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Computer 220L-203

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Project 2: Semester Project Proposal

Broken Down? Let's Break the Price Down, an Auto Repair Cost Calculator

Summary and Purpose of Project

This semester project proposal will describe the content and purpose of my semester

project for Computer 220L-123. The semester project will be composed of creating and

designing an application to take in the prices of the parts for the vehicle, the hourly rate of the

mechanic, the state tax rate, and store the customer's information. It will use this information to

create a repair estimate for the customer and, in the end, to create a bill for the customer to pay to

the mechanic.

Background

My Family and I go to a family friend who is a mechanic on the side to have repairs done

on our various cars. However, our mechanic also repairs other people's cars and has a full time

job. Therefore, it is often difficult for our mechanic to keep track of the cars that he is working

on. For example, sometimes he will work on up to eight different cars in a weekend and he often

receives many new appointments, as well as cancellations in the course of a day. This combined

with getting parts and estimating the prices of parts, as well as estimating the number of hours

the repair will take and keeping track of all of this takes up a lot of our mechanic's time.

Proposed Work

For the semester long project, I will develop an application that will store the customer's name, address, and phone number, the make, model, and year of the car, the mechanic's hourly rate and prices of parts, as well as a section of notes for the mechanic to put additional information, such as when to bring the car back for routine maintenance, an oil change or additional problems that the car will need to have fixed within the near future.

Layout

This will be accomplished by creating public and private classes with objects, as well as the get and or set methods used within the private classes. For example, the customer's name, address, phone number, and tax rate should use the set method because they are unlikely to change, whereas the hourly rate, number of hours worked on the car, part prices, and the make, model, and year of the car should be of type get, because they are more likely to change. It will also take the hourly rate and numbers of hours worked and multiply them to calculate the cost of labor. It will take this number and add it to the price of parts in order to calculate the cost of parts and labor. Finally, it will multiply this number by the state tax rate and add that to the price of the parts and labor to calculate the total cost to the customer. In the end, it will print out a breakdown of the cost of parts, the cost of labor, the cost of parts and labor together, and the total cost of the repair after taxes, as well as your contact information and which vehicle the repair was performed on. This will use System.out.printf() in order to format the bill into an easily readable format.

Conclusion

Overall, this semester project will create an easily readable bill for the customers' auto repairs. It will utilize both public and private classes, as well as get and set methods to obtain

information from the user about the customer in order to print a bill for the customer that breaks

down the price of the auto repair.