School of Computing

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Date Issued	Sept 2023
Code	DSD / M30232
Title	DSD CW1 (ITEM 1)

Schedule and Deliverables

Item	Value	Format	Deadline	Late/EC Deadline
ITEM 1	20%	Moodle - 1 File (PDF)	**24/11/2023	16:00**	08/12/2023	16:00

Notes and Advice

- The Extenuating Circumstances procedure is there to support you if you have had any circumstances (problems) that have been serious or significant enough to prevent you from attending, completing or submitting an assessment on time. If you complete an Extenuating Circumstances Form (ECF) for this assessment, it is important that you use the correct module code, item number and deadline (not the late deadline) given above.
- ASDAC are available to any students who disclose a disability or require additional support for their academic studies with a good set of resources on the ASDAC moodle site
- The University takes any form of academic misconduct (such as plagiarism or cheating) seriously, so please make sure your work is your own. Please ensure you adhere to our *Student Conduct Policy* and watch the video on Plagiarism.
- Any material included in your coursework should be fully cited and referenced in **APA 7** format. Detailed advice on referencing is available from the library, also see TECFAC 08 Plagiarism.
- Any material submitted that does not meet format or submission guidelines, or falls outside the submission deadline could be subject to a cap on your overall result or disqualification entirely.
- If you need additional assistance, you can ask your personal tutor, student engagement officer ana.baker@port.ac.uk, academic tutor eleni.noussi@port.ac.uk or your lecturers.
- If you are concerned about your mental well-being, please contact our Well-being service

READ THE ASSESSMENT

Important: Do not leave your submission to the last minute as your connection or the server might be slow, technical errors, ISP issues etc. Aim to submit a minimum one day before the deadline or in the morning. No submission will be accepted after 16:00. No Excuses.

We are aiming to reply to your questions in 5 working days.

General instructions

Read the tasks carefully and ask if you are unsure of what you are expected to deliver.

Assessment related questions will be answered via email/forums/Discord channel. Please do not send emails from your personal email account. You should use your university email account in order to recognize you. Please allow 5 working days for email replays.

Plagiarism and Poor Scholarship

This piece of work requires you to provide a database solution for a business scenario. You are expected to understand how to reference using the APA 7 system. Therefore, marks will bei deducted for poor scholarship and NO Marks will be awarded for the entire assignment if ANY part of it is found to be directly copied from printed / published work or from another student or generated by AI tools.

Use respected websites for your information gathering. E.g. technical sites such as PostgreSQL, Oracle, IBM DB2, MySQL technical pages. To avoid plagiarism, rewrite using your own words, but ensure where you have used the ideas of others you acknowledge the source within the text and provide the full source in the references at the end of the document (using Harvard APA 7 format). If you are not sure how to reference, use the information provided by the Library.

Presentation

Proofread your work for spelling, grammar and English prior to submission as clarity of expression is an important part of a research coursework. Please include page numbers and **your Group Number** in the header/footer of the document (on every page).

Anonymity of work

For a fair marking of your coursework, *please use only your Group Number and/or UP number on all documents* instead of your name.

Assessment marks

ITEM 1 (Group CW1 24/11/2023 - 20%)

- ○ Design a functional database that will address business needs along with associated Data Dictionary.

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Assessment Notes

Make sure that you are allocated to a group. You can check the groups [HERE.](HERE) You must belong to a group, and you cannot submit the CW as an individual. If you submit a CW as an individual, you will receive 0 marks.

Assessment Description

The design and approach of this assessment MUST be specifically related to the case study and not generalisation.

You are part of a team of junior database developers working for **Performance Systems PLC** and have been in post approximately 3 months. During this time you have started to have an understanding of the relational databases and been working on different existing database systems that have been developed by the company's Senior DBA (You can assume that Val would have this role).

One of the Company's clients has asked for a system to be developed for them. The Senior DBA does not have the time to devote to this project and so has asked you to work out the design, development, implementation and justification for him. He will then check it over before it is delivered to the clients.

The work will be an iterative process, conducted in 3 stages with different firm deadlines.

Therefore, the work you produce is for a Senior DBA and as such you can assume they understand more about databases than you do; however, make sure that you are clarifying odd or unclear aspects of your design through assumptions. Your report should take this into account, and you should not spend time describing or explaining topics that the senior DBA already knows (e.g. why you have an PK in a table) but you should analyse their importance and relevance in the given case study. This coursework follows the lifecycle of database implementation.

- The first stage is to try and identify the data and the organisational / linkage of the data for the system (Requirements). This we represent in an ERD.
- The second stage is an iteration of the requirements and producing the code (Implementation).
- The 3rd stage is to test and asses the database output against business requirements (Evaluation).

Case Study

Read carefully the case study before you are starting to propose a database solution.

ITEM 1 Group CW (20%) - Deadline 24/11/2023 @ 16:00 | 100 Marks

Requirements

1.1. Group member contribution statement - Please use this template and place it as the first page of your CW. **If all members agree that they have contributed equally, there is no need to insert a contribution statement**

    (Not Marked).

1.2. Using the information provided by the case study, create a simple diagram (digitally) where you present the initial identified entities and the relationship between them - direct and inferred entities - (no attributes). The diagram must be electronically created (e.g. not hand drawn). Hand drawn diagrams will receive 0 marks.

    (**10 Marks**)

1.3. Using the information given in the case study, draw an ***Entity Relationship Diagram*** (ERD) for the system. <u>You MUST resolve any M:M relationships</u> and include the Primary (PK), Foreign Keys (FK) and Composite Keys (PK/FK) - if any - in each of the tables, including all suitable attributes, data type and data size. The ERD must be electronically created (e.g. not hand drawn) and the design should be as realistic as possible (e.g. attribute names, data type/ size).

    (*50 Marks*)

1.4. Include any assumptions you have made in design. The assumptions should clarify ambiguous aspects of your design. Do not repeat the brief statements (e.g. "*Customers table will record customers*" or "*A customer can make more than one booking*")

    (**10 Marks**)

1.5. A complete Data Dictionary that will show all constraints and additional description if necessary. The Data Dictionary **must follow** this template. For obvious attributes, a description is not needed (e.g. user_name; user_email etc).

    (**20 Marks**)

Innovation & Excellence (10 Marks)

Awarded for extraordinary work that goes beyond minimum requirements (e.g. ready to implement database, out of the box thinking, coverage of business aspects that are very logical but were not listed into case study, extremely complex database design), with innovative aspects. Also appropriate CW layout, references grammar & punctuation and anything else that is outstanding.

The deadline for submission is 24/11/2023 @ 16:00. <u>Only one group member</u> needs to submit. If member 1 makes a submission and two min later member 2 submits again, the submission made by member 1 will be overwritten. The submission box will accept <u>only 1 file as PDF</u>.

Name your submission as GroupXX_CW1 where XX is your group number.

The PDF file should contain your contribution statement (if the contribution is not equal), Initial Entities, the complete ERD, Assumptions and Data Dictionary.

Submission checklist

- ☐ Contribution statement (PDF - Optional)
- ☐ Initial Entities - Direct and Inferred (PDF)
- ☐ ERD (PDF)
- ☐ Assumptions (PDF)
- ☐ Data Dictionary (PDF)

Please read carefully and submit ALL required elements.

No	Element	Description	Max Marks
1	Initial identified Entities	- Initial identification of the entities and the main relationships between them (no attributes)	10
1	ERD	- Meaningful entities with relevant attributes - Relevant and correct data type/size - Correct cardinalities, PKs and FKs - Logical and clear layout (no overlapping lines) - Normalised database - Crow's Foot notation (0 Marks for any other notation)	50
2	Assumptions	- Good set of justifications and assumptions - You can create a short narrative of your assumptions or bullet points	10
3	Data Dictionary	- Correctly lay outed data dictionary (use the template) - Correctly identified PKs, FKs, AKs - Justified constraints - Good descriptions (where necessary) - Tables are in 3NF	20
4	Innovation & Excellence	- Awarded for extraordinary work that goes beyond minimum scenario description and requirements, including but not limited to organised layout, grammar, references and anything else that is outstanding.	10
Please READ notes.		**TOTAL MARKS 100**	

Note[1]: You must submit only 1 file. 1 PDF with the 1.1, 1.2, 1.3, 1.4, 1.5
Note[2]: The ERD MUST be electronically generated and not hand drawn using pen and paper.
Note[3]: ERD MUST have Crow's Foot notation. Any other notation will not be accepted, and the submission will receive 0 marks.

Grades Distribution	
0%	0 is reserved for non-submissions, plagiarism or AI generated content

1% - 19%	Very poor attempt with limited understanding of relational databases. The submission may be missing required elements, have an incomplete or greatly incorrect ERD.
20% - 39%	Poor understanding of relational databases. The submission may have incorrect allocation of primary keys (PKs) and foreign keys (FKs), minimal coverage of the requirements, missing essential entities, or minimal attributes.
40% - 49%	Partial coverage of theoretical requirements. The submission may have some correct elements in the design but with room for improvement. There may be incorrect data types, some incorrect cardinalities, missing relevant attributes, or poor normalization.
50% - 59%	Mostly a good, logical design. All PKs, FKs, and cardinalities are correctly represented in the ERD. Sensible and justified assumptions are made, and the layout is well presented.
60% - 69%	The coursework demonstrates a complete and strong logical design, including accurate primary keys (PKs), foreign keys (FKs), and cardinalities. It also features a comprehensive discussion of the design assumptions. This submission showcases a high level of proficiency in creating an effective database solution.
70% +	Excellent and extensive coverage of the business case. The submission demonstrates good justification of decisions and an exceptional design of the ERD. It is almost like a "ready to be implemented" database.

The CW will be assessed against the following criteria:

- ❖ Rational and Logical aspects of relational databases and case study
- ❖ Suitable, sensible and complete set of attributes with appropriate data type and size
- ❖ Organisation and layout of designs and report document
- ❖ Discussion and justification of assumed elements
- ❖ Overall complexity of the proposed solution
- ❖ References, grammar & punctuation

Marks are released after 20 working days

(excluding weekends and bank holidays)