# Exercise: Basic Class and Sequence Diagrams

March 20, 2018

## Purpose

Check that you know how to read and write basic class and sequence diagrams.

## Exercises

1. Draw a class diagram that shows a class **Party**, a class **Food**, a class **Entertainer** and a class **Venue**. Each of **Food**, **Entertainer** and **Venue** should have an integer attribute cost and getter and setter methods for it. **Party** should have an operation with selector **getTotalCost.** (What should the signatures of these operations be?) For now, do not show associations between the classes.
2. It is decided that the **getTotalCost** operation should be implemented by the object of class **Party** asking an object of each class **Food**, **Entertainer**, **Venue** for the value of its cost attribute, summing them and returning the result. Draw a sequence diagram that shows this behavior being invoked by an actor.
3. Since objects of our classes communicate, there should be associations among the classes in the class diagram. Add suitable associations. Show navigability and multiplicities.
4. Next consider a modification of the design in which, instead of containing a fixed cost, a **Venue** object will calculate its cost on request, using information about the timing of the event. Suppose that a **Party** can report its date, start time and duration. Consider two possible designs:
   a. The relevant information is passed to **Venue** along with the request to calculate a cost; or
   b. The **Venue** object will take a no-argument request for a cost as usual, but then will ask for the extra information it needs.

   Make versions of, or annotate, your diagrams to show the difference between the two options. Take special care with the second. What are the pros and cons of each design?