

1. Consider the text's example for the Strategy pattern.
 - a) Create a new algorithm for quacking behavior ... talking. Name this class Italk.
 - b) Create a sequence diagram that shows the messages sent for the code below.
 - c) Create an object diagram to show the objects that exist immediately after the last statement below.

```
Duck m = new DecoyDuck();
m.performQuack();
m.setQuackingBehavior(new Italk());
m.performQuack();
```

Submit the Italk java class, and the sequence and object diagrams.

2. Consider the Strategy article in Wikipedia https://en.wikipedia.org/wiki/Strategy_pattern#Java, and its Car example (found in the section Strategy and open/closed principle)

- a) Create the class diagram.
- b) Create a sequence diagram for this code (appears in the example's main method):

```
Car suvCar = new SUV();
suvCar.applyBrake();
suvCar.setBrakeBehavior( new Brake() );
suvCar.applyBrake();
```

Submit the class and sequence diagrams.

.....

When you show an object in a sequence or object diagram show it according to the type used when it was instantiated. For example, if the object was created using `new Italk()` then show the object as an `Italk` object and not a `QuackBehavior` object.

In object diagrams remember to use lines to show the connections between objects.

In sequence diagrams show objects at the time they are instantiated and include all activation boxes. Messages are directed lines and must be named.

In class diagrams show the three compartments for each class: class name, fields (omit data types), and method names. Include navigability and multiplicities for each association.

All diagrams must be created using a software tool. The diagram must have a neat appearance, be legible, and be submitted as a pdf file.

All coding is done in Java. Each Java class you have coded must use the `@author` tag showing yourself as the author. When code is submitted it is the `.java` file (the source code) that is submitted.

You are expected to answer all questions above, but it may be the Teaching Assistant only marks some of your answers.