Problem 1:


```
                        <<interface>>
                        SalesTaxBehavior

                      +compute(Double value):
                              Double
```

```
NoTax                    SevenPercent              FourFivePercent

compute {                compute {                 showTax {
// No sales tax }        // 7% sales tax }         // 4.5% sales tax }
```

```
                                                  State

                                                  -name: String

                                                  +getName(): String
                                                  +setName(String name): void
                                                  +showTax(double value): void
```

```
Alaska                   Indiana                   Hawaii

showTax {                showTax {                 showTax {
// 0% sales tax }        // 7% sales tax }         // 4.5% sales tax }
```
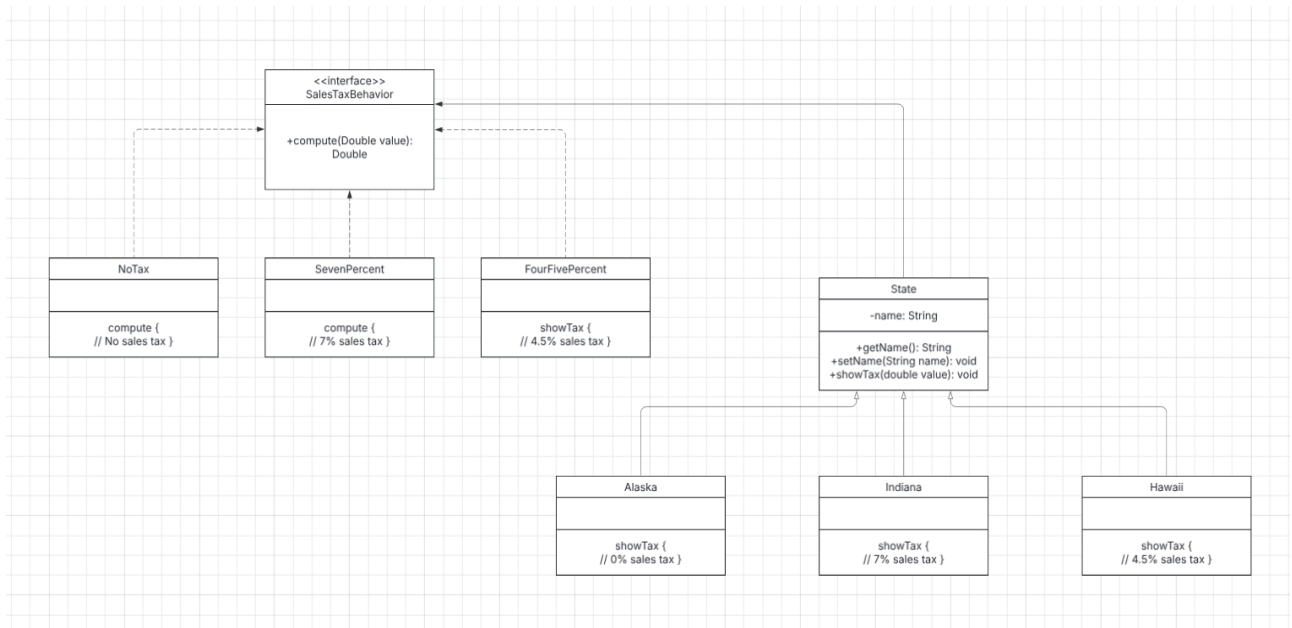
Problem 2:

1. IS-A, a MallardDuck is a Duck
2. IS-A, a RedheadDuck is a Duck
3. IS-A, a RubberDuck is a Duck
4. IS-A, a DecoyDuck is a Duck
5. HAS-A, some ducks can fly
6. HAS-A, some ducks can quack
7. IS-A, Quacking is a part of QuackBehavior
8. IS-A, Squeaking is a QuackBehavior
9. IS-A, Mute is a QuackBehavior

Problem 3:

Auctioneer

minimumBid: double
bidders: List<Bidder>

registerBidder(Bidder bidder): void
removeBidder(Bidder bidder): void
notifyBidders(): void
acceptBid(Bidder bidder, double
amount): void

<<interface>>
Subject

+addObserver():
+removeObserver():
+notifyObserver():

<<interface>>
Bidder

update(double newBidAmount): void
payBid(): void

InPersonBidder

update {
// updates the new bid }
payBid {
// pays the bid if accepted }

OnlineBidder

update {
// updates the new bid }
payBid {
// pays the bid if accepted }

PhoneBidder

update {
// updates the new bid }
payBid {
// pays the bid if accepted }