Senior Project – SPRING 2014
Pinecrest Gardens Mobile Application
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Problem
Pinecrest Gardens features over 1000 varieties of rare and exotic tropical plants and palm trees in a native tropical hardwood and cypress setting. You can spend a memorable day exploring, pack a picnic, enjoying a lecture or a class or watching a movie. The Village of Pinecrest wanted to develop an mobile application that could be used as a marketing tool to promote the facilities at Pinecrest Gardens, integrating with social media and compatible with iOS and Android devices.

Current System
Currently there was no system in place that can serve as a solution to our client’s problem. The City of Pinecrest does have a mobile website that provides an overview of Pinecrest Gardens, but it cannot serve direct connection with the users.

Requirements
Based on the Client Requirements the CMS was divided into multiple sections as shown below. Each of the following sections lists the use cases which I developed.

Authentication:
• Administrator Login (CMS001)
• Add Use to CMS (CMS003)
• Deactivate Administrative User (CMS005)
• Reset Password (CMS007)
• Update User Password (CMS008)

CMS Content Handling
• Update Page Content (CMS002)
• Subscribe User to Newsletter (CMS004)
• Update Mailing Preferences (CMS006)
• Upload Multimedia to the CMS (CMS009)

CMS Analytics
• Analyze User Engagement (CMS010)

System Design
The CMS uses two architectures Three-Tier and Model-View-Controller (MVC)

Implementation
The Content Management System (CMS) is built on top of Zend Framework 2 using the MVC architecture. Composer is used as the package manager for the application. The database of choice is MySQL for its versatility, availability and supportability with both PHP and Zend Framework. Analytical information is provided by Google™ Analytics using the Zend Framework GData API. The user interface is using Twitter Bootstrap as the base as well as other JavaScript libraries such as jQuery, CKEditor, Dropzone.js and others.

Verification
The testing process was divided into three phases:
• Unit Testing: verification on each class and methods for know states and expected outputs using PHPUnit and xdebug
• Integration Testing: data models and data table classes were tested via the CMS API to make sure it performed as expected by the API. The approach used to integrate the CMS and the API is the Big Bang due to the magnitude and scope of the project.
• System Testing: the system was tested thoroughly from various entry points and in different scenarios of possible real life situations.

Summary
After all the work we have put into this project we have effectively developed a solution for our client. The whole Application works fluidly, both the CMS and the Mobile App are integrated via the API developed by Osman and Eric. The CMS provides the client with an easy and user-friendly way to manage the Mobile App content. Additionally the client is able to see a snapshot of the app usage via the analytical component. Thanks to the use of Open Source tools used we were able to provide our client with a good solution with out any software licensing fees.

Screenshots

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