**PROJECT REPORT**

**CSE4500 Platform Computing**

**Instructor: Lawrence Orijuela**

Name:\_Nathan Bush\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ SCORE: \_\_\_/30

Student ID: \_007463099\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DUE: \_2/28/23\_

LAB:\_Project 2 – Physics Project App2\_\_\_\_\_\_\_\_\_\_

**Report**

1. There are three total ways to add JavaScript to your HTML code. Describe all three with 2 or more sentences each.
   1. **Embedding the JavaScript directly in the HTML document.** The <script></script> tag is a way to code the JavaScript directly into the HTML document, by setting the opening tag to type=’text/javascript’. Raw JavaScript can then be inserted within that block of code to manipulate the HTML document directly via the DOM.
   2. **Inserting the JavaScript into the HTML document by linking an external file.** Again, the <script></script> tags are used, but this time there is no content between the tags. Instead, in the header where the type=”text/javascript” is declared, another attribute “src” is declared with a value for the relative path of the JavaScript file to include in the document.
   3. **Inserting an external file containing a JavaScript function, and calling that function within the HTML document.** As in the second option, the <script> tag is used to reference an external JavaScript file. However, rather than just containing a block of JavaScript, the code is written as a function. The function can then be called within the <body> tag using the “onload” attribute and passing it the name of the function along with any parameters it requires.
2. Explain how you add multiple pages to an HTML web app.

Other pages can be added by simply creating new .html files to define those pages. The other .html files can be placed in the same directory as index.html, and there are multiple ways to route between web pages. Since we are only building a simple app, we will be using the jQuery Mobile navbar widget to link between pages. Within the navbar widget, we define an unordered list containing references to the various HTML pages we will write.

1. Explain how you add a widget (like a button) to an HTML web app.

jQuery makes it easy by providing us with extensive files that have widgets implemented already. When using jQuery Mobile, we can use the API to use preset tags. For example, the <button></button> tag with text in between adds and names a button. There are many other widgets that can be used, for example the <label></label> tag can be used to label a text-input box by calling out the name of the text box to label with the “for” attribute. The text box itself uses an <input></input> tag along with a variety of attributes to describe behavior of the text box.

**Source Code**

<!-- CSE-4500 Platform Computing SPR23

     Nathan Bush - 007463099

     Project 2 - index.html -->

<!DOCTYPE html>

<html>

<head>

    <title>Physics Simulator App</title>

    <link rel="stylesheet" href="css/jquery.mobile-1.3.1.min.css">

    <script type="text/javascript" src="scripts/physicsProjectileApp1.js"></script>

    <script src="scripts/jquery-1.8.3.min.js"></script>

    <script src="scripts/chromeFileProtocolFix.js"></script>

    <script src="scripts/jquery.mobile-1.3.1.min.js"></script>

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

</head>

<body>

    <div data-role="page">

        <div data-role="navbar">

            <ul>

                <li><a href="information.html">Information</a></li>

                <li><a href="index.html" class="ui-btn-active ui-state-persist">Interface</a></li>

            </ul>

        </div>

        <div data-role="header">Projectile Calculator</div>

        <div data-role="content">

            <label for="angle">Angle:</label>

            <input type="range" name="angle" id="angle" min="0" max="90">

            <label for="velocity">Velocity:</label>

            <input type="range" name="velocity" id="velocity" min="0" max="999">

            <br>

            <button onclick="display();">Display</button>

            <br>

            <table id="data">

                <tr>

                    <td>Angle Entered:</td>

                    <td id="angleDisplay">0</td>

                    <td>degress</td>

                </tr>

                <tr>

                    <td>Velocity Entered:</td>

                    <td id="velocityDisplay">0</td>

                    <td>meters/second</td>

                </tr>

            </table>

        </div>

        <div data-role="footer">

            <small>

                Cross-platform mobile app demo

            </small>

        </div>

    </div>

</body>

</html>

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     Project 2 - information.html -->

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            </ul>

        </div>

        <h1>Projectiles</h1>

        <div data-role="content">

            <figure>

                <img src="media/projectilePic.png"

                alt="A Cannon Firing a Projectile"

                width="333"

                height="228">

                <figcaption>

                    <strong>Fig. 1 - A Projectile Fired From a Cannon</strong>

                </figcaption>

            </figure>

            <video controls>

                <source src="media/projectileVid.mp4" type="video/mp4">

                <source src="media/projectileVid.ogg" type="video/ogg">

            </video>

            <p>In 1600s, armies used equations of motions to calculate

                velocities and angle for firing a missile to hit

                a target. While a quarterback does not do explicit

                calculations using equations of motion, a computerized

                football game will certainly need to do these calculations.

                <br> We will use the metric notations that are favored

                for all scientific and engineering calculations

            </p>

            <h2>Abbreviations</h2>

            <ul>

                <li>meters, <em>m</em></li>

                <li>kilometers, <em>km</em>: 1000 meters make up a kilometer</li>

                <li> meters per second, <em>m/s</em>: units for measuring distance</li>

                <li> meters per second squared, <em>m/s

                    <sup>2</sup></em>: units for measuring acceleration

                </li>

            </ul>

            <h2>Notations</h2>

            <table>

                <tr>

                    <th>Abbreviation</th>

                    <th>Meaning</th>

                </tr>

                <tr>

                    <td>u</td>

                    <td>Initial velocity</td>

                </tr>

                <tr>

                    <td>v</td>

                    <td>Final velocity</td>

                </tr>

                <tr>

                    <td>a</td>

                    <td>Acceleration</td>

                </tr>

                <tr>

                    <td>t</td>

                    <td>Time</td>

                </tr>

                <tr>

                    <td>s</td>

                    <td>Distance</td>

                </tr>

            </table>

            <h2>Equations</h2>

            <ol>

                <li><mark>a = (v - u) / t</mark>, which can be arranged to get the following

                    equation</li>

                <li><mark>t = (v - u) / a</mark>, which can be further arranged as</li>

                <li><mark>v = u + a \* t</mark></li>

                <li><mark>s = u \* t + 0.5 \* a \* t<sup>2</sup></mark>, another useful

                    equation of motion</li>

            </ol>

        </div>

        <div data-role="footer">

            <small>

                Cross-platform mobile app demo

            </small>

        </div>

    </div>

</body>

</html>

**Screenshots**

Browser render: index.html

Graphical user interface, text, application, email

Description automatically generated

Broswer Render: information.html

Graphical user interface, website

Description automatically generated