized for DSM. At this point we had to turn our research in a different direction research because we knew that, the app would be completely different than what we had originally planned.

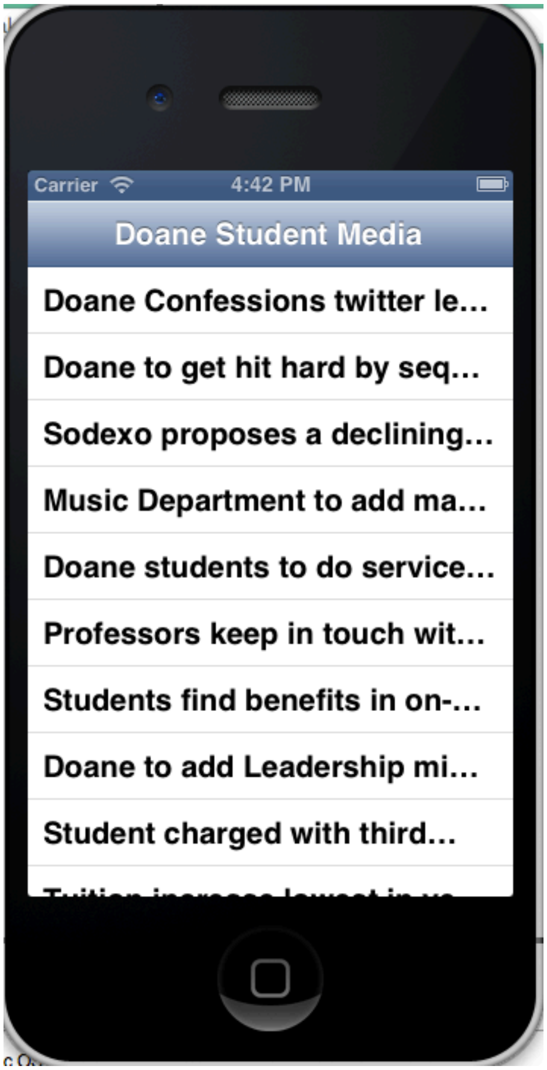
During the research of an RSS reader we discovered that this would be less of a challenge than the original plan. That plan would have had more database work, and more difficult to convert the database information into data that the application could work with.

3 Design

We used Figure 1 as a baseline of the overall design of the application. Since this was an iOS application we used Xcode as our development environment and coded in Objective C. We planned to take each RSS feed URL and parse it separately and then pick out the pieces to show in the list view, which is what is being shown in Figure 1. The application would then allow a user to tap on a story and be directed to a new screen in which the whole article would be displayed.

The user interface (UI) includes two views. The first one is a UITableView, which displays the stories in a list format, shown in Figure 2. The second is a UIView, that is customized to display the title of the story accessed and the full-text story. Beyond the views, the UI would also have a tab bar that would allow the user to flip between

UITableViews for each section of the news that they want to access. Each tab would bring up a UITableView that would have a list view of all the stories that a user could view from that section of the news. Each UITableView has a corresponding UIView to display the story called on. Each tab would have a navigation button to get back to the "home" tab.



Doane Student Media

- Doane Confessions twitter le...
- Doane to get hit hard by seq...
- Sodexo proposes a declining...
- Music Department to add ma...
- Doane students to do service...
- Professors keep in touch wit...
- Students find benefits in on-...
- Doane to add Leadership mi...
- Student charged with third...

Figure 2: The UITableView used in Doane's application

This design of the UI was a prototype based on the research that we had done at this point. We also knew that as we learned more about iOS development and Objective C, this design might need to be adapted and modified as abilities were discovered. Regardless of how the application would look the main goal was to get an iOS application out to Doane students and community members that would include all areas of DSM to give them access to it wherever they may be. If the design changed but still obtained that goal then it would be an application that met DSM's needs.

4 Implementation

We took this project and started out by learning the basics. We created “hello world” applications to get a feel for iOS development, Xcode, and Objective C. Through tutorials, code reference books, and other sources on the Internet we were able to learn the information necessary to complete this project. The books we started with as our main resources were *Beginning iOS 5 Application Development* by Wei-Meng Lee[1] and *Objective-C* by Jiva DeVoe[2]. These two gave us the knowledge on both sides, the language we were going to code in and the environment that it would be built for.

We started with a prototype UI. This gave us an example to demonstrate to DSM, to make sure that they were good with the looks. We created two UIs for DSM to look at, and they decided on the tab version as previously stated. While in the process of getting the UI working properly, we were investigating the database that DSM was using. We were unsure as to how the database would be set up and if they had it sectioned out by branch of DSM or category of news, especially since there was a chance that they could want the application to access stories opposite of how the database was storing data. After having some conversations with the professors overseeing DSM we discovered that a third party company was storing their database.

DSM professors contacted their third party company and found out that due to the nature of their business they would only give out the data through an RSS feed. We went to research RSS readers. This task seemed to be very doable and not overly complicated. We quickly found numerous resources as this looks to be a rising trend in mobile applications. There were many tutorials on parsing the XML files of an RSS feed. We just had to figure out which one(s) would help suit our needs best. We found one that worked really well and fulfilled most of our needs. However, working with the code for a few weeks we discovered an issue that looked as though it could be quite difficult to work through.

4.1 UI iOS Layout Issue

We discovered the issue that iOS has preset layouts that developers can take advantage of and as they have upgraded the operating system they have phased some of these layouts out. One of these layouts that they have phased out is a navigation layout. This allows the developer to have a main screen with information and automatically point to a view that will add extra details to an item on the previous view. This layout is quite popular and the code that we had found to suit our needs had been written to use this type of layout. Unfortunately we wanted to get a navigation layout inside of a tabbed layout. Again we turned to our resources and weren’t able to find many answers. It seemed this was not done much, and if it was, the application was licensed and we were not able to see how they implemented the solution.

After doing much research we continued to think about the UI and considered ways to get past the issue. The new ideas were to change to a different layout, continue research, or try to get in touch with people who may have done something similar. We always had the idea of changing the UI to a menu-style view, which would look similar to Figure 3. In this example there are six buttons. Each button would then take the user to a view similar to that in Figure 2 and work as the other layout would after getting through the layout in Figure 3. We decided to continue searching for help with the tabbed application but to try and get a working prototype even if the layout looks more like Figure 3.

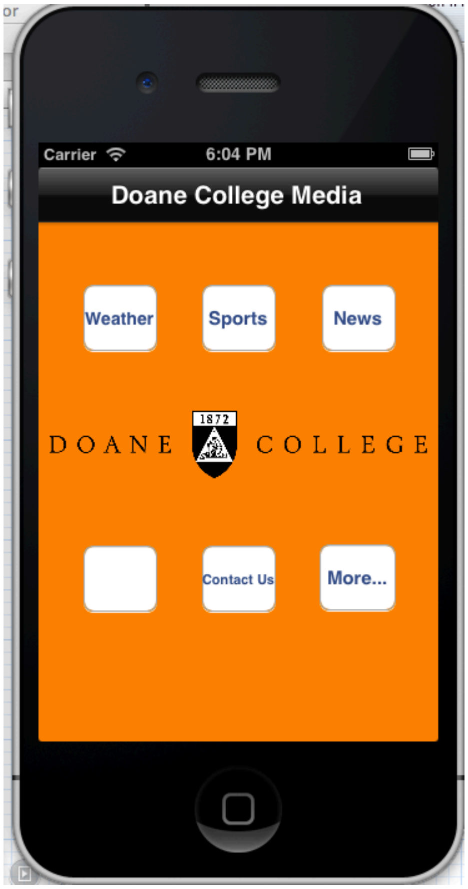
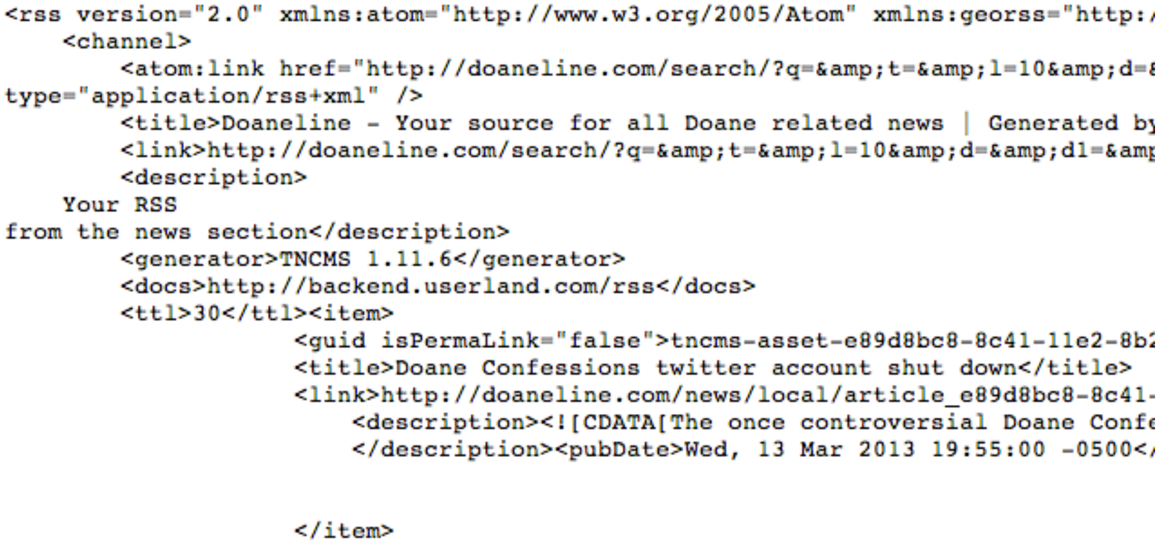


Figure 3: Menu Layout Example

4.2 RSS Feed Implementation

The next step was to implement the RSS feed parser. The parser takes in the URL of the feed and puts the stories into an array. The program then goes through the array and picks out specific tags from the feed to display in the UIView for each story that a user clicks on. The parser that we put into use takes the feed and calls on the built-in Web browser application of the phone to pull up each article. Figure 4 shows one of DSM’s RSS feeds. The tags that we accessed to be displayed were the title, link, and description. There were other tags we could have used to display images that are attached or other media, but the ones we chose were those that were necessary for our needs.



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<rss version="2.0" xmlns:atom="http://www.w3.org/2005/Atom" xmlns:georss="http:/
    <channel>
        <atom:link href="http://doaneline.com/search/?q=&amp;t=&amp;l=10&amp;d=
type="application/rss+xml" />
        <title>Doaneline - Your source for all Doane related news | Generated b
        <link>http://doaneline.com/search/?q=&amp;t=&amp;l=10&amp;d=&amp;dl=&am
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                    <title>Doane Confessions twitter account shut down</title>
                    <link>http://doaneline.com/news/local/article_e89d8bc8-8c41-
                        <description><![CDATA[The once controversial Doane Conf
                        </description><pubDate>Wed, 13 Mar 2013 19:55:00 -0500<


                    </item>
```

Figure 4: Doane Student Media RSS Feed

After finishing the RSS feed parser we had a working prototype for one of the DSM RSS feeds. We went back to finish our issue with the UI. We decided to go with the less complicated option and create the main menu view. This still was not quite as simple as we anticipated due to the fact that we were still trying to combine different views. Fortunately we were able to complete this task, so we are able to click on a button and pull up the list view for that RSS feed and go and look at numerous articles. That was a working RSS reader for one feed. We still had four more RSS feeds to read and display. We knew there were better ways to accomplish this than how we chose to, but for simplicity and lack of time we just duplicated the code four times for each RSS feed, linked all four buttons to their correct RSS reader and we were finished.

5 Support

Even though the application has been created the maintenance on this application is far from over. We knew that due to the time constraints of this project and the lack of a development team, this application could only be a sufficient working prototype that would meet DSM's needs for the near term, however for the distant future this application would need some reconstruction. The things that we know right now will need to be improved are the UI, efficiency of the code, and regular bug fixing.

Due to our quick learning of iOS development and Objective C, we were not able to implement the UI that DSM was hoping for. The design we had intended on, the tabbed environment, had to be changed in the middle of the project to be able to complete the project and get out a working application. For someone with more iOS development experience this could be a simple task, they could push out an updated version within a few months and the application could be used by DSM longer than anticipated. Although with ever changing applications on the market and DSM professors with access to those types of media, this may not be able to meet their feature needs for long as they see nicer and more attractive looking applications.

The code we ended up with was done to be able to satisfy the project and have a completed working application. This is not efficient code because we did just repeat code four times over instead of putting that into one program and letting the program decide which RSS feed needs to be accessed each time. Although this may work it is not the most efficient way to go about getting this application to work.

As with any application, regardless of what the application is written for, it will always need maintaining. There will always be bugs in code to fix or ways to make things more efficient and work better to allow for more usage. These will have to be maintained by either someone with DSM or another student within the Information Science and Technology (IST) department. These are things that DSM will have to decide with how to continue the application, as they need it.

Although the option of another student taking on the project and maintaining the application is a great idea, it may not fulfill the needs for long nor will the students always have the skills to continue the project. In all reality it will most likely get taken over by a professional company and maintained by a development team who does these types of applications for a living. Even with the knowledge of the application only lasting for a year or two, it was a good learning experience for everyone involved. It gave IST a project to learn from and a cheap alternative for DSM to get the application that they want, so although there are numerous things that need to be done to keep this application continuing we have accomplished the original goal for now.

References

[1] Lee, Wei-Meng. 2012. *Beginning iOS 5 Application Development*. Indianapolis: John Wiely & Sons, Inc.

[2] DiVoe, Jiva. 2011. *Objective-C*. Indianapolis: John Wiely & Sons, Inc.