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Faculty of Engineering, Environment and Computing 4005CEM Database Systems



Assignment Brief

Module Title Database Systems	Individual	Cohort: Resit/Deferral	Module Code 4005CEM
Coursework Title (e.g. CWK1) Individual Report			Hand out date: 20.05.2022
Lecturer Dr. Diana Hintea			Due date and time: 04.07.2022 Online: 18:00:00
Estimated Time (hrs): Word Limit*: 1000	Coursework type: Individual Written Report		% of Module Mark 100%
Submission arrangement online via Aula: File types and method of recording: Word or PDF Mark and Feedback date (DD/MM/YY): 25.07.2022 Mark and Feedback method (e.g. in lecture, electronic via Aula): Aula rubric			

Module Learning Outcomes Assessed:

1. Understand the sources of data in society, how to collect such data, the problems that might occur in collecting and storing such data and the basic statistics that are routinely performed on it.
2. Model databases using techniques such as normalisation, entity relationship diagrams and a document-based approach.
3. Create, populate and perform basic access approaches on a database using SQL Database Management System (DBMS).
4. Analyse different types of data using tools such as R or Python.

Task and Mark distribution:

Write a 1000 words report on database design and its implementation based on the scenario below (100 marks)

Currently there is no database being used for managing the information in the [Car Rental Report](#) Excel spreadsheet. The report should include the following:

- A. An answer to the following question, together with a justification for the decision: In its current form, it is a traditional database. Should you keep it that way?
- B. The detailed process of implementing the database using SQL, including the normalisation of the table (should that be required), the identification of the attributes, the Entity-

Relationship Diagram, and the use of SQL commands in order to create and populate the tables with data.

C. The SQL code for the following queries together with an explanation of the code:

1. Find the supervisors of the branches which rented out SUVs – output the supervisor's ID and name.
2. Find the supervisors of the branches which had bills higher than 500 – output the supervisor's ID and name.
3. Find the supervisors of the branches which rented out cars in May 2021 – output the supervisor's ID and name.
4. Find the supervisors of the branches which handed out penalties – output the supervisor's ID and name.
5. Find the type of car that was rented the highest number of times – output the car type and the number of times.

D. A choice of 4 types of graphs suitable for analysing the information in the database, their implementation in Python (both the code and the output graph itself should be included in the report) and an explanation of what the graphs illustrate in your own words.

Notes:

1. You are expected to use the [Coventry University APA](#). For support and advice on this students can contact [Centre for Academic Writing \(CAW\)](#).
2. Please notify your registry course support team and module leader for disability support.
3. Any student requiring an extension or deferral should follow the university process as outlined [here](#).
4. The University cannot take responsibility for any coursework lost or corrupted on disks, laptops or personal computer. Students should therefore regularly back-up any work and are advised to save it on the University system.
5. If there are technical or performance issues that prevent students submitting coursework through the online coursework submission system on the day of a coursework deadline, an appropriate extension to the coursework submission deadline will be agreed. This extension will normally be 24 hours or the next working day if the deadline falls on a Friday or over the weekend period. This will be communicated via your Module Leader.
6. Assignments that are more than 10% over the word limit will result in a deduction of 10% of the mark i.e. a mark of 60% will lead to a reduction of 6% to 54%. The word limit includes quotations, but excludes the bibliography, reference list and tables.
7. You are encouraged to check the originality of your work by using the draft Turnitin links on your Moodle Web.
8. Collusion between students (where sections of your work are similar to the work submitted by other students in this or previous module cohorts) is taken extremely seriously and will be reported to the academic conduct panel. This applies to both courseworks and exam answers.

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9. A marked difference between your writing style, knowledge and skill level demonstrated in class discussion, any test conditions and that demonstrated in a coursework assignment may result in you having to undertake a Viva Voce in order to prove the coursework assignment is entirely your own work.
10. If you make use of the services of a proof reader in your work you must keep your original version and make it available as a demonstration of your written efforts.
11. You must not submit work for assessment that you have already submitted (partially or in full), either for your current course or for another qualification of this university, unless this is specifically provided for in your assignment brief or specific course or module information. Where earlier work by you is citable, ie. it has already been published/submitted, you must reference it clearly. **Identical pieces of work submitted concurrently will also be considered to be self-plagiarism.**

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