### **Programming Assignment**

Using the relations created in unit 1, create an ER diagram that shows the entities, attributes, and relations, of our library system. You should use a graphics tool or Database Modeler tool to create a diagram. A free tool that can be used is DIA, which is available at <http://dia-installer.de/download/index.html.en>.You can also use any tool that can produce an standard ER diagram as output. You tool must be capable of displaying the standard format of entities and relationships as is illustrated in the Petersen text. Some valid tools include DBModeler, Microsoft Visio, PowerPoint, OpenOffice Draw, OpenOffice Impress. **Whichever tool you use you must be able to copy your results into a Word document for your final submission.**

If you use either OpenOffice Draw or Impress you will need to get ‘arrows’ for your connecting lines that have the standard ‘crows’ foot notation used in ER diagrams.

In the library, there is a reporting relationship between the head librarian and other librarians that report to the head librarian. This is known as a Unary relationship. You must be able to both describe and model this relationship within your relation and within your entity relationship diagram.

Your assignment must include the following:

- an entity relationship (ER) diagram that defines the following

relations and the relationships between them:

* Book
* Borrower
* BookLended
* Librarian

- the following defined entities in the diagram and make sure that the entities define the attributes appropriate for each entity:

* Book
* Borrower
* BookLended
* Librarian

- each relationship is labeled with the cardinality of the relationship

- the unary librarian relationship is defined?

**Be sure to copy images and paste them directly into your document.**