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图示

AI 生成的内容可能不正确。

Problem2:

1: MallardDuck → Duck : This is an IS-A relationship because MallardDuck inherits from Duck.

2: RedheadDuck → Duck : This is an IS-A relationship because RedheadDuck inherits from Duck.

3: RubberDuck → Duck : This is an IS-A relationship because RubberDuck inherits from Duck.

4: DecoyDuck → Duck : This is an IS-A relationship because DecoyDuck inherits from Duck.

5: Duck → FlyBehavior : This is a HAS-A relationship because Duck has a FlyBehavior instance, allowing it to change flying behavior dynamically.

6: Duck → QuackBehavior : This is a HAS-A relationship because Duck has a QuackBehavior instance, allowing it to change quacking behavior dynamically.

7: Quack → QuackBehavior : This is an IS-A relationship because Quack implements QuackBehavior.

8: Squeak → QuackBehavior : This is an IS-A relationship because Squeak implements QuackBehavior.

9: MuteQuack → QuackBehavior : This is an IS-A relationship because MuteQuack implements QuackBehavior.

Problem 3 ：

图示

AI 生成的内容可能不正确。

Comment： I designed this auction system following the Observer Pattern. The auctioneer acts as the subject, notifying all bidders (observers) whenever a new bid is placed. Each bidder can place bids and respond to updates accordingly.