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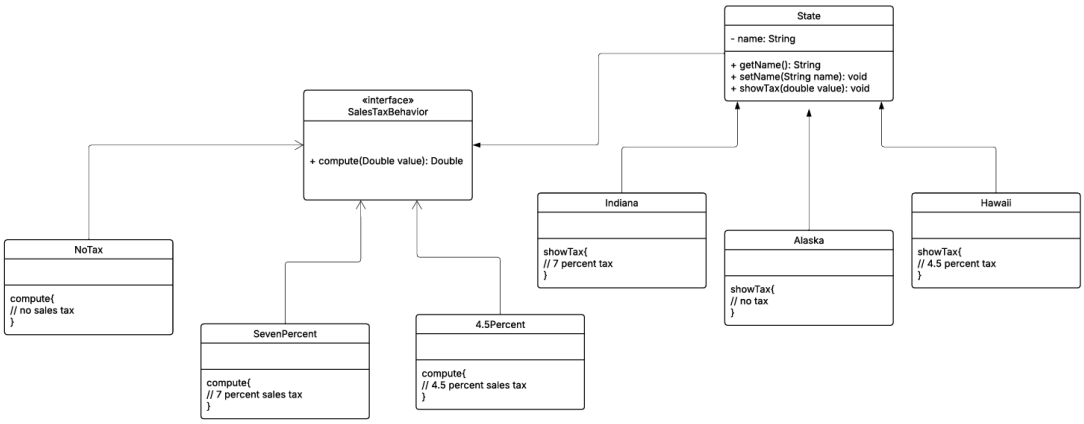
Object Oriented Software Methods

Assignment 1

February 3, 2025

Problem 1 (Part B):



Problem 2:

1. MallardDuck represents a IS-A relationship because it is denoted by a rectangle-top arrow in the UML class diagram and it is a subclass of the base class.
2. RedheadDuck represents a IS-A relationship because it is denoted by a rectangle-top arrow in the UML class diagram and it is a subclass of the base class.
3. RubberDuck represents a IS-A relationship because it is denoted by a rectangle-top arrow in the UML class diagram and it is a subclass of the base class.
4. DecoyDuck represents a IS-A relationship because it is denoted by a rectangle-top arrow in the UML class diagram and it is a subclass of the base class.
5. FlyBehavior represents a HAS-A relationship because the base class has the instance variable that is the object of the FlyBehavior class; it is also denoted by a regular arrow.

6. QuackBehavior represents a HAS-A relationship because the base class has the instance variable that is the object of the QuackBehavior class; it is also denoted by a regular arrow.
7. Quack represents a IS-A relationship because it is denoted by a rectangle-top arrow in the UML class diagram and it is a subclass of the base class.
8. Squeak represents a IS-A relationship because it is denoted by a rectangle-top arrow in the UML class diagram and it is a subclass of the base class.
9. MuteQuack represents a IS-A relationship because it is denoted by a rectangle-top arrow in the UML class diagram and it is a subclass of the base class.

Problem 3: