

Cancel My Class
Blackboard Building Block

By

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Jacob Morgan
Brent Humphrey

Submitted to
The Faculty of the Department of Information Technology
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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Table of Contents

Section

Table of Contents	iii - iv
Table of Figures.....	v
Acknowledgements.....	vi
Abstract.....	1
Introduction.....	2
Project Description.....	2 - 3
Problem.....	3
Solution.....	4
Blackboard Survey Results.....	4 - 5
Deliverables.....	6
Technologies.....	6 - 7
User Profile.....	7 - 9
1. Potential Users.....	7
2. Software and Interface Experience.....	7
3. Experience with Similar Applications.....	8
4. Task Experience.....	8
5. Frequency of Use.....	9
6. Key Interface Design Requirements that the Profile Suggest.....	9
7. Use Case Diagram.....	9
Technical Elements.....	10
Difficulties.....	10

Testing.....	10
Budget.....	11
Timeline.....	11
Conclusion.....	12
References.....	13

Table of Figures

Figure 1: Blackboard Multiple Choice Results.....	5
Figure 2: Blackboard Extended Response Results.....	6
Figure 3: Cancel My Class Module.....	7
Figure 4: Cancellation Text Message (SMS) and E-mail.....	7
Figure 5: Blackboard Learn Calendar – Class Cancellation Calendar Event.....	8
Figure 6: Blackboard Development System.....	8
Figure 7: Use Case Diagram.....	9
Figure 8: Budget.....	11
Figure 9: Gantt Chart.....	11

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Abstract

Cancel My Class will revolutionize the way a class is canceled. *Cancel My Class* is a Blackboard Building Block that allows a professor to cancel a class from within Blackboard, automatically notifying every student currently enrolled in that class. *Cancel My Class* provides real time communication between professors and their students utilizing technologies including Blackboard, E-mail, and Text Messaging (SMS). *Cancel My Class* also utilizes Blackboard Learn's new calendar feature by instantly updating a user's calendar when a class is cancelled allowing students to immediately account for the cancellation in their busy schedules.

Introduction

Have you ever woke up early in the morning for a 9 o'clock class, scrapped ice off of your car window, and drove an hour to class only to find a little note on the door saying that class is canceled? Maybe your professor sent an email an hour before class had started, but you were already on your way to class and didn't see it. Or, maybe they simply posted an announcement on Blackboard which you wouldn't have noticed unless you physical checked Blackboard.

Cancel My Class will prevent this from ever happening again. Over the past few years, technology has come a long way in increasing communication between our peers and allowing people to access it from relatively anywhere. Cancel My Class will tap into this technology to create an application that will increase communication between professors and their students as well as save them time when they need it the most.

Project Description

There are a few different components to this project which all share the same goal, saving professors and students valuable time in their day. The main feature of Cancel My Class is the ability for a professor to cancel a class. The professor will login into Blackboard and with the push of a button each student will be notified immediately via an e-mail and text message (SMS).

Another feature is all student's calendars will be populated with all class cancellations when one of their classes has been cancelled by their professor. This allows for students to visually plan out their schedules while accommodating any class cancellations that may occur. An extra feature added onto "Cancel My Class" will be the ability for professors to simply send a

generic notification to students. This can be a brief message or reminder. They will have the option to send it as an e-mail, a text message, or both.

Problem

The current issue is the convenience of communication between the faculty and their students when a professor needs to cancel a class. Postings in Blackboard and e-mails often go unnoticed, and require a labored effort from the professor. Cancel My Class fixes this issue with a simple interface and real time notifications.

Every morning, at the University of Cincinnati Clermont College, around 5-10 professors call in to notify Student Faculty Assistants that they want to cancel their class or classes for the day. The faculty member then places a note on the door of the professor's classroom about the cancellation. This obviously leads to students showing up to class and having to turn back around and head home. This problem was noticed first hand by two different team members while working for the college as Student Faculty Assistants. Throughout the day, several more professors call to cancel their classes. Most of these professors would not email their students and simply count on the note to notify them of the cancellation. This could be due to the fact that they were driving and were unable to construct an email or they simply didn't have time to make a Blackboard announcement. Even if these professors had the time to construct an email or announcement, there is still a good chance that some students still would not see the email or announcement, especially for morning classes. Cancel my class is designed to stop this from happening. 5 to 10 professors, plus a few more throughout the day, may not sound like a lot, but let's say there are 30 students in each class. That means that over 300 students could show up to a canceled class per day at UC Clermont College.

Solution

Cancel My Class is a Blackboard Building Block that will allow for a professor to quickly cancel a class and notify all of their students immediately. Cancel My Class is a user friendly application designed with Professor’s and Student’s needs in mind.

With the combination of a familiar environment and interface within Blackboard, Cancel My Class will save users time in their daily routine. With building block inside of Blackboard, students and professors will be able to take full advantage of Cancel My Class.

Blackboard Building Block: The Blackboard Building Block will live within Blackboard. It will be a tool that professors can use to interact with their students. Cancel My Class will manipulate the calendar within Blackboard.

Blackboard Survey Results

This survey was conducted to seek feedback on the proposed Cancel My Class applications, as well as input on what additional features to add to the project that Blackboard and/or Blackboard Mobile are currently lacking.

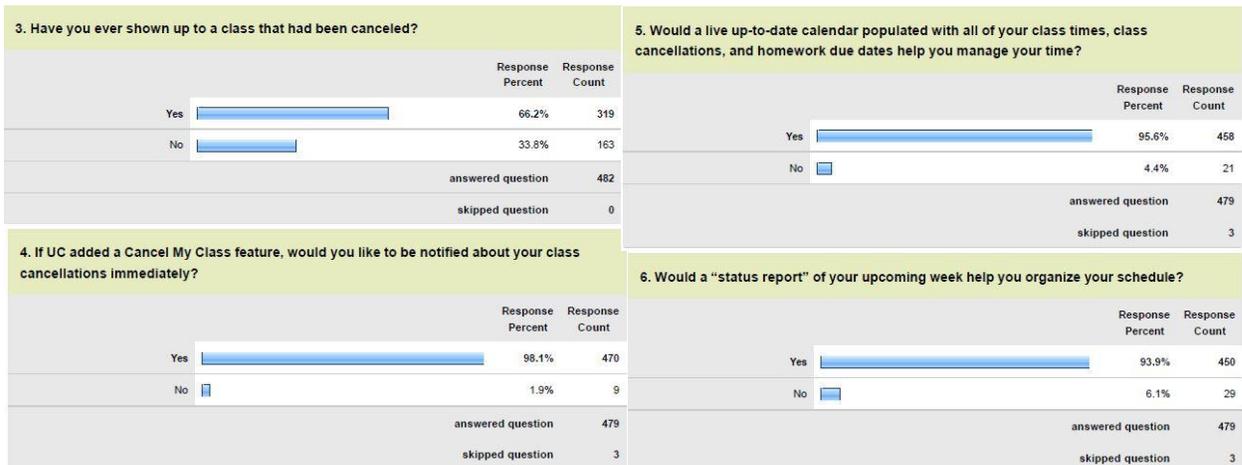


Figure 1: Blackboard Multiple Choice Results

319 out of 482 students said that they have shown up to a class that had been canceled. That is nearly 67% of students who took the survey in those two weeks. If these results were generalized to the entire population of UC, then nearly 27,000 students have shown up to a canceled class.

The survey asked if UC had a “Cancel My Class” feature, if they would they like to be notified about their class cancellations immediately. An amazing 98% of students all answered yes (Roberts). The survey also asked if a live-up-to-date calendar populated with all of their class times and class cancelations would help them manage their time. Nearly 96% of students voted yes (Roberts). Another question the survey asked was if a “Status Report” of their upcoming week would help them organize their schedule. 94% of students answered yes to this (Roberts).

Finally, the survey asked for any feedback possible; including any features users felt were missing from Blackboard and/or Blackboard Mobile. This question received around 170 responses in just two short weeks and continues to increase.

Here are a few extended responses from students:

20	All of those are amazing ideas. I have downloaded i want to say three different apps just to do all of those things. That isn't even including the blackboard app.	Nov 19, 2013 10:20 AM
47	I think it is a great idea to do this. I have to commute over 30 minutes to get here and when I have arrived and realized a class is cancelled, it is extremely inconvenient.	Nov 16, 2013 12:19 PM
55	I would love a live up to date calender for each class. so that i know what to do and when.	Nov 15, 2013 11:00 AM
66	A calender that organizes class times, class cancellations, and homework due dates.	Nov 14, 2013 11:54 AM
120	Love the status report idea!	Nov 7, 2013 7:33 PM
148	The up-to-date calendar with class times, cancellations, and homework due dates is exactly what I've wanted ever since I started using blackboard on a consistent basis. This is a fantastic idea!!!	Nov 6, 2013 8:09 AM
158	Class cancellation notifications and something that shows all the blackboard assigned homework in one place would be lovely. This is a great idea. If this works I will love you guys forever.	Nov 5, 2013 4:13 PM

Figure 2: Blackboard Extended Response Results

Deliverables

The intentions of this project are to create Blackboard Building Block and an Android Mobile Application which will allow for a professor to cancel a class, professors and students to view a live calendar, and provide a status report for the week.

Deliverables for this project:

- Develop a Blackboard Building Block.
- Implement Blackboard's API.
- Develop a function allowing a professor to cancel a class.
- Develop a function to send Notifications.
- Send students e-mails and text messages.
- Populate calendar within Blackboard with cancelations.

Technologies

Cancel My Class uses a few different technologies to create the best possible experience for the users.

1. Blackboard Building Block
 - a. Blackboard Building Blocks are used for extending the integrated services of Blackboard Learn.
 - b. It is a mini application that runs within Blackboard Learn.
2. Blackboard's API (Application Programming Interface)
 - a. Authenticate users.
 - b. Retrieve and query important data related to students.
3. Java Server Pages (JSP)

- 4. E-Mail
- 5. Text Messaging (SMS)

User Profile

1. Potential Users

The users will include Professors, Students, and Faculty Assistants at the University Of Cincinnati, along with other university faculty members.

2. Software and Interface Experience

The software and interface experience will be one similar to Blackboard. Traditional professors and students will have a moderate to high level experience with this type of software and interface. The interface will be very simple allowing for technical and non-technical persons to have pleasant and productive experience.

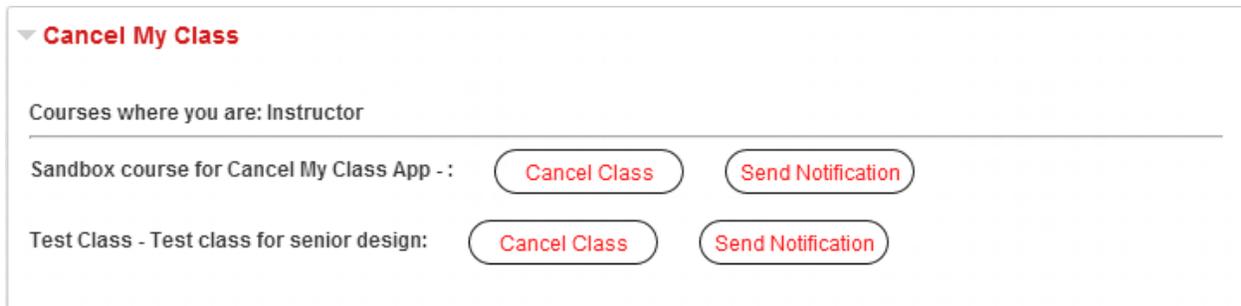


Figure 3: Blackboard Extended Response Results

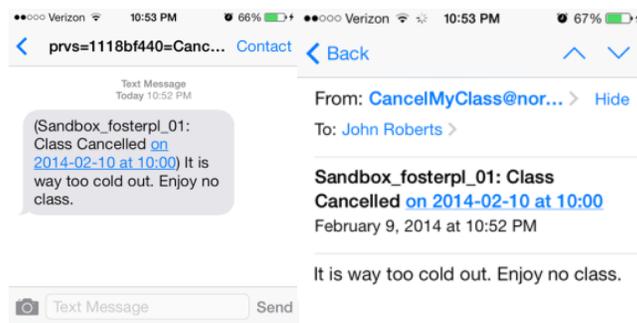


Figure 4: Cancellation Text Message (SMS) and E-mail

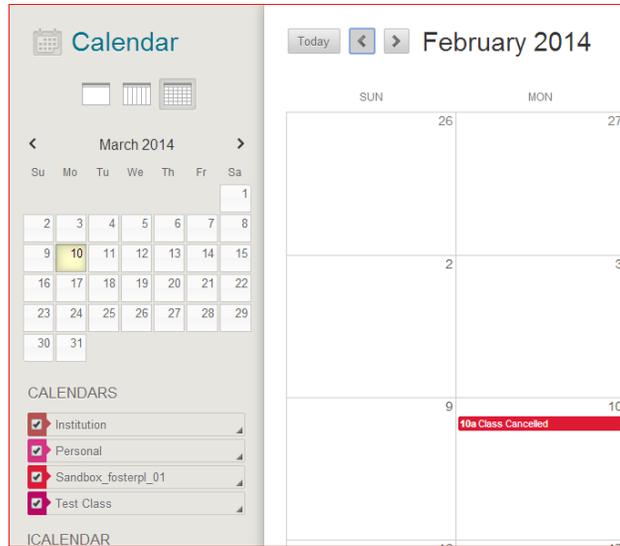


Figure 5: Blackboard Learn Calendar – Class Cancellation Calendar Event

3. Experience with Similar Applications

The application will be a Blackboard Building Block, meaning any professor familiar with the Blackboard environment will have familiarity with our Application’s environment.

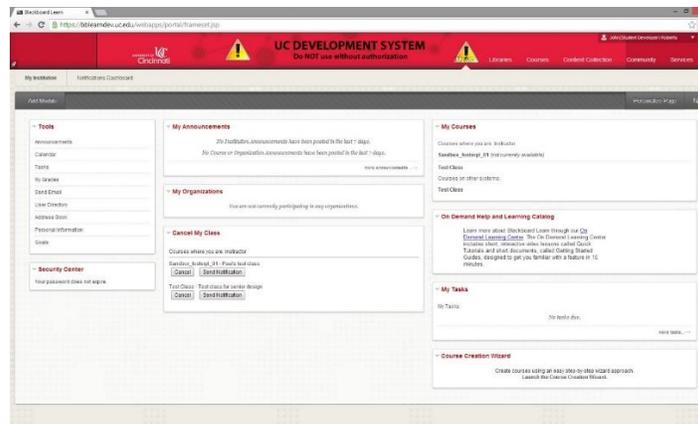


Figure 6: Blackboard Development System

4. Task Experience

The task experience will be similar to tasks completed within Blackboard. The user will login with their Blackboard credentials. Professors will cancel a class within Blackboard. Students will log in to view their classes and view their calendar.

5. Frequency of Use

This application is intended for everyday use by both faculty and students. For both parties, it will be a convenient means of communication, whether for cancelling a class or an update an assignment due date. With a simplified interface and easy to use functions, users will be more likely to utilize the tools Cancel My Class provides them.

6. Key Interface Design Requirements that the Profile Suggest

Cancel My Class must be very simple and straight to the point. The idea of the application is to save professors and students time and provide professors with immediate communication to their students. This being said, the application must be in a familiar environment and simulate like tasks within Blackboard and Blackboard mobile.

7. Use Case Diagram

Below is a Use Case Diagram for Cancel My Class:

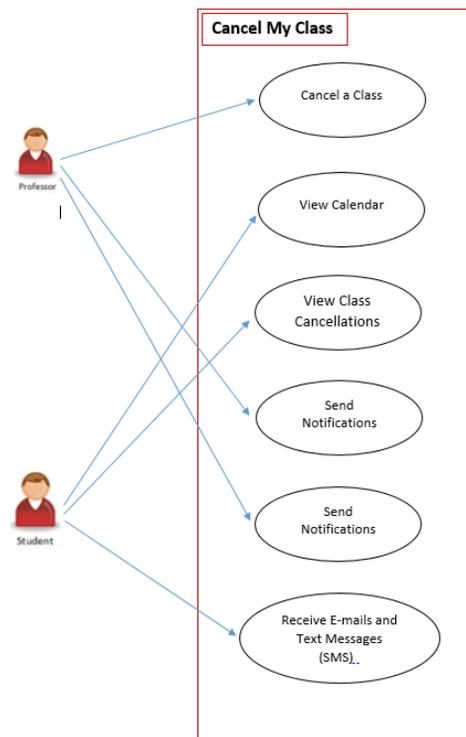


Figure 7: Use Case Diagram

Technical Elements

For this project there will be two applications created. The first will be a Blackboard Building Block using Blackboard's API. The second will be an Android application.

- Blackboard Building Block and Android Application:
 - Blackboard API
 - Eclipse
 - JSP (JavaServer Pages)
 - Blackboard Development Server
 - Apache Tomcat
 - Vagrant

Difficulties

We have encountered numerous problems throughout this process. The major problem was simply developing in an unfamiliar environment that didn't have very much documentation. The development environment was very tiresome. We were not able to debug our code considering it was a security risk to open a port for us to debug with. We had to walk through a long process to upload code for every code change we made. In early late February our accounts were disabled on the Blackboard development system. We had to wait several weeks to get a development environment set back up.

Testing

Paul Foster, UC's IT Director, is granting the team permission to work with UC's Blackboard testing server so that proper testing can take place. This server will simulate the current server UC uses for Blackboard.

Budget

Below is the proposed budget for Cancel My Class Blackboard Building Block and Android Application:

<u>Product</u>	<u>Budget For Us</u>	<u>Budget For Enterprise</u>
Blackboard API	\$0	\$0
Apache TomCat	\$0	\$0
Eclipse	\$0	\$0
Blackboard Learn	\$0	Licensing Price: Unknown
<u>Total</u>	\$0	\$0+

Figure 6: Budget

Timeline

Cancel My Class Blackboard Building Block and Android Application Senior Design Project timeline for 2013 – 2014.

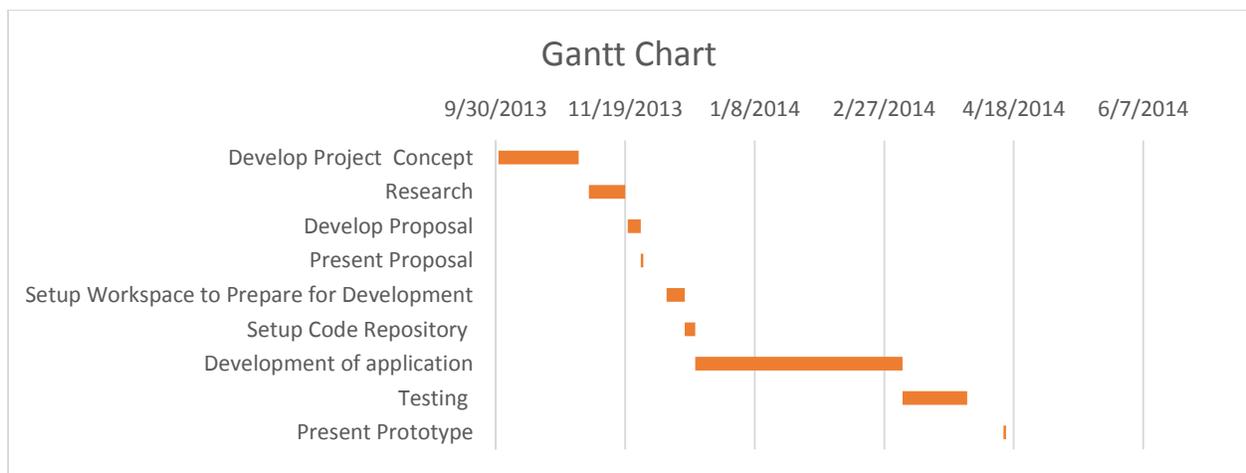


Figure 8: Gantt Chart

Conclusion

Cancel My Class will revolutionize the way a Professor cancels a class. Not only will it benefit students, but it will positively affect every professor and student at the University of Cincinnati by saving them time in their daily routine and providing them a more efficient means of communication.

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