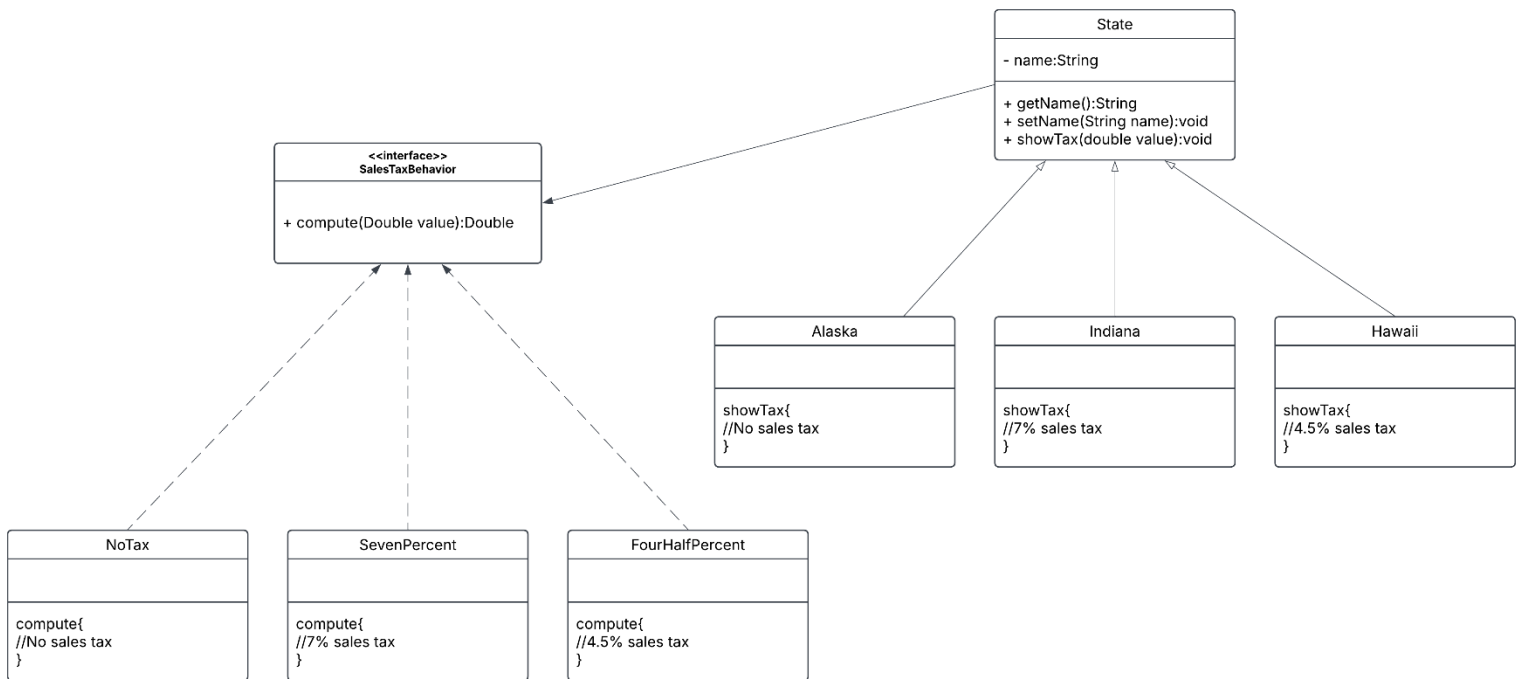# C322 Assignment 1

1)

2)

1 is an IS-A relationship because the MallardDuck object extends the Duck class.
2 is an IS-A relationship because the RedheadDuck object extends the Duck class.
3 is an IS-A relationship because the RubberDuck object extends the Duck class.
4 is an IS-A relationship because the DecoyDuck object extends the Duck class.
5 is a HAS-A relationship because each duck object has a related FlyBehavior.
6 is a HAS-A relationship because each duck object has a related QuackBehavior.
7 is an IS-A relationship because the Quack class implements QuackBehavior.
8 is an IS-A relationship because the Squeak class implements QuackBehavior.
9 is an IS-A relationship because the MuteQuack class implements QuackBehavior.

3)

<<interface>>
Subject

+ registerObserver()
+ removeObserver()
+ notifyObservers()

<<interface>>
Observer

+ update(Double value):void

<<interface>>
PayElement

+ pay():void

Auctioneer

- minBid:Double

+ registerObserver()
+ removeObserver()
+ notifyObservers()

+ setMinBid(Double value):void
+ getMinBid():Double
+ bidsChanged()
+ acceptBid()

inPersonBidder

update()
pay() {
//pays through in-person channel
}

onlineBidder

update()
pay() {
//pays through online channel
}

phoneBidder

update()
pay() {
//pays through phone channel
}