

CPSC 233 Summer 2022

Project- Your Dream Car

Team Members:

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Introduction:

Our team is working on a project where we build an application using JavaFX graphics that helps the targeted customers to choose the car of their choice according to the desired features and requirements that are listed in our application. The customers are allowed to select the best options that determine exterior outlook, interior design of car and payment methods that could provide them with a good estimate value of the chosen car model.

Description:

The project will make the use of Graphical User Interface using JavaFX in designing the application and involves topics related to loops, decision making and arrays. We will make the use of tools such as Choice Box, Slider, Textbox, Toggle Buttons and Labels in showing the options for car features. There will be following categories listed which can help in getting the right car model according to their preferences.

The categories are:

A. Performance of the car:

1. **Engine Size:** This contains a slider which can make it easier for customers to opt for a particular size given in cubic centimetres
2. **Fuel Type:** This allows the customer to get their desired car by selecting the fuel type that includes diesel, petrol, electric or hybrid type.
3. **Tire Type:** The type of tires mentioned are Summer Tires, Winter Tires, Off-Road, Performance or All-season (Regular) tires.
4. **Transmission type:** There will be three types of transmission- Automatic, Manual, or Dual.
5. **Horsepower:** This has a text box where a customer could specify their required horsepower measured in HP (horsepower).

B. Appearance of the car:

1. **Colour:** This will contain the choices for the exterior color of the car such as White, Black, Blue, Silver, Red and Yellow and others.
2. **Type of Car:** This would include the car types like SUV, Sedan, Hatchback, Truck, Sports Car, or a Van, Limousine.
3. **Number of Seats:** This can be Two-seater, Four-seater, Six-seater, Seven-seater, or Eight-seater.
4. **Additional Lights:** The customer can select the type of lights they would like to add to the car model.
5. **Safety features:** The customer will be given the option to select their desired safety features that should be added to car model that includes airbags, anti-lock brakes, smart suspension, and electronic stability control.

C. Method of payment:

This would allow the customers to select the method of payment preferred in paying for their desired car obtained after choosing the above features. The following methods are used for determining their final payment method:

1. Full payment
2. 50% down payment and 6 months finance +10% interests
3. 25% down payment and 12 months finance +15% interest

D. Receipt:

The receipt tab will show some selected input values by the customer and the final version of their customized car. It also represents the total costs of car according to the payment type chosen on previous method of payment tab.

Final Output:

The final output for our project will show three results to the customer.

- The first result represents the description of a car showing car type and included features.
- The second result will show the selected payment method and the estimate total price they need to pay for purchasing their desired car.
- The third one will output the total estimated cost for running the vehicle in a monthly basis.

How to run the Application:

Choose the appropriate features of car that should be added to the dream car from the Performance screen. Remember to include a valid horsepower between 100 to 500. Next, click on Appearance tab and again select the car features. On clicking the Payment tab, you can select a single button for which the full receipt will be shown on the receipt tab. You must press on the Tile titles to go to the next tab.

The receipt tab will highlight some inputs and the final calculated cost of your customized dream car along with an estimated monthly Cost.

To make any changes, make sure to click the buttons in payment method for it to show on receipt tab.

UML Diagram for our Application:

