Assignment 2 COMP466

Part 2 Documentation

Following the cover page will be the required documentation on your work for each part of the assignment, which should include:

- the original description and requirements of the project
- your interpretation of the assignment project and requirements
- your analysis and design of the web application
- documentation of your implementation
- a guide for users (your tutor, who will mark the assignment) to set up, to run, and to use the web application
- a hyperlink to the web applications you design for the project
- anything else you want to say to your tutor

Original description and requirements of the project

In this part of the assignment, you are required to develop a small-scale online learning management system that can be used to deliver online courses to learners.

To that end, you will have to think about what these online courses are, how they can they be developed and how they should be stored on the web server, how they can be retrieved from the server, how they should be delivered to a web browser, and then rendered/presented properly on the web browser.

My interpretation of the assignment project and requirements

Basically, I needed to create a system for online learning that will be user-friendly for people who do not know HTML, CSS, and other programming languages to deliver the content. I've used XML format which can be used to 'code' the content of the course. I will provide the structure of the XML below to explain to the user how he/she should set up the document for website to accept it. As well as course content, the user can create a quiz at the end of the chapter by using XML format as well. This makes creating content for the course much easier since there is no need to know how to code HTML, CSS and JS, all the work is done by the website I've created. A user can access its account and upload the document and the website will parse it, and show the content and the quiz for the specified chapter.

My analysis and design of the web application, documentation.

Firstly, let's start by looking at the structure of XML the user needs to follow in order to set up the lesson.

XML STRUCTURE:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<unit>
 <title>Unit Name </title>

 <chapter>

   <chapter_name>Chapter Name</chapter_name>
   <content>Chapter Content </content>


  <chapter_name>Chapter Name</chapter_name>
   <content>Chapter Content </content>

 </chapter>
 <quiz>
  <questions>

   <question>
    <text_of_question> question 1? </text_of_question>
     <possible_answer1>option1</possible_answer1>
     <possible_answer2>option2</possible_answer2>
     <possible_answer3>option3</possible_answer3>
     <possible_answer4>option4</possible_answer4>
```

```
          <right_answer>option3</right_answer>

      </question>

    <question>

      <text_of_question> question 2? </text_of_question>

        <possible_answer1>option1</possible_answer1>

        <possible_answer2>option2</possible_answer2>

        <possible_answer3>option3</possible_answer3>

        <possible_answer4>option4</possible_answer4>

        <right_answer>option4</right_answer>

      </question>


    </questions>

   </quiz>


</unit>
```
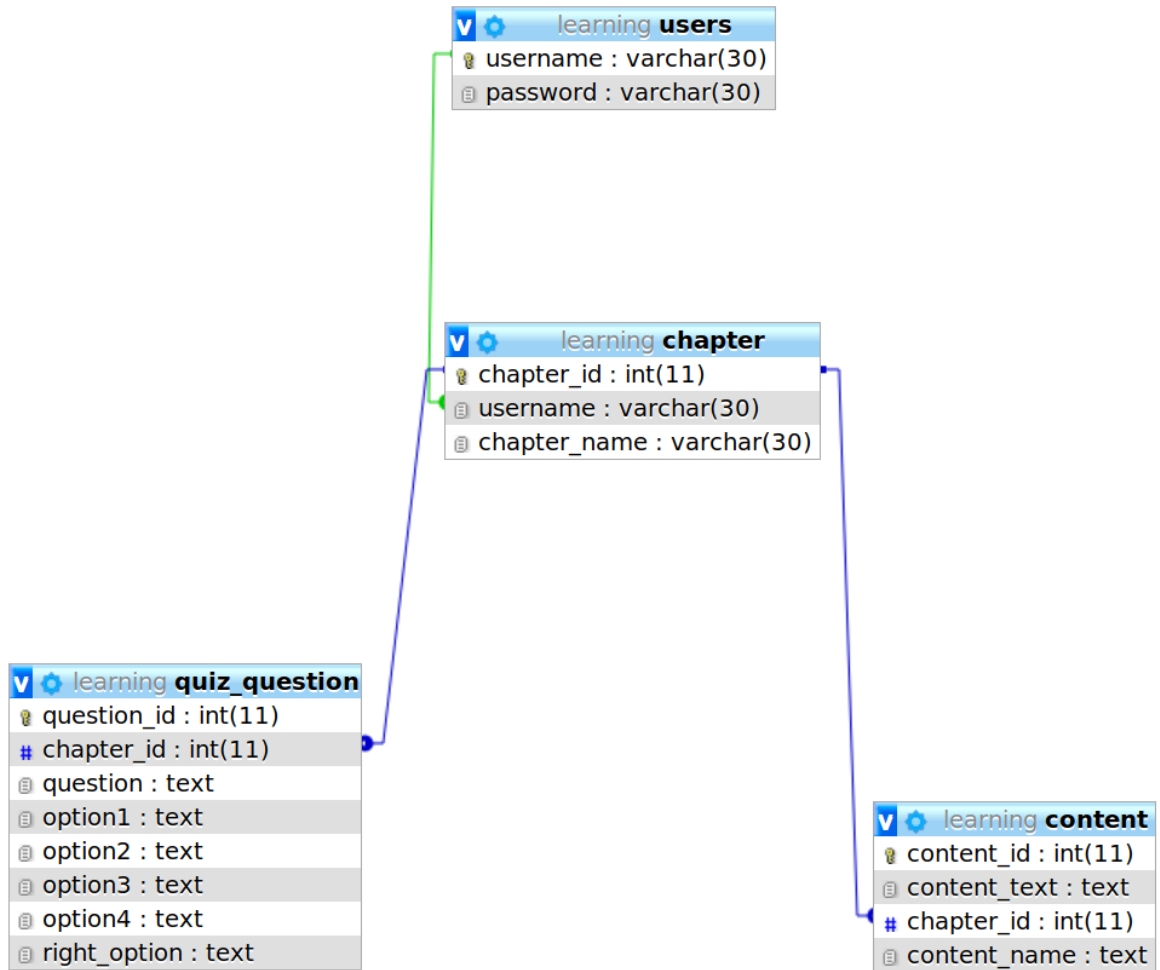
As it can be seen it's user friendly. The user can put as much chapters as he/she wants, as well as the questions for the quiz. The system also marks the quiz and shows the score as well as what question was answered wrong or right. After the user is done setting up the document he/she may log in into his/her account and upload the document, and the link will be created where the lesson and be accessed.

Next, let's see the structure of the database.

learning users
username : varchar(30)
password : varchar(30)

learning chapter
chapter_id : int(11)
username : varchar(30)
chapter_name : varchar(30)

learning quiz_question
question_id : int(11)
chapter_id : int(11)
question : text
option1 : text
option2 : text
option3 : text
option4 : text
right_option : text

learning content
content_id : int(11)
content_text : text
chapter_id : int(11)
content_name : text

SQL used to create the database:

CREATE TABLE users (

   username VARCHAR(30) NOT NULL,

   password VARCHAR(30) NOT NULL,

   PRIMARY KEY (username)

);

CREATE TABLE chapter (

```
    chapter_id INT NOT NULL AUTO_INCREMENT ,

    username VARCHAR(30),

    chapter_name VARCHAR(30),

    INDEX par_ind (username),

    PRIMARY KEY(chapter_id),

    FOREIGN KEY (username)

        REFERENCES users(username)

        ON DELETE CASCADE

);


CREATE TABLE content (

    content_id INT NOT NULL AUTO_INCREMENT,

    content_text TEXT,

    chapter_id INT,

    content_name TEXT,

    PRIMARY KEY(content_id),

    INDEX chap_ind (chapter_id),

    FOREIGN KEY(chapter_id) REFERENCES chapter(chapter_id) ON DELETE CASCADE

);


CREATE TABLE quiz_question (

    question_id INT NOT NULL AUTO_INCREMENT,

    chapter_id INT,

    question TEXT,
```

option1 TEXT,

option2 TEXT,

option3 TEXT,

option4 TEXT,

right_option TEXT,

PRIMARY KEY(question_id),

INDEX chap_ind(chapter_id),

FOREIGN KEY (chapter_id) REFERENCES chapter(chapter_id) ON DELETE CASCADE

);

Next, file structure of the projects:

Part2/:

Add_user.php - add a new user to the database

File_upload.php - handles the uploading process of the file(XML file with the lesson).

Homepage.php - shows the list of the lessons if they exist, and a user can upload its lesson file from this page.

Lesson.php - parses the data from MySql database to html format page, setting up page with lesson content as well as the quiz.

Login.php - handles the logging in process, starts session.

Logout.php - destroys the session, and logs user out.

Read_file.php - performs parsing from XML into the database, inserts instances to the database.

Tables_for_database.php - sql code shows how the tables were created.

Welcome_learing.php - the page where a user can sign up or sign in or return to the main page of the assignment.

../shared/Script_for_part2.js - handles marking the quiz and counting the score.

Guide for users (your tutor, who will mark the assignment) to set up, to run, and to use the web application

I'm using Apache server, put all the content of TMA2.zip into /htdocs and start the server, then go to tma2.html from there choose part 2.

Hyperlink to the web applications you design for the project

Copy and paste it in your browser:

https://35.196.37.129/a2/tma2.html

You will see the hyperlink once you open TMA2.html file.

There are 3 lessons I made myself, you can upload them to your account and see them. These are located under a2/lessons/.