SIT103/SIT772: Database Fundamentals

9.2D: User Interface and Embedded SQL

Overview

In this task, you will design a simple user interface (a form) to populate a record in a table you designed and implemented in your mini-project (Task 7.2C). **The main aim of this task is to embed SQL in an application developed using other programming languages and/or technologies**. You can use any programming languages or technologies you like to design the form.

Tasks to do

Select one key table in your mini-project database and design a form that allows user to insert records in the table. Your form should allow user to input column values. You can use textboxes, dropdown lists, checkboxes, radio buttons, etc. that allows user to provide the required data. You MUST have a button called "*Insert*" or "*Add*" at the end. When this button is pressed, your interface must validate the data provided by the user to make sure all mandatory data are received, and they are in forms/formats that meet the requirements of the table definition. It must throw an error if any mandatory data are missing, or they do not satisfy constraints in the database table with appropriate error message and no record should be added in the table. A record is added in the table only if all required data are received and they satisfy data types/formats and constraints defined while creating the table in the database. Once the record is added, a confirmation message of successful insertion of a record in the table must be provided to the user.

You need to do some self-study to understand how to do it. **Please have a look on the example of adding a student record discussed in Week 8,** you can find the link under Week 8 resources in unit site. **Note that the form in the provided example does not validate the data, you need to add the validation before you call INSERT query.** You need a web server to connect to a database. You can use freely available open-source web server package called 'XAMPP'. It has Apache web server, and you can use PHP scripting to connect to the database in your local machine. Some of these packages will come with their own database management system (e.g., MySQL, MariaDB, PostgreSQL, etc.). You can use either the in-built database system or MySQL you installed in your machine earlier. If you decide to use the in-built database, you may have to create the table you are trying to populate a record into. Please go through online tutorials and YouTube videos to learn more on developing a simple form and connecting it to a database.

After successful implementation of the form to add a record to the table, you are required to record a short presentation with screen capture where you run though how your form works. In the video, you must discuss how you implemented the form (what technology, tool and/or programming languages you used) and a

demonstration of how it works with a quick run through of your code. You must show an example of unsuccessful insertion (with missing mandatory fields or incompatible data) and one successful insertion. To summarize, in the video, you cover the followings:

a. What web server package and technologies/tools (e.g., database system, scripting language, etc.) you used to design your form

b. Show the state of the database table before you attempt to insert a record

c. An attempt to insert a record with incompatible or missing data [**unsuccessful insertion attempt**].

d. Show what message is displayed to the user and what happens to the database table

e. An attempt to insert a record with all required data in right forms/formats [**successful insertion attempt**]

f. Show what message is displayed to the user and what happens to the database table

You can upload the video in DeakinAir or YouTube and provide the link to the video presentation on the OnTrack Chat Message Box for the task. **Please do not forget to change the access setting of the uploaded video to grant view permission to someone with the link**. You do not have to make it public if you do not want.

IMPORTANT NOTE: It is okay to get help from the internet, but you need to understand how it works and be able to explain it. Please do not forget to acknowledge/cite the source if you use code from the internet. **Your tutor may invite you for a quick interview to discuss/explain your implementation and how it works.**

Submission Requirements:

Submit one PDF/WORD file describing how did you do this task and what did you learn. Please include all your code at the end of the report. Provide the link to the recorded video on the OnTrack Chat Message Box for this task.

Submission Due

The due for each task has been stated via its OnTrack task information dashboard.