

Mobile Development

Tech Challenges

Assignment #1

www.captechconsulting.com

Copyright © 2015 CapTech Ventures, Inc. All Rights Reserved.

Contents

[1. Assignment 1](#_Toc444968213)

[2. Assignment Objectives 1](#_Toc444968214)

[3. Recommended Approach 1](#_Toc444968215)

[3.1. iOS 1](#_Toc444968216)

[3.2. Android 2](#_Toc444968217)

[3.3. Mobile Web / Responsive Site 2](#_Toc444968218)

[3.4. Universal Windows Platform (UWP) 3](#_Toc444968219)

[4. Deliverables 3](#_Toc444968220)

1. Assignment

This assignment, the first in a series, is designed to allow the developer to become familiarized with the tools necessary for development on a mobile platform. This assignment can be done for iOS, Android, mobile web, or any combination thereof.

The application must do the following:

* If the application is a native application is should conform to the Human Interface Guidelines (HIG) for the target device.
* Run and display a page displaying the words ‘Hello World’ centered on the top of the page and contain a button, centered half-way down the page. The button should readily appear to be a button to the user.
  + For mobile web, the page should have a fixed height and should not be scrollable.
* When the user presses the button the application should display a second page.
* The second page must contain a list of all of the date/times that the application was run.
* From the list page the user must be able to navigate back to the first page in a manner that conforms to best practices for the platform on which it is running.
* The list must be sorted by start date/time in ascending order.
* The display of the date/time should be in the format of the **current locale of the device**.
* The application must not crash or leak memory.
* The application must be deployed to a physical device.
* If a native application is developed it must have a custom icon.
* For native applications, it must operate correctly when the phone is in airplane mode.
* All storage of data must occur on the phone.

1. Assignment Objectives

When completed the student should have an understanding of the following concepts:

* SDK installation
* Software installation on the target device.
* Basic application structure
* Application startup
* Application view display
* View transitions
* Table views
* Basic local storage
* Basic date formatting

1. Recommended Approach
   1. iOS

* See Jack Cox for a developer account on the Apple developer portal. This is required to enable loading the application on a hardware device.
* Web resources:
  + <https://developer.apple.com/library/ios/navigation/#section=Resource%20Types&topic=Getting%20Started>
  + <https://developer.apple.com/library/ios/referencelibrary/GettingStarted/RoadMapiOS/index.html#//apple_ref/doc/uid/TP40011343>
  + <https://developer.apple.com/library/ios/#documentation/UserExperience/Conceptual/MobileHIG/Introduction/Introduction.html%23//apple_ref/doc/uid/TP40006556>
  + <https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/>
* Required Tools:
  + Xcode 6+
  + Mac with 10.10
* Suggested APIs
  + NSUserDefaults
  + UITableView and UITableViewController
  + UINavigationController
* CapTech Resources
  + Mark Broski
  + Jonathan Tang
  + John Morrison
  1. Android
* Web resources
  + <http://developer.android.com/index.html>
  + <http://developer.android.com/sdk/index.html>
  + <http://developer.android.com/about/index.html>
  + <http://developer.android.com/guide/components/fundamentals.html>
  + <http://developer.android.com/guide/topics/data/data-storage.html>
  + <http://developer.android.com/samples/index.html>
  + <http://developer.android.com/guide/topics/ui/index.html>
  + <http://developer.android.com/training/index.html>
  + <http://developer.android.com/training/basics/activity-lifecycle/index.html>
  + <http://developer.android.com/training/implementing-navigation/index.html>
* Required Tools
  + Android ADK
  + Android Studio 1.0+
  + Gradle
  + Mac or Windows PC
* CapTech Resources
  + Antoine Campbell
  + Jairo Vazquez
  1. Mobile Web / Responsive Site
* Web resources
  + Angular JS (<https://angularjs.org/>)
  + Bootstrap CSS (http://getbootstrap.com/css/)
* Required Tools
  + Web Browser
  + Mobile Device or Simulator/Emulator
* CapTech Resources
  + Josh Stickles
  + Matt Kesler
  1. Universal Windows Platform (UWP)
* Web resources
  + <https://dev.windows.com/en-us/>
  + <https://msdn.microsoft.com/en-US/library/windows/apps/windows.ui.xaml.controls.aspx>
  + <https://msdn.microsoft.com/en-US/>
  + MVVM Frameworks
    - <http://mvvmlight.codeplex.com/>
    - <https://pnpmvvm.codeplex.com/>
* Required Tools
  + Windows 10+
  + Visual Studio 2015+ with UWP SDK
  + Windows 10 Mobile Emulators (optional)
* CapTech Resources
  + John Nein
  + Nicholas Cipollina

1. Deliverables

An application that meets the above requirements running on the target mobile device is required for completion of this assignment.