F27WD Web Design and Databases

Coursework 2 Assignment
Due by: Wednesday, 27th March at 23:59

Logistics

You will do this assignment in pre-assigned groups of 3 or 4. The list of groups is available from the course Vision page, together with your group number. Please submit your coursework through Vision with the name *group_X,* where *X* is your group number. You must include the names of all group members in the coursework document. It is only necessary for one group member to submit the coursework, though all group members have a responsibility to make sure this has happened.

As part of the assignment, you must include **effort points** indicating how much work each member of the group put in. You have 40 points between the group and can assign these to each member as you like. In most cases, all group members will have worked equally hard, and so you will get 10 points each. If someone did not contribute at all, they will get 0 points and the other three members will get 13.3 points. This will be used to make marking fair. Students that have contributed less - or not at all - to a strong project will get fewer - or no - marks. Students that have had to do the work of four between three of them will have this taken into account. You should discuss these points and come to an agreement between all team members; in cases where you can't agree, please come and see me. If someone has been unable to contribute fully because of mitigating circumstances (illness, etc), you should still give them an effort mark reflecting how much effort they have been able to put in, even if this is not their fault. The affected student should submit an MC form to make sure they are not disadvantaged. If you are unable to get hold of one of your group, or someone assigned to your group is not intending to do the assignment, let me know.

Collaboration and Plagiarism

Coursework reports and code must be the group's own work. If some text or code in the coursework has been taken from other sources, these sources must be properly referenced. Failure to reference work that has been obtained from other sources or to

copy the words and/or code of another student is plagiarism[1] and if detected, this will be reported to the School's Discipline Committee. If a group is found guilty of plagiarism, the penalty could involve voiding the course.

Students must never give hard or soft copies of their coursework reports or code to students in another group. Students must always refuse any request from another student not in their group for a copy of their report and/or code. It is expected that all group members will have read and write access to the report and code for their group.

Sharing a coursework report and/or code with another group is collusion, and if detected, this will be reported to the School's Discipline Committee. If found guilty of collusion, the penalty could involve voiding the course.

Assignment

In this assignment, you are creating a database for a travel advisor website. In the first part of the assignment, you will create various tables that store the data that you need, and you will populate it with a range of instances. In the second part of the assignment, you will write SQL queries for retrieving data from the database. In the third part, you will use PHP to allow users easy access to the data from some queries via a web interface.

Part 1: Designing the database - 8 marks

Your database will have information about countries, cities and various types of interesting sites that can be visited. Users of your travel site can also sign up, and then they can provide ratings for any site they've been to.

For countries, you should record information about the country name, what the currency is, and whether a citizen of the UK, or any country of your choice, needs a visa to visit. For cities, you should record information about the city name and the country it is in. Sites will need a name and the city they are in, or closest to. Sites are also classified according to categories - for example: museum, park, ride, architecture, food and drink. For users, you need to record their name and email address. When a user enters a review, this is stored in a review table, which gives the user, the site and the rating they gave the site (scored from 0 to 5).

First of all, design a relational diagram that describes the tables you are going to use to store this information, which should include five tables: `Country`, `City`, `Site`, `User`, `Visit`. Remember to identify primary keys for every table, and all foreign keys.

Next, write SQL to create these tables in a MySQL database.

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[1] Heriot-Watt guidelines on plagiarism https://www.hw.ac.uk/students/studies/examinations/plagiarism.htm

Finally, write SQL code to populate these tables, focussing on any cities you like. You should include:
- at least five countries,
- at least ten cities (two or more cities from every country),
- one or two sites of interest for every city, categorised appropriately (use at least five different categories - you can use the ones suggested above or choose your own.)
- 4-5 users
- 20 user reviews in total for the users you have added.

Part 2 - Querying the database - 6 marks

Write the following SQL queries for the database.
- Return a list of all the cities that contain a museum (or substitute another kind of attraction if you don't have museum as a category).
- Return a list of all the cities you can visit without a visa. Use a JOIN to connect the tables.
- Rewrite the above query without using JOIN.
- Choose a site of interest from your list, and return a list of all the users who have visited it.
- Write two (or more!) extra queries. The more interesting and detailed you make the queries, the more potential marks. Make sure you explain what they are intended to do in your submitted document.

Part 3 - Querying through PHP - 6 marks

In order to run create the files below, you will first need to connect to the database. The code to do this is in `pdo.php`, which you can download from Vision. Include it in your files in the same way that it is included in `sites.php`.

- In class, we went through the file `sites.php`, which creates a picker for users to find site names and the cities they are in/near for all sites of a certain category. Update this file (which you can download from Vision) so that it also shows the country and whether or not you need a visa (this can be displayed in any way that makes sense - e.g., `Y` or `N`, `1` or `0`).
- Create a file `users.php` that presents a picker for users. For the submitted user, show their name and all visited sites, sorted by rating.
- Create a file `cities.php` that presents a picker for cities. For the submitted city, show all sites and the average user rating of those sites.

Submission

You should submit, by the due date, a zip file which contains:
1. A PDF file containing:
   - A relational diagram describing your design for your database
   - The SQL to implement this
   - SQL to input suitable data to your table
   - SQL for all the queries you have written and a brief explanation of what they do

- The PHP you create in part 3. For the first part, where you are extending an existing file, please highlight (bold, colour, etc.) the extensions you make.
- The effort points for all members of the group (including those who have not participated - their score should obviously be 0).

2. A text file (saved as `.sql`) containing all the SQL you have written.
3. `sites.php`, `users.php` and `cities.php`.

These should be submitted via the course webpage.