Problem 1: Part B

State
- name : String # SalesTaxBehavior : SalesTaxBehavior
+ getName() : String # setName(String name) : void + calculateTax(double value) : double + setSalesTaxBehavior(SalesTaxBehavior salesTaxBehavior) : void

<<Interface>> SalesTaxBehavior
compute()

NoTax
compute()

IndianaTax
compute()

HawaiiTax
compute()

Alaska
+ Alaska()

Indiana
+ Indiana()

Hawaii
+ Hawaii()

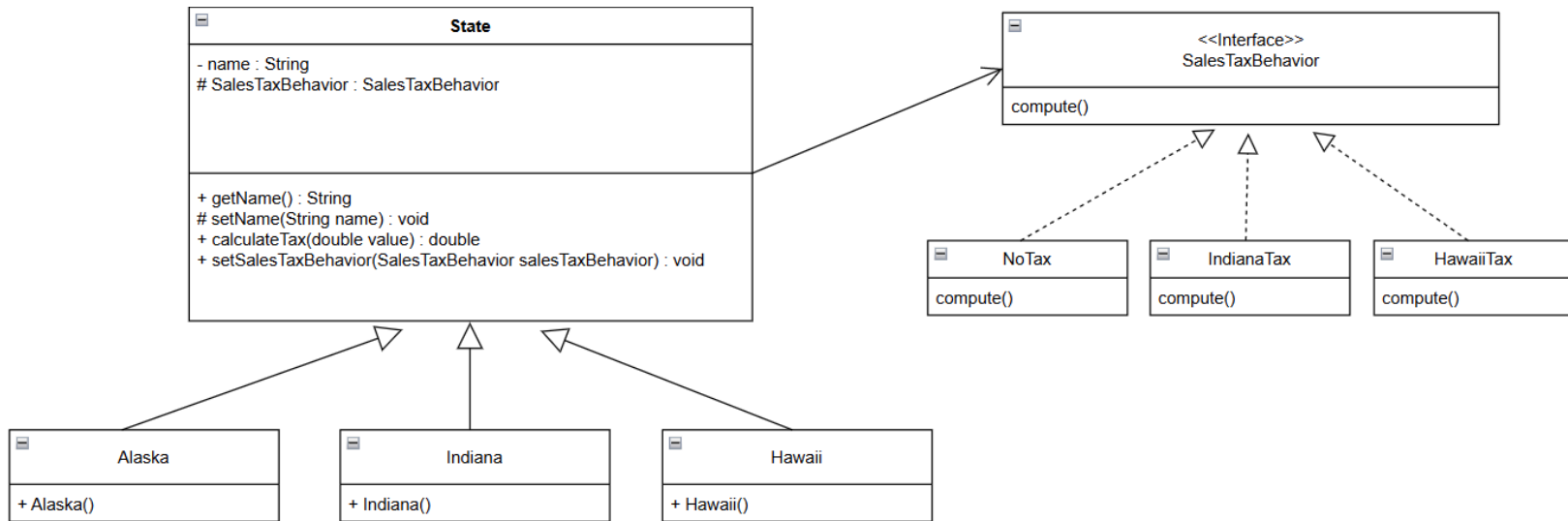## Problem 2: HAS-A and IS-A

1. IS-A
   a. Mallard duck is a duck
2. IS-A
   a. Redhead duck is a duck
3. IS-A
   a. Rubber duck is a duck
4. IS-A
   a. Decoy duck is a duck
5. HAS-A
   a. Every duck has a fly behavior
6. HAS-A
   a. Every duck has a quack behavior
7. IS-A
   a. Quack is a quack behavior
8. IS-A
   a. Squeak is a quack behavior
9. IS-A
   a. Mute is a quack behavior

Problem 3: The Observer Design Pattern

<<interface>> Bidder

- name : String

+ update(double minBid): void
+ placeBid(double amount): void
+ payBid(double amount): void

<<interface>> Auctioneer

- minimumBid: double
+ bidders: List<Bidder>

+ setMinimumBid(bid: double): void
+ attach(bidder: Bidder): void
+ detach(bidder: Bidder): void
+ notifyBidders(): void
+ acceptBid(bidder: Bidder, amount: double): void

InPerson

+ update(double minBid): void
+ placeBid(double amount): void
+ payBid(double amount): void

Online

+ update(double minBid): void
+ placeBid(double amount): void
+ payBid(double amount): void

Phone

+ update(double minBid): void
+ placeBid(double amount): void
+ payBid(double amount): void