

## CPSC 210 – Extracting a Class Diagram Notes

1. Find a class (e.g., X) to represent in the UML Class Diagram
2. Inspect the class (e.g., X) for fields that refer to other classes (e.g., Y and Z) in the application
3. Add each class found in Step #2 to the UML Class Diagram (e.g., Y and Z)
4. For each field found in Step #2 (e.g., assuming there is one field of type Y):
  - a. how many objects (of type Y) can that field hold? Answering this question helps indicate what the cardinality for the association (e.g., from X to Y) can be. For instance, if the field is declared to hold a Collection of objects of type Y, the cardinality can be n (or 0..n or 1..n depending on other constraints).
  - b. is the field initialized with values in the constructor of the class you are inspecting? Answering this question helps determine if there is a minimum cardinality for the association (e.g., from X to Y).
  - c. are there methods that can change the cardinality after it is set (if it is) in the constructor? Answering this question helps determine the overall range of the cardinality for the association (e.g., from X to Y).
  - d. visit the class at the end of the association (e.g., Y). Can this class refer to an object of type X? If so, then the association from X to Y can be navigated in both directions.
  - e. consider what the association represents. Does it represent a whole-part relationship? If so, change the association to an aggregation.
5. Do steps 2-4 for every class you end up adding to the UML Class Diagram.