

Banner Mobile

An application created by Celine Fucci
for COM 419
with



App Design Document
Created: March 2, 2018
Last Updated: May 2, 2018

I. Executive Summary

Banner Mobile is an iOS application that allows users to easily view information for a subset of classes in the Communication and Humanities Department for the upcoming Fall 2018 semester. One of its main goals is to simplify the information found in the current Banner Web system. It's being built with the Ionic Framework and Google Firebase.

II. App Overview/Technology Highlights

A. Ionic Framework ([Ionic Documentation](#))

Ionic is a free and open source mobile SDK. It uses Angular, HTML5, JavaScript, and TypeScript so if you already know how to build websites using these tools, you know how to build mobile apps with Ionic.

B. Google Firebase ([Firebase Documentation](#))

Firebase is a Backend-as-a-Service — BaaS and a real-time database. Firebase was acquired by Google in 2014. Firebase allows you to store and sync data with their NoSQL cloud database. Data is synced across all clients in real-time, and remains available when your app goes offline. Additionally, when you connect your app to Firebase, you're not connecting through normal HTTP. You're connecting through a WebSocket. WebSockets are much, much faster than HTTP.

III. Expectations

- Create an Ionic application that pulls data from Google Firebase
- Implement a simple, modern, and clean user interface
- Build a functioning filter system that can efficiently display data

IV. Production Details

A. Current State

Development of Banner Mobile has concluded. Currently, it has a fully functional filter/query system, a completed user interface, and a backend database which is pulling data from Google Firebase.

B. Development Team

I am the only member responsible for the development of Banner Mobile.

C. Budget

After researching salaries for software engineers working with web and database development, I would pay myself around \$60,000 for this project. Even though this is just a short-term school project, implementing it on a larger scale with the current Banner system would be a complex task.

D. Schedule

Task	Tools	Progress
Configure database	Google Firebase	Completed
User interface mockups (not essential/depends on time constraints)	Sketch, Framer, or Origami Studio	Rough Sketches Completed
User interface implementation	HTML, CSS, Ionic UI components	Completed
Filter/search system	TypeScript, Ionic	Completed

V. Implementation

This section contains some references I plan on using to implement the features described above:

- Database
- User interface mockups
 - [Sketch](#)
 - [Framer](#)
 - [Origami](#)
- User interface implementation
 - [Ionic UI Components](#)
- Filter/search system
 - [Ionic List Filtering](#)
 - [Filter Firebase Data Using a Search Bar](#)
 - [Creating a Content Filter With Ionic](#)

VI. Competition

A. Customized Systems

Many universities across the United States use a customized online system to allow their students to register for classes. These systems are similar to SUNY Poly's Banner Web system. Due to these systems being unique to the university, I could not find much information on them without having to log in to the system.

B. Class Management Systems

1. Blackboard

Blackboard “is a virtual learning environment and course management system developed by Blackboard Inc.” It is a web-based server software which features course management, customizable open architecture, and scalable design.

2. Canvas

Canvas “is a comprehensive cloud-native software package.” Like Blackboard, it is a learning management system.

3. Moodle

“Moodle is a free and open-source learning management system written in PHP and distributed under the GNU General Public License. Moodle is used for blended learning, distance education, flipped classroom and other e-learning projects in schools, universities, workplaces and other sectors.”

4. D2L

“D2L, often referred to as Desire2Learn, is a global cloud software company.” It is the developer of the Brightspace learning management system which is a cloud-based software used by schools, higher education, and businesses for online and blended classroom learning.”

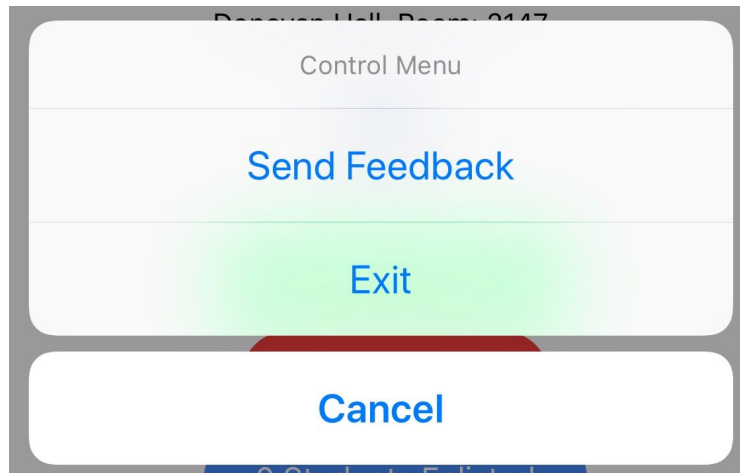
5. Sakai

“Sakai is a free, community source, educational software platform designed to support teaching, research and collaboration.” Like the ones above, it is classified as a learning management system.

My goal with Banner Mobile is to create a simpler way for students to view classes. Therefore, it is considered a subset of a class registration system, not a class management system. It is not supposed to be a Blackboard competitor to manage a student’s classes and assignments. Rather, it is a simple app that allows students to view course information quickly and easily.

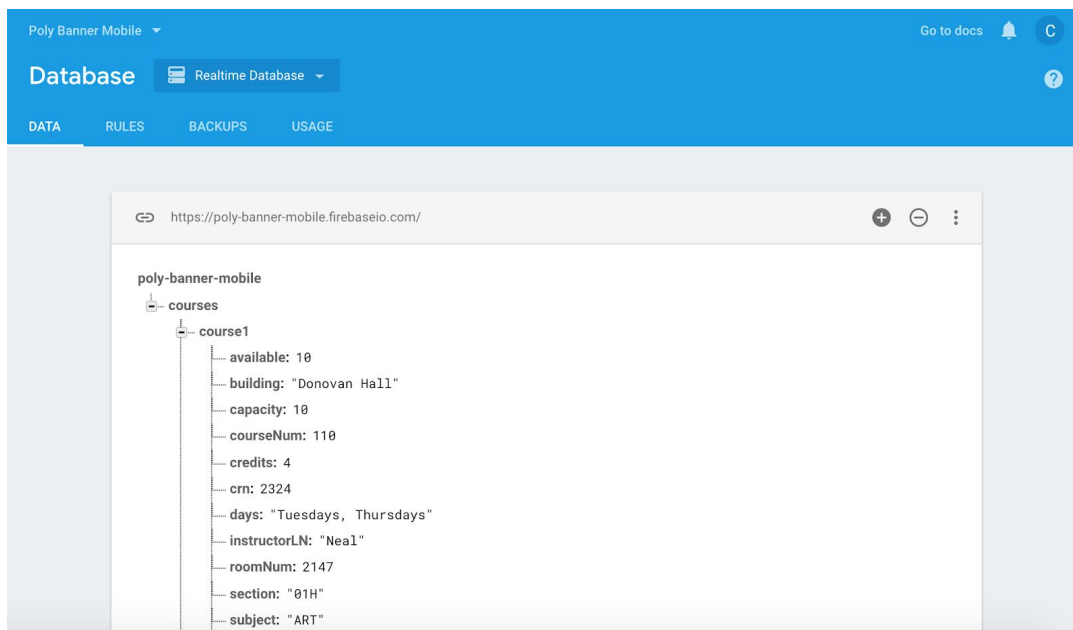
VII. Quality Assurance

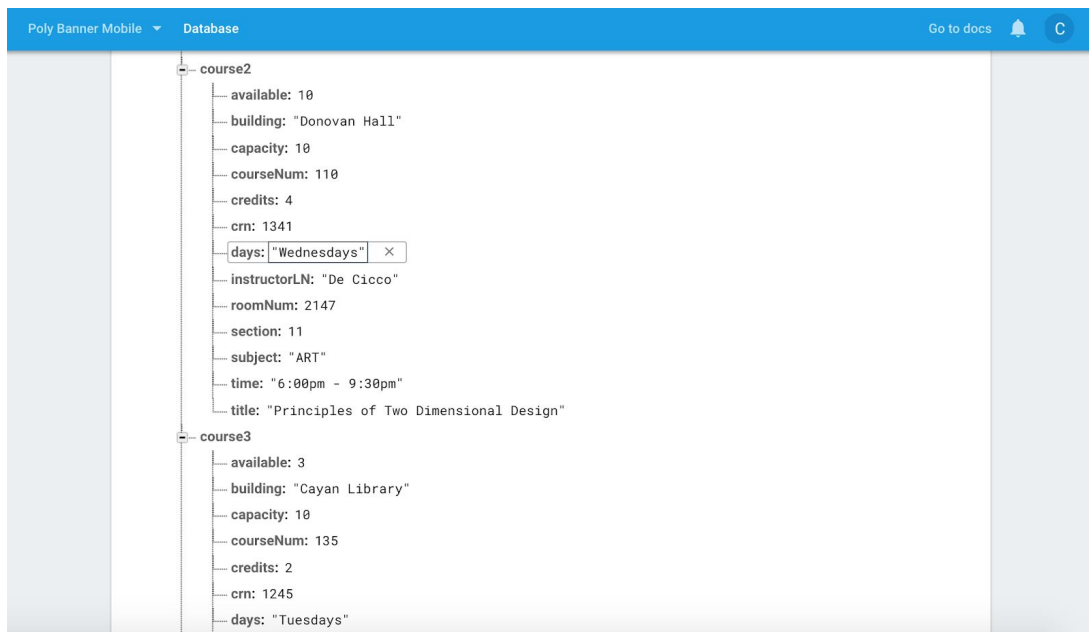
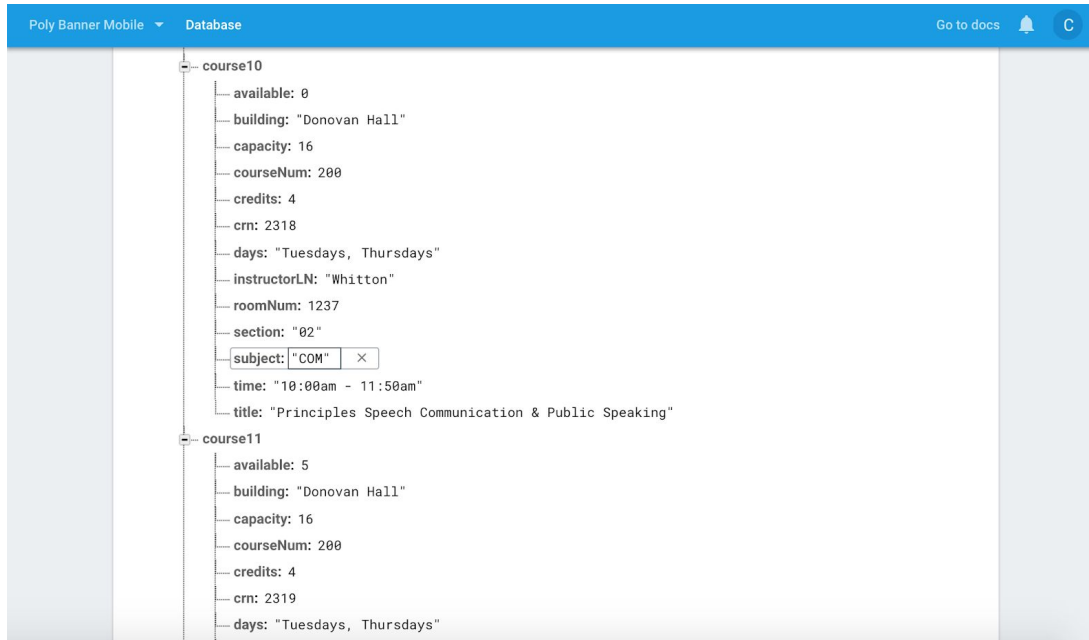
The following link allows individuals to report bugs and problems with Banner Mobile: [Bug Report](#). You can also report bugs in the Ionic View app. To do so, shake the device while you have the app open. This will bring up the Control Menu. Tap “Send Feedback,” fill out your response, then tap “Send.”



VIII. Database Configuration

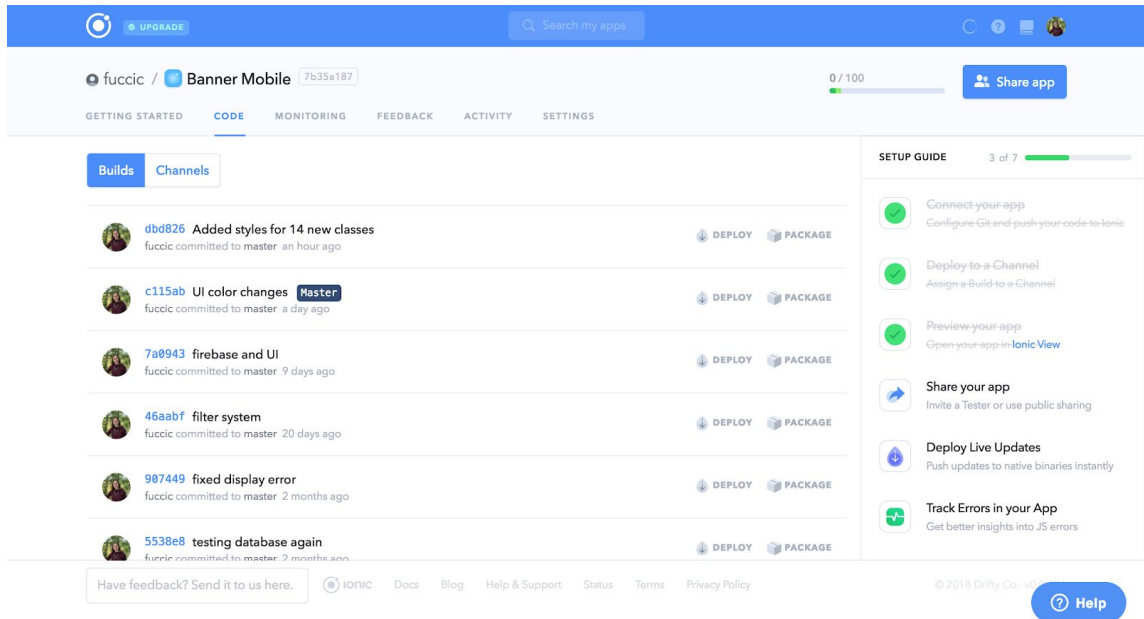
Banner Mobile is successfully using Google Firebase to store its data. Since access to the database can only be granted with my account credentials, here are some screenshots of the database.





IX. Code Repository

The code for Banner Mobile can be found at this link: [GitLab Repository](#). I also used the Ionic Dashboard to store my code. This is a live web dashboard from the Ionic team that lets developers view their code builds, view feedback submitted by users, and much more. A screenshot is pictured below.



X. YouTube Trailer

The YouTube Trailer for Banner Mobile was made with iMovie. You can view it at the following link: [YouTube Trailer](#).

XI. Banner Web: Current System

The current Banner Web system is out of date and hard to navigate. It does not let students search for classes easily or quickly look up information. Furthermore, the web system layout does not adapt well to mobile devices. Students are always using their phones. Therefore, this is a much needed feature.

A. Screenshots

In the picture below, information is cluttered and cannot be found easily.

CRN	Subj	Crs	Sec	Title	CR	CAP	ENL	AVL	Building	Room	Time	Days	Instructor	Notes
2324	ART	110	01H	Prin of Two Dimensional Desig	4	20	0	20	DONOVN	2147	1400-1550	TR	Neal	Gen Ed: The Arts.
1341	ART	110	11	Prin of Two Dimensional Desig	4	20	0	20	DONOVN	2147	1800-2130	W	De Cicco	GenEd: The Arts.
1245	ART	135	11	Drawing	2	20	0	20	CAYNLB	L200	1800-1950	T	Medici	GenEd: The Arts.
1663	ART	140	11	Painting - Technique & Style	4	16	0	16	CAYNLB	L200	1800-2130	R	Comfort	Gen Ed: The Arts.
1346	CHI	101	11	Elementary Chinese	4	20	0	20	KUNSHL	C202	1600-1750	MW	Che	GenEd: Foreign Language
1251	COM	106	01	Intro to Digital Media&Design	4	50	0	50	KUNSHL	A135	1200-1350	MW	Schneider	Restricted to students in the CID and IMGD majors.
1342	COM	112	11H	Digital Photography & Imaging	4	22	0	22	DONOVN	1229	1800-2130	M	Franchell	GenEd: The Arts
1343	COM	112	12H	Digital Photography & Imaging	4	22	0	22	DONOVN	1229	1800-2130	R	Franchell	GenEd: The Arts
2317	COM	200	01	Prin. Speech Comm Public Spea	4	20	0	20	DONOVN		1200-1350	MW	Bulson	FORMERLY COM 300. CANNOT RECEIVE CREDIT FOR BOTH COM 300 AND COM 200.
2318	COM	200	02	Prin. Speech Comm Public Spea	4	20	0	20	DONOVN	1237	1000-1150	TR	Whitton	FORMERLY COM 300. CANNOT RECEIVE CREDIT FOR BOTH COM 300 AND COM 200.
2319	COM	200	11	Prin. Speech Comm Public Spea	4	20	0	20	DONOVN	1109	1600-1750	TR	Slatton	FORMERLY COM 300. CANNOT RECEIVE CREDIT FOR BOTH COM 300 AND COM 200.
1432	COM	219	01H	Intro Video Game Dsgn &Cultur	4	22	0	22	DONOVN	2147	0900-1050	MW	Yucel	
2443	COM	219	11	Intro Video Game Dsgn &Cultur	4	15	0	15	DONOVN	2147	1600-1750	TR	Piejko	

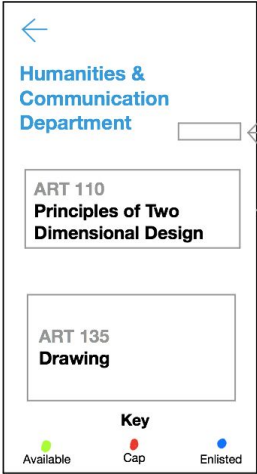
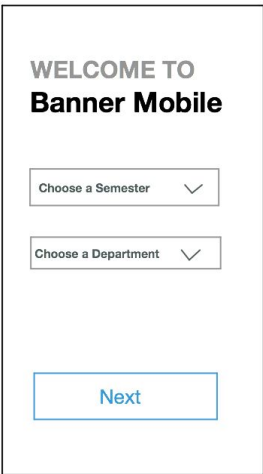
XII. User Interface Plans

A. Mockups

Below are some mockup drawings of what I envision the interface for Banner Mobile to look like.

B. Ideas

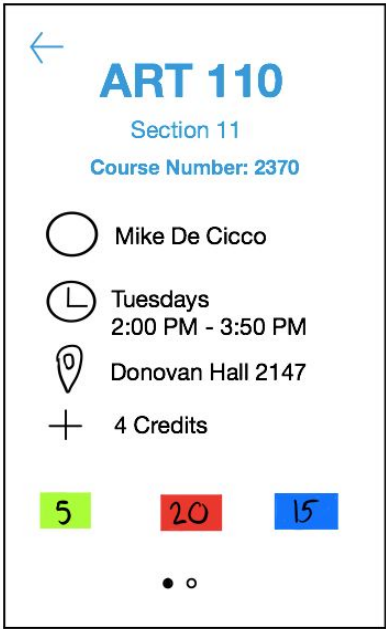
For the UI implementation, I plan to use the Ionic UI Components ([Ionic UI](#)) and Ionicons ([Ionicons](#)). The Ionic UI Components list contains several clean, simple components that will allow Banner Mobile to incorporate a modern design. Meanwhile, Ionicons is a set of pre-made icons that can easily be added to an Ionic application.



Filter between ART, COM, etc.

Background picture of class

Cards that list each class

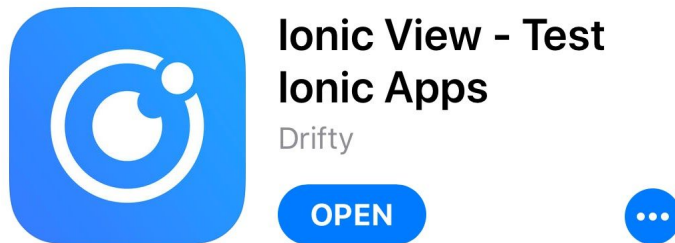


Swipe left to view more sections

Picture of Professor

XIII. Installation Instructions

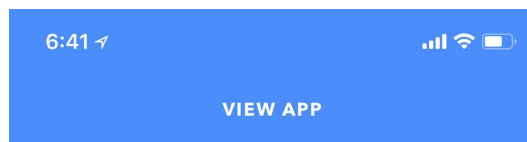
1. On your phone, go to the Apple App Store.
2. Navigate to the search tab and search for an app called “Ionic View.”



3. Download the app.
4. When opening the app, there will be three tabs at the bottom. Tap on the icon that looks like an eye.



5. Enter the code '7b35a187' and tap the “View App” button. The app will then load up.



Enter Code

Enter a public AppID or Invite Code emailed to you.

7b35a187



Note: The app is being built for iOS but it can still be viewed on Android. To install the app on Android, navigate to the Google Play Store and follow the same instructions above. Please contact me at fuccic@sunyit.edu if any problems occur.