**Final Project**

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CSC320: Programming I

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1. **Source Code:**

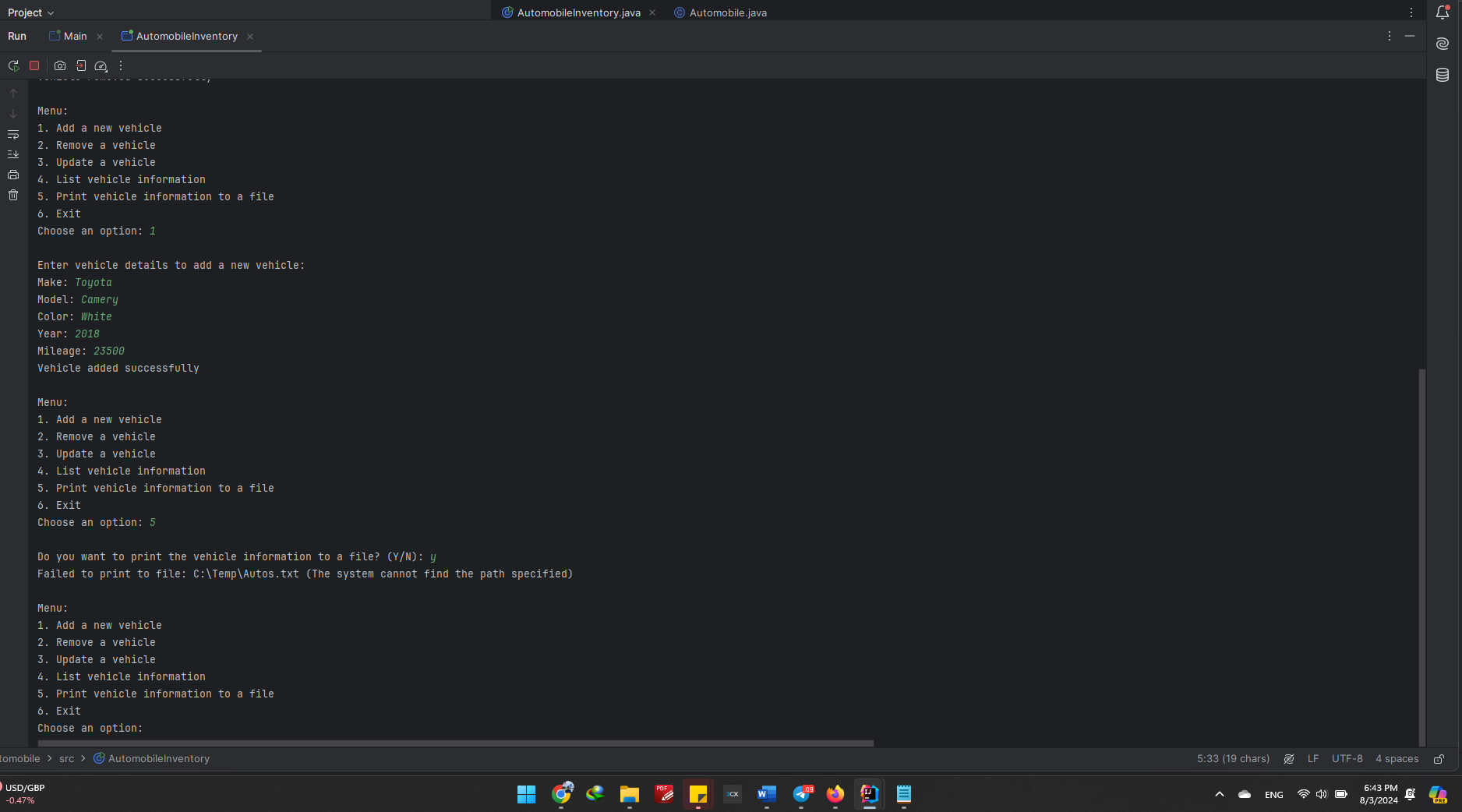
**Automobile.java**

1. import java.io.FileWriter;  
   import java.io.IOException;  
     
   public class Automobile {  
    private String make;  
    private String model;  
    private String color;  
    private int year;  
    private int mileage;  
     
    // Default constructor  
    public Automobile() {  
    this.make = "";  
    this.model = "";  
    this.color = "";  
    this.year = 0;  
    this.mileage = 0;  
    }  
     
    // Parameterized constructor  
    public Automobile(String make, String model, String color, int year, int mileage) {  
    this.make = make;  
    this.model = model;  
    this.color = color;  
    this.year = year;  
    this.mileage = mileage;  
    }  
     
    // Add a new vehicle  
    public String addVehicle(String make, String model, String color, int year, int mileage) {  
    try {  
    this.make = make;  
    this.model = model;  
    this.color = color;  
    this.year = year;  
    this.mileage = mileage;  
    return "Vehicle added successfully";  
    } catch (Exception e) {  
    return "Failed to add vehicle: " + e.getMessage();  
    }  
    }  
     
    // List vehicle information  
    public String[] listVehicle() {  
    String[] vehicleInfo = new String[5];  
    try {  
    vehicleInfo[0] = "Make: " + this.make;  
    vehicleInfo[1] = "Model: " + this.model;  
    vehicleInfo[2] = "Color: " + this.color;  
    vehicleInfo[3] = "Year: " + this.year;  
    vehicleInfo[4] = "Mileage: " + this.mileage;  
    } catch (Exception e) {  
    vehicleInfo = new String[]{"Failed to list vehicle information: " + e.getMessage()};  
    }  
    return vehicleInfo;  
    }  
     
    // Remove a vehicle  
    public String removeVehicle() {  
    try {  
    this.make = "";  
    this.model = "";  
    this.color = "";  
    this.year = 0;  
    this.mileage = 0;  
    return "Vehicle removed successfully";  
    } catch (Exception e) {  
    return "Failed to remove vehicle: " + e.getMessage();  
    }  
    }  
     
    // Update vehicle attributes  
    public String updateVehicle(String make, String model, String color, int year, int mileage) {  
    try {  
    this.make = make;  
    this.model = model;  
    this.color = color;  
    this.year = year;  
    this.mileage = mileage;  
    return "Vehicle updated successfully";  
    } catch (Exception e) {  
    return "Failed to update vehicle: " + e.getMessage();  
    }  
    }  
   }

**AutomobileInventory.java**

import java.io.FileWriter;  
import java.io.IOException;  
import java.util.Scanner;  
  
public class AutomobileInventory {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
 Automobile automobile = new Automobile();  
  
 while (true) {  
 System.*out*.println("\nMenu:");  
 System.*out*.println("1. Add a new vehicle");  
 System.*out*.println("2. Remove a vehicle");  
 System.*out*.println("3. Update a vehicle");  
 System.*out*.println("4. List vehicle information");  
 System.*out*.println("5. Print vehicle information to a file");  
 System.*out*.println("6. Exit");  
 System.*out*.print("Choose an option: ");  
 int choice = scanner.nextInt();  
 scanner.nextLine(); // consume the newline  
  
 switch (choice) {  
 case 1:  
 System.*out*.println("\nEnter vehicle details to add a new vehicle:");  
 System.*out*.print("Make: ");  
 String make = scanner.nextLine();  
 System.*out*.print("Model: ");  
 String model = scanner.nextLine();  
 System.*out*.print("Color: ");  
 String color = scanner.nextLine();  
 System.*out*.print("Year: ");  
 int year = scanner.nextInt();  
 System.*out*.print("Mileage: ");  
 int mileage = scanner.nextInt();  
 scanner.nextLine(); // consume the newline  
 System.*out*.println(automobile.addVehicle(make, model, color, year, mileage));  
 break;  
 case 2:  
 System.*out*.println("\nRemoving vehicle...");  
 System.*out*.println(automobile.removeVehicle());  
 break;  
 case 3:  
 System.*out*.println("\nEnter updated vehicle details:");  
 System.*out*.print("Make: ");  
 make = scanner.nextLine();  
 System.*out*.print("Model: ");  
 model = scanner.nextLine();  
 System.*out*.print("Color: ");  
 color = scanner.nextLine();  
 System.*out*.print("Year: ");  
 year = scanner.nextInt();  
 System.*out*.print("Mileage: ");  
 mileage = scanner.nextInt();  
 scanner.nextLine(); // consume the newline  
 System.*out*.println(automobile.updateVehicle(make, model, color, year, mileage));  
 break;  
 case 4:  
 System.*out*.println("\nListing vehicle information:");  
 for (String info : automobile.listVehicle()) {  
 System.*out*.println(info);  
 }  
 break;  
 case 5:  
 System.*out*.print("\nDo you want to print the vehicle information to a file? (Y/N): ");  
 String response = scanner.nextLine();  
 if (response.equalsIgnoreCase("Y")) {  
 try {  
 *printToFile*(automobile.listVehicle(), "C:\\Temp\\Autos.txt");  
 System.*out*.println("Vehicle information printed to C:\\Temp\\Autos.txt");  
 } catch (IOException e) {  
 System.*out*.println("Failed to print to file: " + e.getMessage());  
 }  
 } else {  
 System.*out*.println("File will not be printed.");  
 }  
 break;  
 case 6:  
 System.*out*.println("Exiting...");  
 scanner.close();  
 return;  
 default:  
 System.*out*.println("Invalid option. Please try again.");  
 }  
 }  
 }  
  
 private static void printToFile(String[] data, String filePath) throws IOException {  
 FileWriter writer = new FileWriter(filePath);  
 for (String line : data) {  
 writer.write(line + System.*lineSeparator*());  
 }  
 writer.close();  
 }  
}

1. **Screenshot of the program**

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