



# Northeastern University

## CS 5200 Homework 1 (Chapter 12 Connolly & Begg)

Each question is worth 10 points each. Convert the following textual description to an entity-relationship diagram in UML notation. Please spend time differentiating between entities, attributes, relationships and values of attributes. If you are identifying a strong entity - make sure you identify a primary key for it.

1. A book has a title, an ISBN number (a unique international book number), a publisher, a language it was written in, the total number of pages and an author.
2. A book has a title, an ISBN number, a publisher, a language it was written in, and the total number of pages. An author has a name and a place of origin. An author writes a book. A book is written by one author and an author writes 1 to many books.
3. A book has a title, an ISBN number, a language it was written in, and the total number of pages. An author has a name and a place of origin. An author writes a book. A book is written by one author and an author writes 1 to many books. A publisher has a name, a city and a country. A publisher releases a book on behalf of the book's author. A publisher can release many books but a book is released by 1 publisher.
4. A book has a title, an ISBN number, a language it was written in, and the total number of pages. An author has a name and a place of origin. A publisher has a name, a city and a country. A book is written by 1 to many authors.. A publisher releases a book. A publisher can release 1 to many books but a book is released by one publisher.
5. The world is composed of 7 continents. A continent has a name and a current population. The names of the continents are: Africa, Antarctica, Asia, Europe, Australia/Oceania, North America and South America.
6. The world is composed of 7 continents. A continent has a name and a current population. A country has a name, and a current population. Each continent is composed of 0 to many countries. A country may be situated on 1 to many continents.
7. The world is composed of 7 continents. A continent has a name and a current population. A country has a name, and a current population. There are also languages that are spoken in the world. Each continent is composed of 0 to many countries. A country may be situated on 1 to many continents. A country has 1 to many official languages. A language may be an official language for 0 to many countries.
8. Each house in a development contains 8 rooms. Each room contains a location (within the house) and a **unique name**. A room may be classified as a bedroom, a bathroom or a common room. A room can be classified as only 1 type of room. A specific room type can be associated with many different rooms in the house.
9. Each house in a development contains 8 rooms. Each room contains a location (within the house) and a **name**. The location of the room uniquely identifies the room within the house. A room may

- be classified as a bedroom, a bathroom or a common room. A room can be classified as only 1 type of room. A specific room type can be associated with many different rooms in the house.
10. Each house in a development contains 8 rooms. Each room contains a location (within the house) and a **name**. The location of the room uniquely identifies the room within the house. A room may be classified as a bedroom, a bathroom or a common room. A room can be classified as only 1 type of room. A specific room type can be associated with many different rooms in the house. Each room has a collection of furniture. Each furniture has a type, a color and a location (in the room). The furniture types are: sofa, chair, bookcase. A furniture can have only 1 furniture type but there may be many instances of a furniture type in a room. Each bookcase you track the number of shelves it has, the height, its width and its depth. For a chair you track if it is a rolling chair. For a sofa you track its height and its width and depth.

### **Homework submission**

Create a pdf file named hwk1lastnamefi.pdf, where lastname is your last name and fi is your first initial. The pdf file should contain 10 images labeled 1-10.