Design Pattern Project:

For this project students will create a duck simulator.

1. **First they have to** create a Quackable interface. Some Ducks that implement Quackable Interface Mallard RedHead DuckCall RuberDuck
2. After that they will create an adapter to adapt a goose to a duck. Quack will sound honk from adapter
3. Next for some research purpose we want to count the number of quacks of a duck. They will create a decorator that gives the ducks this new behavior by wrapping them with a decorator object.
4. Create a duck factory and a counting duck factory.
5. To create a flock of ducks use a Composite Pattern that allows us to treat a collection of objects in the same way as individual objects (use iterator).
6. We also need to track individual ducks. Can you give us a way to keep track of individual duck quacking in real time? (use observer)