

CISC231 Foundations of Computing II

Assignment 1 (100 pts):

Create a folder named *yourlastname_yourfirstname_hw1*. (10 pts)

Problem 1 (20 pts)

Please see the class below and explain why each line of code is correct or incorrect. Write your answers as comments. Fix the errors in the code and add this class file to your folder.

```
public class Problem1 {  
    public static void main(String[] args) {  
        int j, i = 1;  
        float f1 = 0.1; float f2 = 123;  
        long l1 = 12345678, l2 = 88888888888;  
        double d1 = 2e20, d2 = 124;  
        byte b1 = 1, b2 = 2, b3 = 129;  
        j = j + 10;  
        i = i / 10;  
        i = i * 0.1;  
        char c1 = 'a', c2 = 125;  
        byte b = b1 - b2;  
        char c = c1 + c2 - 1;  
        float f3 = f1 + f2;  
        float f4 = f1 + f2 * 0.1;  
        double d = d1 * i + j;  
        float f = (float)(d1 * 5 + d2);  
    }  
}
```

Create the following classes and then add them to your folder(*yourlastname_yourfirstname_hw1*).

Problem 2 (10 pts)

Write a Java class named Problem2.

In this class, add a main method that asks the user to enter the amount of a purchase. Then compute the state and county sales tax. Assume the state sales tax is 5 percent and the county sales tax is 2.5 percent. Display the amount of the purchase, the state sales tax, the county sales tax, the total sales tax, and the total of the sale (which is the sum of the amount of purchase plus the total sales tax).

Problem 3 (10 pts)

Write a Java class named Problem3.

In this class, add a main method that asks the user for total amount of purchase and computes the tax (assume the tax rate is 7%). Also, ask the user if the product is being shipped to New York. If yes, add an additional shipping fee of \$9.99 to the final cost. Display the total cost.

Problem 4 (10 pts)

Write a Java class named Problem4.

In this class, add a main method that asks the user for a letter and checks whether the letter is a vowel or consonant.

Problem 5 (10 pts)

Write a Java class named Problem5.

In this class, add a main method to input five numbers and only display the even ones if there are any.

Problem 6 (10 pts)

Write a Java class named Problem6.

In this class, add a main method that prompts the user for three numbers then displays them in descending order.

Problem 7 (10 pts)

Write a Java class named Problem7.

In this class, add a main method that takes a year from user and print out whether that year is a leap year or not.

1. The year can be evenly divided by 4.
2. If the year can be evenly divided by 100, it is NOT a leap year, unless the year is also evenly divisible by 400. Then it is a leap year.

Submission Instructions:

1. **Zip your folder** (*yourlastname_yourfirstname_hw1*) and submit the zipped folder on Blackboard.
2. Submit it through **Blackboard -> Course Material ->Unit 4 ->Assignment**
3. **You need to provide some comments for your codes and follow the variable's naming rules and conventions.**