CS 46A Exam 2

Fall 2022

Problem 1

Open project 1_TotalCost and complete the main() method of class **CostCalculator** according to the specified steps. After completed, the program will calculate the total cost for purchasing a vehicle from a dealer in San Jose, CA, who charges a total sales tax of 8% and a total fee of $450.70 .

You can declare additional variables if you want to.

Do not use try and catch statement or any parse methods.

Some constants are provided, and no magic numbers are allowed except number 2 in the output format specifiers. According to our style requirements, number zero is not a magic number.

Sample run #1
```
Enter the price: 25000
The vehicle price is $25000.00.
The sales tax is $2000.00.
The total fee is $450.70.
The total cost is $27450.70.
```

Sample run #2
```
Enter the price: Q
Invalid price: Q
Enter the price: Exit
Invalid price: Exit
Enter the price: -45050
Price must be positive: -45050.0
```

Sample run #3
```
Enter the price: Ford
Invalid price: Ford
Enter the price: Jeep
Invalid price: Jeep
Enter the price: Tesla
Invalid price: Tesla
Enter the price: 42690
The vehicle price is $42690.00.
The sales tax is $3415.20.
The total fee is $450.70.
The total cost is $46555.90.
```

Codecheck link for Problem 1

Problem 2

A rectangle is perfect if the product of its x and y coordinates equals its area. For example, a rectangle at (10, 20) with an area of 200 is a perfect rectangle, since 10 * 20 equals 200.

Open project 2_RectangleArrayList and complete class **RectangleArrayList** according to the specified steps. Then run the main() method of class **RectangleArrayListTester** before submitting class **RectangleArrayList** to Codecheck.

Codecheck link for [Problem 2](#)

Problem 3

Open project 3_TwoDArray and complete class **TwoDArray** according to the specified steps. Then run the main() method of class **TwoDArrayTester** before submitting class **TwoDArray** to Codecheck.

Codecheck link for [Problem 3](#)

Problem 4

A rectangle is excellent if the following conditions are all true:
> y is not 0
> height is not 0
> the remainder of x divided by y equals the remainder of width divided by height

Open project 4_RectangleArray and complete class **RectangleArray** according to the specified steps. Then run the main() method of class **RectangleArrayTester** before submitting class **RectangleArray** to Codecheck.

For the constructor and each method, you need to write both the header and the body. You can look at the tester program to find information about the parameters.

Javadoc is required.

The toString() method has been completed for you already.

Codecheck link for [Problem 4](#)