COMP40725 Lab Book 3
Entity Relationship Modelling

- Create a folder called *Lab3* in your *COMP40725* folder. You may wish to have this inside a folder that is being synced by Google Drive
- Download the editable version of the lab document and save it as
  Lab3_studentNumber_firstName_LastName.doc

Note: To complete this lab book, multiple iterations of your ER diagram will need to be included at different stages of the design process. A single completed ERD is not sufficient.

Any diagrams must be created using www.draw.io and the Chen notation must be used. The diagrams must be included in this word document for submission. When you have your diagram drawn using draw.io, this can be downloaded as a png image to include in this Word document via:

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File > Download As > Portable Network Graphic (.png)
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You should also save it as a .xml file for your own reference.

It is expected that the diagrams will include Entities, Relationships, Cardinality and Optionality as in the sample below. To draw these diagrams, the "Rectangle", "Rhombus", "Line", "Link" and "Simple Text" elements in the General section of www.draw.io are all that is needed. E

Try drawing this sample to get you started:

Description
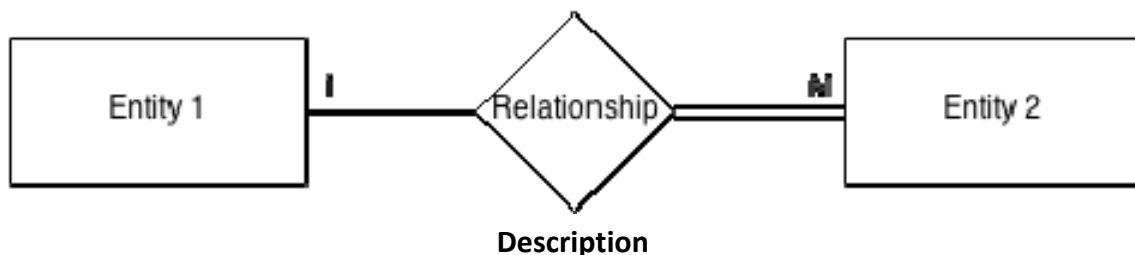
A publishing company produces scientific books on various subjects. Authors, who can specialise in numerous subject areas, write the books. The company employs editors who, not necessarily being specialists in a particular area, each take sole responsibility for editing one or more publications. A publication covers essentially one of the specialist subjects and is normally written by a single author. When writing a particular book, each author works with on editor, but may submit another work for publication to be supervised by other editors. To improve their competitiveness, the company tries to employ a variety of authors, more than one author being a specialist in a particular subject.

How to approach this practical
1) Try to draw the entity example above with Draw.io
2) Read the Bus Company example carefully in lecture 5
3) Perform each question in sequence do not jump ahead
[Question 1 to 7 are explained in further detail in the slides for Lecture 4/5]

Q1. Identify all the **<u>potential</u>** entities required for designing a database for the above problem.

[INSERT ANSWER HERE]

Q2. Remove duplicate entities. For each entity you remove from Q1, include an explanation of why you decided to remove it

[INSERT ANSWER HERE]

Q3. List the attributes for each entity

[INSERT ANSWER HERE]

Q4. For each entity outline its primary key

[INSERT ANSWER HERE]

Q5. Define the Relationships. A section of an ER diagram drawn using www.draw.io will be required for each – see example above.

[INSERT DIAGRAM(S) HERE]

Q6. Describe the cardinality and optionality of the relationships

[INSERT DIAGRAM(S) HERE]

Q7. Remove redundant relationships. For each relationship you remove, explain why you think that relationship is redundant.

[INSERT DIAGRAM(S) HERE]

Q8. Draw a complete ER diagram combining all of the work you have done above.

[INSERT DIAGRAM HERE]

Q9. Check any M-M relationships to see if they are hiding a new entity. If so, fix your ER diagram to reflect the change and include a brief explanation of why you changed your diagram.

[INSERT FINAL DIAGRAM HERE]