CPRG256

FINAL ASSESSMENT

DUE DATE: 6PM FRIDAY APRIL 21, 2017. NO LATE SUBMISSIONS WILL BE ACCEPTED. ONLY STUDENTS WHO HAVE SUBMITTED THEIR PROJECT WILL BE ALLOWED TO DEMONSTRATE.

PART A:

Under ‘htdocs’ create a directory titled ‘finalassessment’ and a Virtual Host titled [www.finalproject.net](http://www.finalproject.net).The index page will be displayed when the browser is set to: <https://www.finalproject.net.> You will need to use the SSL configurations to enable this virtual host. This page will list your name and SAIT ID and links to the other applications in the project.

(5 Marks)

PART B:

You will create an ‘index.html’ page that will display and search for data as described below.

You have been provided with two files: ‘welldata.xml’ and ‘productiondata.xml’. The ‘welldata.xml’ contains the following data:

* Location of the well using the Alberta Township System (See below for details)
  + Depth of the well in meters
  + Perforation depth (top) in meters
  + Perforation zone in meters
  + Pump stroke length
  + Strokes per minute

A well location in accordance with the Alberta Township System shown below:

Example: B15-98-17-W5

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Section |  | Township |  | Range |  | Meridian |
| B15 | - | 98 | - | 17 | - | W5 |
| VALID DATA RANGE:  Section: A-D and 1-16  Township: 1-126  Range: 1-24  Meridian: W and 4-6 | | | | | | |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

The ‘productiondata.xml’ file contains the following data:

* + A well location
  + Date
  + Oil production in m3/day
  + Water production in m3/day
  + Gas production in 103 m3/day

Your application will do the following:

Search by specific location of a well.

The user can enter the full location using the Alberta Township System e.g. B15-98-17-W5. Your application will search ‘welldata.xml’ to find the oil well. If the oil well is found, it searches ‘productiondata.xml’ for the production information for that well. The data is then displayed on the web page in separate <form> or <div> element. If no well is found, an error message will be printed to the page.

Search by ‘section’ for an oil well.

The user can enter the ‘section’ for an oil well e.g. B15 and the program will search ‘welldata.xml’ for any oil wells that start with that section. There will likely be multiple oil wells for each search. Your program will return a list of possible oil wells. The user can then click on a specific oil well and your program will search ‘productiondata.xml’ for the production information. Assuming the data is valid, all the data will be displayed on the web page in a separate <form> or <div> element.

Features:

Any data input must be validated according to the Valid Data Range listed above.

Include buttons that will start the search or clear data from the form.

Create a link to the ‘advancedsearch.hmtl’ page. (Described in Part C)

The application must use AJAX to process the xml files and display the search responses. This will prevent the entire page reloading when a search value is entered.

(15 Marks)

PART C

Within ‘finalassessment’ create a new page titled ‘advancedsearch.html’. This page use the same xml files used in PART B of this assignment.

This web page will describe and contain text fields that represent the data in both ‘welldata.xml’ and ‘productiondata.xml’. This page will have enhanced search capability.

The text fields for ‘Well Location’, ‘Depth of Well, ‘Oil Production’ and ‘Gas Production’ will be searchable. These fields will be linked to an‘onkeyup()’ JavaScript event. As data is entered into one of the fields, the relevant search function will look for matching records in either of the xml files. As records are found, the will be displayed in a <div> element on the page. If a user chooses, they can select one of the records and the relevant data will be populated into the text fields.

Example 1: If a user enters the letter ‘B’ in the Well Location text field, all the records in ‘welldata.xml’ starting with ‘B’ will be displayed. If they type ‘B15’, the list will change to all records starting with B15. If a specific record is selected, the data from ‘welldata.xml’ and ‘productiondata.xml’ will be displayed in the correct text fields.

Example 2: If a user starts entering numbers into the ‘Oil Production’ text field, the search function will find and display the records in ‘productiondata.xml’ that match that string or substring in ‘productiondata.xml’. If a specific record is selected, the data from ‘welldata.xml’ and ‘productiondata.xml’ will be displayed in the correct text fields.

Your program must use AJAX to parse the data from the .xml files and display the records on the page.

(20 Marks)

PART D

Under ‘finalassessment’ create a folder ‘finalquiz’ containing ‘index.html’. You are to create a web page that will display a quiz and create the necessary JavaScript or jQuery to complete the following:

* Process the ‘FinalQuiz.xml’ file to display the multiple choice questions within the index.html page. Each question has 4 possible answers.
* Create a function that will grade the quiz and display the grade out of 5. Within ‘FinalQuiz.xml’ is an element ‘rightanswers’ that has a comma delimited string with the correct answers. Use CSS to create an appropriate interface.

Here is an example of what the display could look like:

Question 1:

In a switch statement, the \_\_\_\_\_\_\_\_ case clause is used to process exceptional conditions and is usually listed last.

* A) break
* B) default
* C) else
* D) then

At the end of the quiz, create a button ‘Grade Quiz’, that will display the number of correct answers out of five. E.g. ‘Grade 3/5’

(10 Marks)

REQUIREMENTS

Each page will require a ‘header’ that includes your name and SAIT id number.

You are required to use CSS/Styling to create pleasing and useful interfaces for your applications. You may use any combination of JavaScript of jQuery to implement your solutions.

10% BONUS

If you successfully implement ‘Bootstrap’ or another type of Responsive Design framework, you will receive an additional 10% (5 marks) on your project.