A picture containing logo

Description automatically generated **Semester 1 HIT234**

**Assignment 2**

**Darwin & Sydney Students**

**Group Assignment (3-4)**

**Value:**

**Part A** 15% ER diagram

**Part B (20%)** 10% map the ER diagram to 3NF

**10%** Normalisation

**Submission details**:

For Internal and External students: submission is via Learnline. Instructions on how to submit the assignment is located under Assessments / Guidelines.

This assignment is to be done in groups of threes (two in a group is also acceptable). Please submit both parts of the assignment together.

In this assignment you will identify a business situation and design a database for it. See List of choices.

**Part A: Draw the ER diagram**

Identify the business situation (a small/medium size business) that you wish to design a database for. The situation needs to be a real life one (not an imaginary company for example) and ideally be something you are interested in or familiar with. Topics might include hobbies (cricket teams, online games), associations (hockey clubs, childcare centre), work-related concerns (fishing boats, student enrolments, art gallery) or other interests (Star Wars).

Try to pick an application that is relatively substantial (one that has too many customers and interact with the environment such as government/suppliers/teachers/companies/etc, but not too enormous. If you decide to choose your own business situation (i.e if you want to create a new business) you will need to discuss with your lecturer if it is appropriate.

If you are unable to come up with your own you have the option of choosing from a list of choices at the end of the document. No group can choose the same case, unless there is sufficient difference in the case (Remember it will need to be based on a real practical situation).

For example, when expressed in the ER diagram, you might want your design to have a range of entities (more than 4), and a similar number of relationships.

You should certainly include different kinds of relationships (many-one, many-many) and different kinds of data (Alphanumeric, Numbers, etc.), as well as attribute types.

Please hand in the following:

* Describe the situation (the business you choose). Your description should be brief and relatively informal (maximum length 1 A4 page). If there are any unique or particularly difficult aspects of your proposed application, please point them out. Your description will be marked only on suitability and conciseness
* Include a list of business rules (**can make assumptions as long as it is logical**)
* Draw an ER diagram for your proposed database. You need to show attributes, primary keys, and relationships (needs to use Chen and Crows feet notation)

**Part B: Map the ER diagram to 3NF & Normalisation**

**1-Map the ER diagram to 3NF**

* Translate your ER Diagram into a schema of normalised tables. These must be in at least 3rd Normal Form (database schema)

**2-Normalisation**

Use a flat structure table include all attributes:

* Determine functional dependencies
* Use 3nf to develop the relations, show as
  + Text notation

**List of choices**

1. Fast food outlet - food ordering

2. Gym trainer - managing clients - exercise routines

3. Enrolment system

4. IT LOGIT system

5. Taxi system - recording car and journey of a passenger

6. Childcare centre

7. Sport club - tracking teams

8. Investment - tracking buy and selling shares and investments

9. Real estate

10. Hotel

11. Hospital management system database project

12. Health care organization database project

13. Restaurant management database project

14. Art gallery management database project

15. School behaviour management project

16. Construction project