



Undergraduate Capstone Open Source Project (UCOSP)



BlackBerry 10 PhoneGap Plugins

Stefan Schielke – Thompson Rivers University
Supervisor: Kevin O'Neil

Introduction:

UCOSP teams up with industry leaders that are working on open-source projects; want a team of sharp students to help; and are willing to train the next generation of developers. This provides students with a bridge between university and industry while working on a real-world, live, open-source project. Forty students are selected from all of Canada and then put into teams where they will spend the semester working together and creating software. This allows students to learn about open-source software development and how to work together with a team that's geographically distributed. Mobile developers want to create apps that can be coded once and then distributed to many different mobile platforms. This can be achieved by using a mobile web-based application framework such as PhoneGap. PhoneGap can be used to write embedded dynamic websites that can utilize the native phone capabilities on Android, BlackBerry, Firefox OS, iOS, Ubuntu, and Windows Phone.

Goal:

BlackBerry teamed up with UCOSP to create plugins for the PhoneGap system. This would allow BlackBerry continued coverage of apps to their platform without requiring developers to create just for the BlackBerry 10 OS. Students would be creating new, or enhancing / updating existing plugins.

Code Sprint:

Held at Mozilla in Toronto. Students were able to get together for 3 days and work directly with their mentors and the rest of their team members.

Methodology:

- Student were assigned a task from a list of available issues for the semester.
- The task had to be evaluated to determine where the bug was in a plugin and then take appropriate measures.
- In cases of non-existent plugins, the student would be responsible for creating the initial plugin. Usually, the new plugin would have limited functionality that would be enhanced at a later time.
- After student completion, the code would be uploaded to Git where the code would go into code-review for evaluation.

Tools Used in Project:

- BlackBerry Z10
- Momentics IDE
- Notepad++
- Git
- GitHub

Implementation:

- C++ libraries (standard, Cascades, QtCore)
- JavaScript, HTML5, CSS3
- Distributed development using Agile methodology

Challenges:

- Communication between different programming languages.
- Using a device and language that I was unfamiliar with.

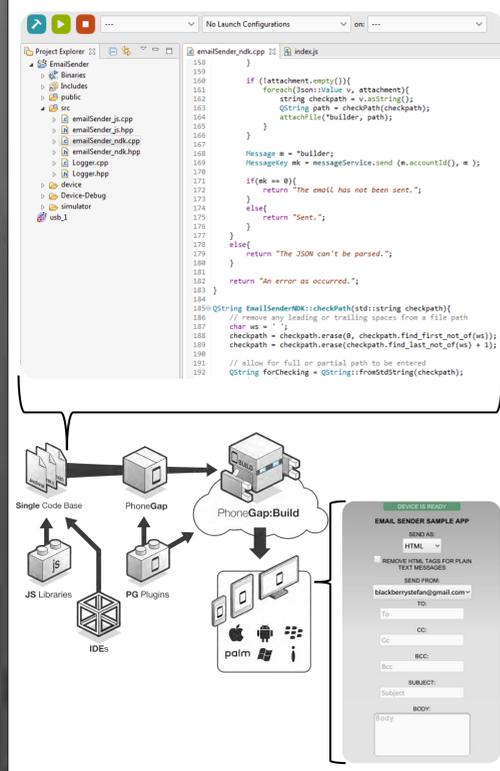
Lessons Learned:

- Distributed Development.
- Coding for real-world production code base.
- Version control and source code management system (Git).

Future:

- Further updates and creation of new plugins to enhance the apps in BlackBerry World.

Process:



Terminology:

Bug – is a coding error in a computer program.

Operating System (OS) – the version of the software that is running on a device.

Plugin – in order to access the phone functions and capabilities, a plugin must be written for each mobile platform that allows for these features to be used.



UCOSP
Undergraduate Capstone Open Source Projects

Acknowledgements:

Kevin O'Neil – for suggesting the project, guidance and support.
TRU – for the opportunity to participate in the project.
Tim Windsor – for your support and mentorship.
UCOSP – for creating and having an exceptional program for students.