## Refactoring and Design Pattern List

# Considered Patterns

MVC

The MVC design pattern was considered for the front end of the Gym Management System but was not fully implemented due to challenges using React. Since the React framework contains render methods that are coupled with Components, separating the model from the view becomes more difficult. The existing code does separate the controller from the model and view, and there was some restructuring of the JavaScript classes (extracting the Modal) done during this increment to move towards the MVC pattern.

Singleton

The singleton pattern was considered for the backend rest service but was ultimately not implemented due to challenges with using it in the OSGi framework. Since OSGi instantiates classes using a dependency injection framework (such as blueprint), the constructor must be made public. This essentially makes the singleton pattern not possible, since the constructor would have to be private with a “getInstance” method.

# Implemented Patterns

Factory

The Data Handler classes create objects such as Trainers and Customers from the data that is returned from the backend database. The creation of the objects was extracted into factory methods.