LUNATECH
RESEARCH

Native Cross-platform Mobile Application Development

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April 17, 2012

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Abstract

Nowadays mobile devices are vastly integrated into modern society. They bring us one step closer to satisfy our ever growing need to have information available anytime, anywhere. To help gain access to information on mobile devices we use so called *apps*.

However the fragmented nature of today's mobile ecosystem poses a challenge for mobile developers to develop apps which are suitable to run on all mobile devices *(cross-platform*, since there is no de facto standard.

Currently there are several cross-platform mobile application development frameworks which offer a solution to this problem.

Lunatech having expressed its interest in mobile app development, would like to know which of these framework, *if any*, suits Lunatechs needs best. A research has been setup in order to resolve this question, its result is layed out in this thesis.

Credits

It is still a bit to early to start thanking people.

Contents

Introduction

Problem statement

Lunatech has demand for the development of cross-platform mobile applications. Untill today these applications have been developed using webtechnologiesch such as HTML5 and Javascript. A mobile application developed this way is refered to as webapp because it runs in a browserbased environment and is often hosted at a webserver rather than downloaded to the device itself.

The problem with webapps is that they lack in user experience. This is mainly due manner in which user interface components are build in HTML. Every platform has its own set of recognizable elements, but these cannot be accessed from within the browser environment. As a result of this the app will feel unearthly to the user because it's style doesn't match the rest of the platform. It tries to look and feels native, but never gets arround the fact that it's a webapp.

The direct alternative to webapps are native apps, native are writting using technologies proprietary to each platform, hench the term 'native'. What these applications lose in terms of cross-platform support they make up in terms of user experience. A native app has acces to all the platforms propietary libraries and can rely on the user interface elements provided through these libraries.

Lunatech would like to know how to make use of the look-and-feel from native apps with the cross-platform support of webapps.

Research questions

Main research question:

- *How to develop a cross-platform mobile application while retaining the native look-and-feel?*

Sub research questions:

- *Which solutions to cross-platform mobile application development currently exist?*

- *How is the native look-and-feel defined?*

Background

Lunatech Research B.V

Rotterdam University of Applied Sciences (Hogeschool Rotterdam)

Stager

WORM

Mobile platforms

Intoduction

Apple iOS

Google Android

RIM Blackberry OS

Windows Phone

Comparison

Exsisting solutions to Cross-platform Mobile Application Development

Intoduction

Webbased vs. Native

PhoneGap

Appcelerator Titanium

Rhodes

Worklight

MoSync

Comparison

Stager app requirements

Development and design

Stager app

Events

Notifications

Tickets

Mobile payment

Titanium modules

Stager service modules

Conclusion and Recommendations

Project goals

Stager case study

Cross-platform Mobile Application Development using Titanium

Evaluation of Titanium

Limitations of Titanium

Future work

Bibliography

Evaluatie