CS CAPSTONE PROGRESS REPORT

WEBSITE AND APPLICATION FOR HEALTH CAREERS IN OREGON

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Project Requirements

1. Relational Database
2. MySQL
3. Bootstrap Framework
4. Templated Page Generation
5. Google Analytics
6. User Testing
7. Android Application
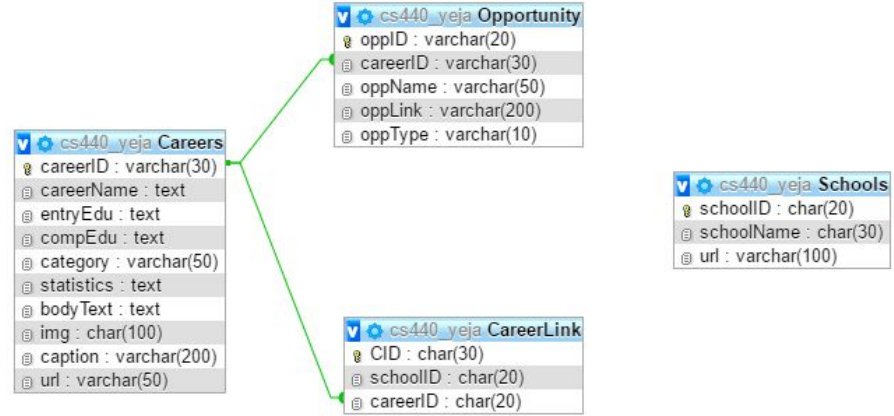8. Hybrid Application
9. Android Studio

Database type - Relational Database

Database

- Relational Schema
- Relational Algebra
- Referential Integrity

UML Diagram

- Entities with Primary and Foreign Keys
- One-to-Many or Many-to-Many relationships

cs440_yeja Opportunity
- oppID : varchar(20)
- careerID : varchar(30)
- oppName : varchar(50)
- oppLink : varchar(200)
- oppType : varchar(10)

cs440_yeja Careers
- careerID : varchar(30)
- careerName : text
- entryEdu : text
- compEdu : text
- category : varchar(50)
- statistics : text
- bodyText : text
- img : char(100)
- caption : varchar(200)
- url : varchar(50)

cs440_yeja Schools
- schoolID : char(20)
- schoolName : char(30)
- url : varchar(100)

cs440_yeja CareerLink
- CID : char(30)
- schoolID : char(20)
- careerID : char(20)

Database Hosting

Database Service

- MySQL

MySQL

```
//update member data
$db->query("UPDATE Careers SET careerID = '".$line[0]."', careerName = '".$line[1]."',
entryEdu = '".$line[2]."', compEdu = '".$line[3]."', category = '".$line[4]."',
statistics = '".$line[5]."', bodyText = '".$line[6]."', img = '".$line[7]."',
caption = '".$line[8]."'
WHERE careerID = '".$line[0]."' ");
```

- Easy to adjust, manage and optimize
- Handle large data sets
- SQL Queries

Connection

- dbConfig.php
- connectvarsHC.php
- School client/server

```
// Define database connection constants

$dbhost = 'mysql.cs.orst.edu';
$dbname = '██████_yeja';
$dbuser = '██████_yeja';
$dbpass = '██████';

$mysql_handle = mysqli_connect($dbhost, $dbuser, $dbpass, $dbname);
```

Webpage Styling - Bootstrap

- In order to give our website a professional look we decided to rely upon an existing styling framework.

- In our development we have implemented a condensed version of Bootstrap.

- This 5715 line version of the original CSS file contains the lines necessary to style the elements of our website

```
1    /*!
2     * Bootstrap v3.3.7 (http://getbootstrap.com)
3     * Copyright 2011-2016 Twitter, Inc.
4     * Licensed under MIT (https://github.com/twbs/bootstrap/blob/master/LICENSE)
5     *//*! normalize.css v3.0.3 | MIT License | github.com/necolas/normalize.css */
6    html{font-family:sans-serif;
7    -webkit-text-size-adjust:100%;
8    -ms-text-size-adjust:100%}body{margin:0}
9    article,aside,details,figcaption,figure,footer,header,hgroup,main,menu,nav,section,summary{display:block}
10   audio,canvas,progress,video{
11   display:inline-block;vertical-align:baseline
12   }
14   audio:not([controls]){
15   display:none;height:0
16   }
17
18   [hidden],template{
19   display:none}
20   a{
21   background-color:transparent}
22   a:active,a:hover{
23   outline:0}
24
25   abbr[title]{
26   border-bottom:1px dotted}
27
28   b,strong{
29   font-weight:700}
30
31   dfn{
32   font-style:italic}
33
34   h1{
35   margin:.67em 0;font-size:2em}
36
37   mark{
38   color:#000;background:#ff0}
39
40   small{
41   font-size:80%}
```

Webpage Styling - Bootstrap Continued...

- HTML5 Elements within our webpages are each given a class tag with corresponding styling information in our Bootstrap.min CSS file

- We are also using additional styling sheets to achieve a look more specific to our website

```html
<!-- Navigation -->
<nav class="navbar navbar-default" role="navigation">
    <div class="container">
        <!-- Brand and toggle get grouped for better mobile display -->
        <div class="navbar-header">
            <button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#bs-example-navbar-collapse-1">
                <span class="sr-only">Toggle navigation</span>
                <span class="icon-bar"></span>
                <span class="icon-bar"></span>
                <span class="icon-bar"></span>
            </button>
            <!-- navbar-brand is hidden on larger screens, but visible when the menu is collapsed -->
            <a class="navbar-brand" href="index.html">Health Careers</a>
        </div>
        <!-- Collect the nav links, forms, and other content for toggling -->
        <div class="collapse navbar-collapse" id="bs-example-navbar-collapse-1">
            <ul class="nav navbar-nav">
```

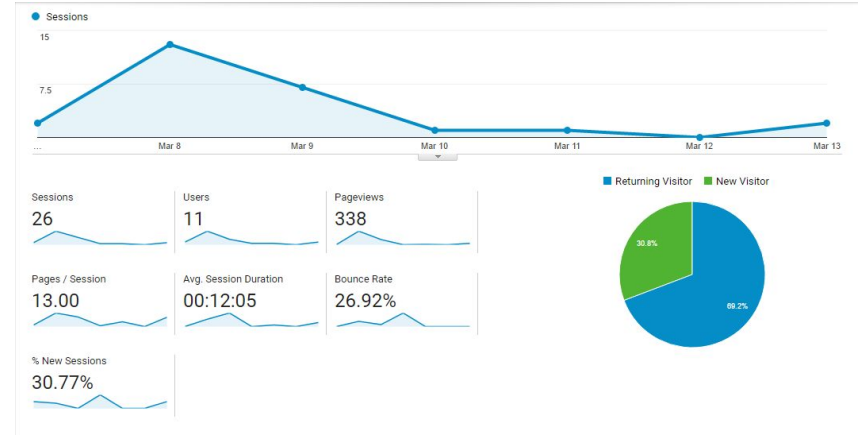# Webpage Generation - Template Implementation

- Due to the number of pages to be added to our website, our method of reproducing webpages became important. We chose to generate all new pages based on a template.

- The system we have implemented uses PHP code to generate new pages when new career information pages are added to our database through our CSV uploading page.

```php
$c = 'template.php';
$n = './pages/';
$n .= $add;
$r = 'TEMPLATE';
$p = $line[0];
$handle = fopen($c, 'r') or die ('Cannot open file');
$data = fread($handle,filesize($c));
$data2 = str_replace($r, $p, $data);
fclose($handle);
#echo $data2;
$handle2 = fopen($n, 'w') or die ('Cannot open file');
fwrite($handle2, $data2);
fclose($handle2);
```

Web statistics

Google Analytics

- Most popular/best Visualization tool
- Understanding customer experience
- Easy to use
- Data collection from users

User Testing: Cognitive Walkthrough

For our user testing we asked our users to complete several tasks. These include:

TASK 1: Choosing a Module (Navigating away from the home page)

TASK 2: Exploring a specific career path (Navigate to the career selection screen)
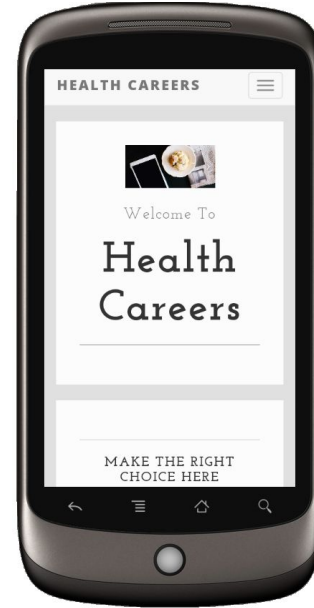
TASK 3: Contacting a specific career (Navigate to a career pathway information screen)

TASK 4: Exploring the hot topic from main page slides (Select a featured topic from our home page image carousel)

TASK 5: Writing a feedback email

TASK 6: navigating to main page

Mobile OS Platform

Mobile Application Type - Hybrid Application

- There are several routes we could have taken in our application development, but we chose to develop a hybrid application

- Due to Bootstrap's responsive styling our website can be scaled to the screen of a mobile device.

- By developing an app that acts as an abstracted mobile browser we fulfil our mobile application requirement, while saving development time

Mobile OS Development

```
package com.example.app;

import ...

public class MyAppWebViewClient extends WebViewClient {

    @Override
    public boolean shouldOverrideUrlLoading(WebView view, String url) {
        if (Uri.parse(url).getHost().endsWith("healthcareersoregon.com")) {
            return false;
        }

        Intent intent = new Intent(Intent.ACTION_VIEW, Uri.parse(url));
        view.getContext().startActivity(intent);
        return true;
    }
}
```

Demonstration

Our project includes several observable features.

These include:

- A website with full navigation
- An email contact function
- A CSV to database upload page
- A downloadable mobile application

Conclusion

We have been able to meet all functional and implementation requirements as specified in our planning documents

Our final deliverable component is the completion of our project implementation guide for maintenance and administrative use.

We have still been waiting to receive information about a database hosting solution from our client. This has been the case for several weeks.