WWU Department of Computer Science

BMT Roku App

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ABSTRACT

The purpose of this project was to provide Blue Mountain Television with their own Roku app that would allow them to expand the reach of their videos & livestreams.

With the help of Roku's developer documentation, as well as the Roku development community, i was able to design & build a basic app that would allow BMT full control over uploads and future updates.

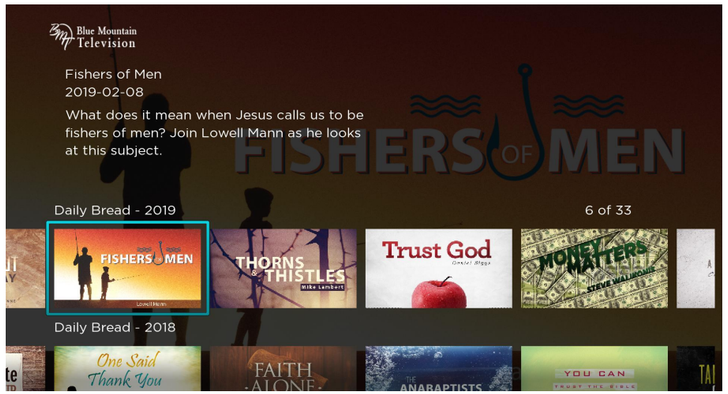
INTRODUCTION

My customer was Blue Mountain Television, a viewer-supported television station based in Walla Walla, Washington. Originally they wanted to update their existing Roku app to have a more fluid UI, however this was not possible because (for various reasons) their previous developer could not transfer the source code back to them.

This was when i decided I would build them an app from scratch that they could retain full access to via their own Github repository. My goal was to build an app that would accurately display all their video data, and allow for fluid control and viewing of videos & live streams via the Roku remote controls. This would require basic knowledge of the custom Roku scripting language (Brightscript), as well as the Roku UI framework SceneGraph.

DATA AND ANALYSIS

The BMT Roku app was designed to be simple and intuitive to the user. Each row represents a series, and each element in a row represents an episode that can be selected and streamed. Episode descriptions are visible on the homescreen, as well as the description page that is visible directly before a video is played. 200 x 200 thumbnail images are displayed for each element, and a similar image is available in the background while hovering over the episode to provide an intelligent, integrative feel.



On the back end, the videos themselves are hosted on Vimeo.com, and all images are hosted on a private server owned by BMT.

Access to all video data (vimeo links, images, release-dates, descriptions, episode & series titles, category-data, etc.) is held in a JSON file that is also hosted on BMT's private server. BMT can directly upload and modify content on their app by altering the JSON data. This allows them to have a healthy "host" relationship with their app, without requiring much knowledge of the source code.

CHALLENGES

The challenge that proved to be the most impactful for the project as a whole was the lack of contact with BMT's previous contract developer. Much time was spent waiting for him to respond to our request for the source code, and in the end he could not produce it.

Another challenge was faulty JSON data. There was some problem that was breaking the entire program, and i refactored entire sections of my code to try and improve program efficiency, thinking that it was an issue pertaining to lack of processing power. It turns out that the cause was merely some typos in the JSON. This was difficult to discover because the JSON file was around 5,000 lines long.

Another challenge was lack of testing. Since i did not set up the Roku testing framework at the beginning of the project, it was hard to determine why things would go wrong when they did. I will not make that mistake again.

SUMMARY

I am still working with BMT to finish up some tests of the app to ensure it's ready for launch, and i will continue to work with them until the app is fully launched. In retrospect, it would have been nice to be able to try and implement some of the upgrades i had in mind (modularized series elements, a series description page, etc.), but i ran out of time. In my opinion, the most satisfying aspect of this project was to be able to give BMT an app that they have full access to, that they can truly call their own.

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