

UC Resource Application
For The University of Cincinnati
Department of Administration & Finance IT

Kevin Hall & Del Shawn Kirksey

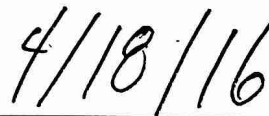
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In Partial Fulfillment of the Requirements for
The Degree of Bachelor of Science
In Information Technology

University of Cincinnati
College of Education, Criminal Justice, and Human Services

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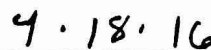
Kevin Hall



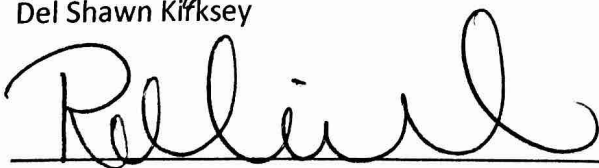
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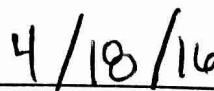
Del Shawn Kirksey



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Faculty Advisor



Date

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Abstract

User experience issues are in the top ten reasons that mobile applications fail. The importance of UI design is common knowledge in the mobile application development community yet many applications are still being published with the UI as an afterthought. The previous UC Mobile app is a testament to that and we decided that it was time for a change. With a newly redesigned user interface, well defined personalization options, and quickly accessible key functions, all is now possible with the new UC Mobile app. When recreating the UC Mobile app we had two agendas in mind: keep it user centric and make it useful. Our goal is to provide the UC students, faculty, and staff with an application that harmonizes the many tools spread across UC's infrastructure in a single functional environment.

Introduction

The University of Cincinnati (UC) is in dire need of a robust mobile application. In theory, the current solution is great; it provides students with a majority of UC's current online resources. Unfortunately, the presentation of these resources is far below subpar for mobile devices deeming them useless to anyone using the application. According to a Google Marketing Ads study, 48% of users feel frustrated and annoyed when on websites that are poorly optimized for mobile (Fisch, 2012). The goal of our project is to re-create UC's current mobile solution and provide all users with a full-featured, responsive, and functional mobile experience.

This project is designed to combat the many user experience issues that users of the current UC Mobile application face. We decided to develop using the Xamarin Studio environment to allow development for all iOS devices. We utilized Bohemian Coding's Sketch application to design the look and feel of the application. We partnered with the UC App Lab for directional support with design and development.

Problems

UC's current mobile application functions as a gateway to many different resources. The application itself is simply a navigation drawer full of links to external applications and websites. Many of the external websites are not optimized for mobile devices and this leads to a diminished user experience. The current layout of the application includes a number of buttons to different pages with no hierarchy or order of importance. This complicates the view and makes it tough for the user to find key functions.

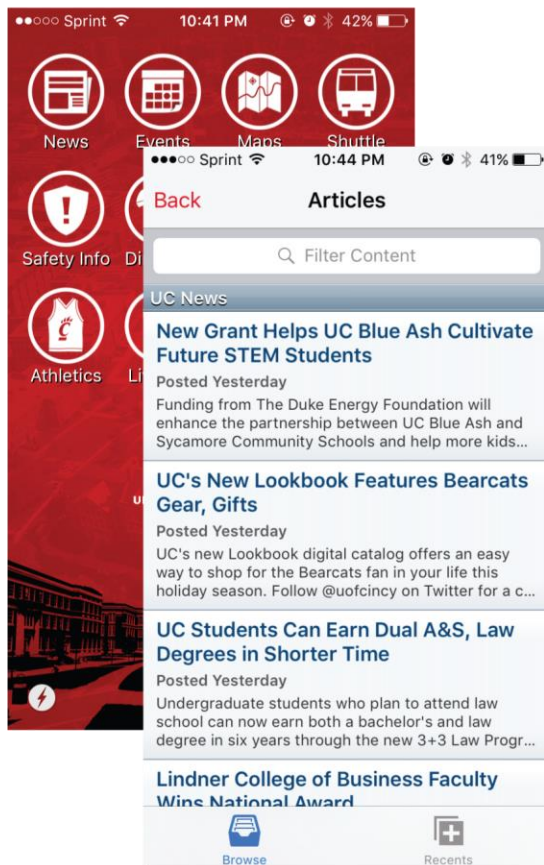
After meeting with Josette, the Assistant Director at the UC App Lab, and Mike, a developer in the App Lab, we discovered that the university does not own the current application. The current framework is built and supported by Blackboard, which requires us to start a completely new application from scratch.

The 8-month time constraint we had limited the amount of development we can do on the application. Also, due to the low turnover rate of the current application, it will be tough to get users to try the application for a second time once the new version is deployed. First impressions determine whether or not an application will stay on a users' device. Since many students have already tried to use the current application, and quite possibly deleted it, conversion to the new application will be a great challenge.

Solution

If you look at other university resource application interfaces you'll notice a pattern. They are all similar, possibly developed by Blackboard as well, and have little to no visual-appeal to them. We wanted to take a main feature that is found amongst popular social media sites and implement it in our application. A dedicated feed catered to the users interest is our solution to the current boring interface.

We came to an agreement with the UC App Lab about the direction we want to go with the application. They realized this is a huge project, and a proper application for the university could not be completed in the time frame given. So we compromised to build of the shell of the application and include some of the main components we initially wanted to implement.



◀ Figure 1:

Current UC Mobile Home Screen and News Page

Figure 2: ▶

New UC Mobile Home Screen and Content



User Profile

There are two potential users for this environment: the end user and the system administrator. The system administrator has master permissions, and the end user can only be able to access the basic functions.

End Users

The end users have to use an iOS device to use the application. The iOS API we are using allow 90% of iOS users to access the application. Users can personalize their experience by selecting from a number of different available categories to be displayed on their own Home screen.

System Administrator

The system administrator is the UC App lab and they are responsible for keeping the software and systems up to date. They will have to keep up with the speed of technology and implement updates when available. The system administrator is also in charge of backing up the system and the data within it.

Software and Interface Experience

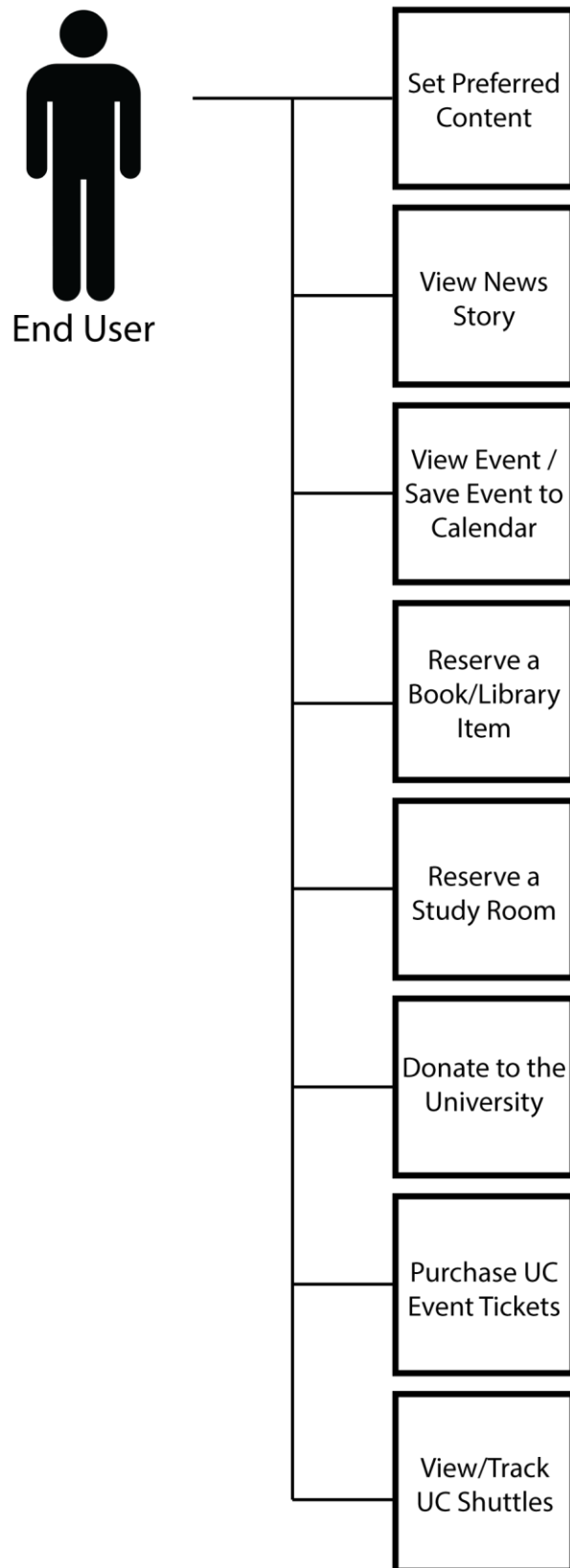
Many (to all) users will have prior experience navigating mobile applications. The user may also have knowledge of UC and/or the campus. The interface employs a minimal and simplistic feel, coinciding with the most common and familiar gestures featured in the most popular mobile applications. No software prerequisites are required for the use of this application.

Experience with Similar Applications

User has experience with other iOS applications. No expertise required for navigation or functionality.

Frequency of Use

We anticipate frequent, almost daily, use of the new UC Resource Application. Current student users will check the social and event based aspects of application daily. A small weather widget displaying the current weather on and around campus will be useful to commuting student users. Utilities of the application will primarily be useful while the user is on campus or needs a campus service such as catching the shuttle or reserving a study room. The new CatsTix portal will be useful to all users planning to attend sporting events at the University of Cincinnati. The increased feature set, combined with the simple yet familiar user experience will reach a broad audience, ranging from prospective students to university alumni.



◀ Figure 3:
Use Case Diagram

Timeline

Task Category	Start	End	Duration	% Complete
Establish a Problem	9/10/2015	9/11/15	1	100%
Contact Robert Brown	9/16/11	9/21/11	5	100%
Get Code From Original Project	9/10/2015	9/10/15	0	0%
Finalize Project Idea	9/11/15	9/12/15	1	100%
Determine the Environment	9/11/15	9/16/15	5	100%
Research Previous Model	9/15/15	9/25/15	10	100%
Draw Mock ups	9/15/15	10/25/15	40	100%
Get Access to Databases	9/15/2015	12/24/15	100	0%
Determine Requirements for Project	9/18/15	9/28/15	10	100%
Gantt Chart	9/20/2015	9/28/15	8	100%
Team Contract	10/1/2015	10/5/15	4	100%
Project Abstract	10/5/2015	10/12/15	7	100%
UI Prototype	10/6/2015	10/31/15	25	95%
User Profile	10/8/2015	10/12/15	4	100%
Use Case Diagram	10/15/2015	10/25/15	10	100%
Conduct Halfway Point Testing	11/10/2015	11/23/15	13	100%
Implement POS	1/5/2016	2/24/16	50	15%
Implement Scheduling Capabilities	1/20/2016	3/10/16	50	10%
Document Intergration With UC	2/15/2016	3/6/16	20	0%
Document Risk and Measures	2/25/2016	3/26/16	30	0%
Prepare Guidelines for UC App	3/10/2016	3/30/16	20	0%
Conduct Final Testing	3/15/2016	3/28/16	13	0%
Finalize Assessments	4/5/2016	4/15/16	10	0%
Refine Planning Guidelines	4/6/2016	4/13/16	7	0%
Prepare for Technical Demo	4/15/2016	4/20/16	5	0%
Obtain All Materials for Demo	4/20/2016	4/22/16	2	0%
Demonstration	4/25/2016	4/26/2016	1	0%

Figure 4

Gantt Chart



Figure 5

Budget

The development of a new UC Resource application required research, frame working, designing, and development. Estimated costs for each are illustrated in Figure 4 below.

The cost of research can be evaluated at the current hourly rate for application designers; the current national average is \$62K per year or \$31 dollars per hour. Bohemian Coding's Sketch application costs \$99 per license for all users. As members of the university we were approved for a discounted rate of \$49 per license, the rate we used for our budgeting evaluation due to the likelihood that a universities application development team will be internal. The cost of development starts with purchasing the Xamarin Studio software priced at an estimated \$200 per developer for the time period needed for a team of our size.

Item	Quantity	Price	Total
Bohemian Coding Sketch	2	\$49	\$98
Xamarin Studio	2	\$200	\$400
Entry-level designers/developers (est. 120 hours)	2	\$31 x 120	\$7,440
Azure Cloud Database	1	\$15 x 8	\$120
Total			\$8,058

Figure 6

Future Goals

We believe the quality of the application speaks for itself. We would love to hand it off to UCIT and let them complete what we started. But additionally, we think this could be useful to other institutions. If most universities use the Blackboard framework for their apps, and our solution is clearly better and more user friendly, why wouldn't other Universities adopt this application. This UI revamp has a lot of potential, we just need to see how far we can go with it.

Conclusion

The hottest college in America deserves the hottest application in America. The current application in use is based on the same cookie-cutter interface that every other university uses which is neither unique nor functional. Our goal is to develop an application as unique as the University of Cincinnati itself. Creating a *one-stop shop* for UC 's prospective students, current students, professors, and parents is long overdue. Not only will these changes attract more users to the application, but it will also improve the experience for the students.

References

Fisch, M. (2012). *Mobile Friendly Sites Turn Visitors Into Customers*. Head of Marketing. Google Analytics.

[http:// www.payscale.com/research/US/Job=Software_Developer/Salary/b40d08f6/Entry-Level](http://www.payscale.com/research/US/Job=Software_Developer/Salary/b40d08f6/Entry-Level)

Appendix

UC Mobile

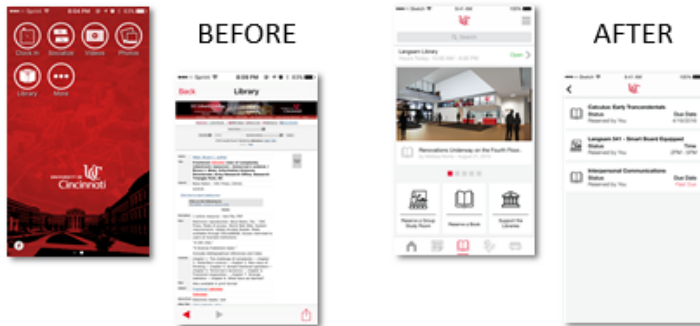
A re-creation of UC's current mobile app. For Students. By Students.

by Kevin Hall & Del Shawn Kirksey

Technical Advisor: Professor Robin Carew

ABSTRACT

User experience issues are in the top ten reasons that mobile applications fail. The current UC Mobile app is featureless and unpleasant to use due to its terrible user interface. With a newly redesigned user interface, well defined personalization options, and quickly accessible key functions, all is now possible with the new UC Mobile app.



PROBLEM

The University of Cincinnati's current mobile application is a feature-less navigation drawer full of links to external applications and websites. The external websites are not optimized for mobile devices leading to a diminished user experience.

SOLUTION

An aesthetically pleasing, feature-rich, user experience driven application dedicated to the University of Cincinnati. Essential day-to-day functions will be a few taps away for all students, faculty and staff to use.

TECHNICAL ELEMENTS



College of Education Criminal
Justice & Human Services:
School of Information
Technology

APP DIAGRAM



CONCLUSION

The Hottest College in America deserves the hottest application in America. The current application in use is based the same cookie-cutter interface that every other university uses which is neither unique nor functional. Our application is as unique as the University of Cincinnati itself, creating a one-stop shop for UC 's students, faculty and staff. Not only will these changes attract more users to the application, but it will also improve the experience for all.