CS2365-HW4-Spring2022:

1. Define a class named Payment that contains an instance variable of type double that stores the amount of the payment and appropriate get and set methods. Also, create a method named paymentDetails that outputs an English sentence to describe the payment amount.

   Next, define a class named CashPayment that is derived from Payment. This class should redefine the paymentDetails method to indicate that the payment is in cash. Include appropriate constructor(s).

   Define a class named CreditCardPayment that is derived from Payment. This class should contain instance variables for the name on the card, expiration date, and credit card number. Include appropriate constructor(s). Finally, redefine the paymentDetails method to include all credit card information.

   Define a class named PaymentTest class that contains the main() method that creates at least two CashPayment and two CreditCardPayment objects with different values and calls paymentDetails for each. (5 pts)

2. Design a Ship class that the following members:
   • A field for the name of the ship (a string).
   • A field for the year that the ship was built (a string).
   • A constructor and appropriate accessors and mutators.
   • A toString method that displays the ship's name and the year it was built.

   Design a CruiseShip class that extends the Ship class. The CruiseShip class should have the following members:
   • A field for the maximum number of passengers (an int).
   • A constructor and appropriate accessors and mutators.
   • A toString method that overrides the toString method in the base class. The CruiseShip class's toString method should display only the ship's name and the maximum number of passengers.

   Design a CargoShip class that extends the Ship class. The CargoShip class should have the following members:
   • A field for the cargo capacity in tonnage (an int).
   • A constructor and appropriate accessors and mutators.
   • A toString method that overrides the toString method in the base class. The CargoShip class's toString method should display only the ship's name and the ship's cargo capacity.

   Demonstrate the classes in a program (ShipTest) that has a Ship array. Assign various Ship, CruiseShip, and CargoShip objects to the array elements. The program should then step through the array, calling each object's toString method. (5 pts)