

**Assignment 2 – Marking Guide For Students**  
**COMP1140 S2 2022**

**School of Information and Physical Sciences, University of Newcastle**

**Marks:** out of 150

1. Reflection on your assignment 1 submission: briefly summarise your assignment 1 marker's comments and suggestions, describe major places you will improve in this submission on assignment 1 content. (10 marks)
2. Requirement Specification (including data requirements, transaction requirements and business rules). (10 marks)
  - \* Data Requirements (Rightness, Clarity and completeness)
  - \* Transaction Requirements
  - \* Business Rules
3. EER Diagram and Data Dictionary (15 marks)
  - \* EER Diagram (Rightness)
  - \* Data Dictionary (Rightness and completeness)
4. The relational model mapped from EER (**i.e., before normalisation**) (70 marks)
  - \* Mapping must be done on a right EER (If your EER has errors, e.g., if 3 entities are missing, the marks allocated to the 3 entities will be deducted)
  - \* Mapping of each relation & attributes
  - \* Mapping of each relationship
  - \* Mapping must be according to the rules stated in the textbook and lectures and adopted by the course.

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*Note: some flexibility is accepted, e.g.,*

*If 2 FKs are needed to refer to 2 similar tables, both following 2 ways are ok*

- *use 2 different FKs. E.g.:*
  - *FK MemberIDStudent references MemberStudent(MemberID)*
  - *FK MemberIDStaff references MemberStaff(MemberID)*
- *use one FK to reference to 2 tables*

*For sup-sub, like Member-Staff-Student, both mappings are ok:*

- *Keep 3 tables (including Member, Staff, Student), but there must be FK in Staff and Student to refer to Member.*
- *Keep 2 tables (including MemberStaff, MemberStudent). In this case, must make sure the FK to other tables are right (E.g., must have 2 FK in Loan to refer to MemberStaff and MemberStudent)*

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\* To achieve full marks, make sure to use foreign key wherever it is needed during mapping, and an action must be defined when specifying referential actions for a FK (e.g., FOREIGN KEY(StaffId) REFERENCES *MemberStaff*(StaffId) ON UPDATE CASCADE ON DELETE NO ACTION).

5. Normalized Relational Schema in DBDL. Ensure that normalisation steps are shown if any. (40 marks)

- Discussion of functional dependencies, judgement of what normal form that each relation is in, and process of normalising up to BCNF for all relations (e.g., if a relation is in 2<sup>nd</sup> normal form, give your reason why it is in 2<sup>nd</sup> form, then show all the process to normalise it up to BCNF).
- At least 2 cases of normalisation process are shown to demonstrate your understanding of normalisation (The example could be from any normal form to up to BCNF, e.g., from first normal form up to BCNF, or from third normal form up to BCNF. In case of not being able to identify lower normal form, use of some assumption of functional dependency is acceptable in which case you need to state that you are making the assumption to demonstrate the normalisation process to avoid the deduction of marks).
- For most of the relations that are already in BCNF and have no need to go through normalisation process, you need to give your reasoning why they are in BCNF.
- **Finally, you need to give a complete list of all the relations that are in BCNF.**

**NOTE:** Do not mix section 4 and 5 together in your answer.

Section 4 is only the complete list of unnormalized relations in DBDL from your EER. Section 5 is the normalisation process and the complete list of Normalised relations in DBDL

6. Report Writing (5 marks)

style, grammar, and make sure all letters and drawings are legible, etc.