I Heart Corvallis - Mobile Application Fall 2017 Progress Report

Capstone I

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Abstract

This document takes a look back at the work we have done on the I Heart Corvallis mobile application this past term. It recaps the purposes and goals of the application, explains where we are currently on the project, and describes problems we have faced so far, how they impeded our progress on the project, and how we solved those problems. It also highlights several useful pieces of code we encountered throughout the research process and provides a retrospective of the past 10 weeks, looking back at the positives that happened each week, any changes we need to implement in our project, and what we will do to successfully make those changes.

CONTENTS

1 PROJECT OVERVIEW

In this project, we will be producing the "I Heart Corvallis" mobile application. The app will showcase events happening around the Corvallis community, such as city council meetings, service and volunteer projects, and other community activities. It will also act as a passport for users to show that they have attended these activities. The app will give the user stamps upon completion or verification of attendance for each activity and will offer rewards to the user for accumulating enough stamps. On top of this, the application will showcase other resources available to community members.

The application will be available for Android devices and aims to inform members of the Corvallis community, both students and others, about various initiatives and resources around the community, as well as get community members more involved with community projects, events, and meetings by giving them an incentive to do so.

Another goal of the app is to help students be more aware of community events. To accomplish this, the application will utilize the Google Maps API to show where events and various community resources can be found. The app will also include a separate page that will provide additional information about the city of Corvallis, such as links to websites in the community and information about the Corvallis Community Relations (CCR) office and the initiative.

2 PROBLEMS WE'VE ENCOUNTERED

The CCR office does not possess a lot of technical prowess, so it has been a bit of challenge figuring out what exactly they are picturing as a final product. We had to spend time at the beginning of the term trying to see what they want out of the app and what features they desired, and we had to set some expectations for them regarding what is and is not feasible in the timeframe we have for this project. We had to inform them that building two separate versions of the app, one for Android and one for iOS, could be a stretch given our timeframe, so we made the iOS version of the app a stretch goal.

3 CURRENT STATUS

Currently, we have just finished designing our application and conducting the proper research on different aspects of the app. We have defined the important pieces of our application in our Tech Review documents and our Design Document. In these documents we also decided on which technologies, APIs, systems, and implementations we will use to create the best version of this application that we can. Now that we have completed designing the app, over Winter Break we will begin the implementation and creation of the application.

4 RELEVANT CODE SNIPPETS

4.1 Retreiving Data From a MySQL Database with PHP

The following code snippet shows how to grab information from a database and print that information to the screen. In this example, the database contains names. Code like this will come in handy when we're grabbing information from our databases and presenting them in the application.

```php
<?php
$servername = "localhost";
$username = "username";
$password = "password";
$dbname = "myDB";

// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
  die("Connection failed: " . $conn->connect_error);
}

$sql = "SELECT id, firstname, lastname FROM MyGuests";
$result = $conn->query($sql);

if ($result->num_rows > 0) {
  // output data of each row
  while($row = $result->fetch_assoc()) {
    echo "id: " . $row["id"]. " - Name: " . $row["firstname"]. " " . $row["lastname"].
        "<br>";
  }
} else {
  echo "0 results";
}
$conn->close();
?>
```

[1]

4.2 Initializing a Geolocation Request

The following piece of code shows an example of the structure of a Geolocation request body built using the Google Maps Geolocation API.

```json
{
  "homeMobileCountryCode": 310,
  "homeMobileNetworkCode": 410,
  "radioType": "gsm",
  "carrier": "Vodafone",
  "considerIp": "true",
  "cellTowers": [
    { // GSM Cell Tower
      "cellId": 42,
      "locationAreaCode": 415,
      "mobileCountryCode": 310,
```

```json
      "mobileNetworkCode": 410,
      "age": 0,
      "signalStrength": -60,
      "timingAdvance": 15
    },
    { // WCDMA Cell Tower
      "cellId": 21532831,
      "locationAreaCode": 2862,
      "mobileCountryCode": 214,
      "mobileNetworkCode": 7
    }
  ],
  "wifiAccessPoints": [ // This array must contain two or more WiFi access points objects.
      The macAddress field is required, and all other fields of the object are optional.
    {
      "macAddress": "00:25:9c:cf:1c:ac",
      "signalStrength": -43,
      "signalToNoiseRatio": 0
    },
    {
      "macAddress": "00:25:9c:cf:1c:ad",
      "signalStrength": -55,
      "signalToNoiseRatio": 0
    }
  ]
}
```

[2]

4.3 Adding a Marker to a Google Map

The following code snippet shows how to use the Google Maps JavaScript API to initalize a Google Map centered at a particular location and place a marker on that location. In this case, the location used is Uluru, Australia. Code like this will come in handy when placing events on the Google Map we plan to integrate into the application.

```javascript
function initMap() {
  var myLatLng = {lat: -25.363, lng: 131.044};

  var map = new google.maps.Map(document.getElementById('map'), {
    zoom: 4,
    center: myLatLng
  });

  var marker = new google.maps.Marker({
    position: myLatLng,
    map: map,
```

```
    title: 'Hello World!'
  });
}
```

[3]

5 RETROSPECTIVE

Week #	Positives	Deltas	Actions
1	• Bradley got into contact with our client for the first time.	-	-
2	• Our group met for the first time. • We contacted our client and set up a first meeting date. • We made sure that we had LaTeX working correctly and that we understood how to use it. • We started working on our problem statement.	-	-
3	• We completed the rough draft of our Problem Statement. • We set up our group GitHub repository for app files and class documents. • We met with our client for the first time. • We researched cross-platform implementation software options.	• We had a set weekly meeting time with our client for Fall term. We need to do the same for Winter term.	• Once Winter term starts, we will talk to our client to decide on the best time to meet with them weekly to discuss progress on the application.

4	• We completed the final draft of our Problem Statement. Prior to turning it in, we had it reviewed by our client, Kirsten, and the Writing Center in the library.	-	-
5	• We showed our client some concepts for different parts of of the application and noted her thoughts on the concepts. • We completed the rough draft of the Requirements Document. • We changed the iOS version app from a primary goal to a stretch goal.	• Throughout the application implementation process, we need to be able to show our client actual working parts of the app instead of just concepts.	• We plan to take care of this by beginning the implementation of the app over Winter Break.
6	• We completed the final draft of the Requirements Document. • We attended the first of two focus groups being held by the CCR office.	• The Requirements Document will need to be changed if we make any changes to the project throughout the implementation process.	• If any of the requirements change at some point in the next two terms, we will go back through the Requirements and make any necessary changes.

7	• We met with our client and reflected on the feedback we received about the application from the first focus group.	• We will need to receive feedback from the second focus group.	• Our client has the notes from that second focus group, so we will need to reach out to her and have her send those to us so we can reference and consider them when implementing the app.
8	• We completed the rough draft of our Tech Review documents.	-	-
9	• We completed the final draft of our Tech Review documents.	• We will need to make any necessary changes to the Tech Review throughout the next two terms based on how the implementation process goes and if we make changes to our architectures choices.	• We will begin implementation of the app over Winter Break, and if we discover any complications due to which technologies we initally chose in our Tech Review documents, we may choose a different architectural choice, and this change will be reflected in future versions of our Tech Review documents.

| 10 | • We completed our Design Document. | • We will need to reflect any changes that get made to our Tech Review over the next two terms in the Design Document. | • We will begin implementation of the app over Winter Break, and if we discover any complications due to which technologies we initally chose in our Tech Review documents, we may choose a different architectural choice, and this change will be reflected in future versions of both our Tech Review documents and our Design Document. |

REFERENCES

[1] Php select data from mysql. [Online]. Available: https://www.w3schools.com/php/php_mysql_select.asp

[2] The google maps geolocation api. [Online]. Available: https://developers.google.com/maps/documentation/geolocation/intro

[3] Markers. [Online]. Available: https://developers.google.com/maps/documentation/javascript/markers