Title

The Vehicle Management

Background

Mr. Hoa plans to develop a program to manage vehicles in his show room. Vehicles have many properties in common. This management program needs to have basic functions such as: add, edit, search. The program must be designed so that adding a new vehicle is easy. Let's build your idea based OOP model.

Program Specifications

Build a management program. With the following basic functions

1. Add new vehicle
2. Update vehicle by ID
3. Search vehicle by description
4. Sort by brand(des)
5. Show vehicle list
6. Quit

Each menu choice should invoke an appropriate function to perform the selected menu item. Your program must display the menu after each task and wait for the user to select another option until the user chooses to quit the program.

In the current stage, the show room has 2 groups of vehicle as follows:

– Car: have the properties such as description, color, price, brand, type of engine, has AI system or not.
– Motorbike: have the properties such description, color, price, brand, weight. In this group has especial function is makeNoise which print out the message: name of motorbike + "Tin tin tin".

Features:

This system contains the following functions:

Display a menu and ask users to select an option.

– **Function 1: Add new vehicle- 2 points**
  o Create a submenu that allows the user to add vehicle to the show room.
  o Remember that the constraints must be checked
  o Add the new vehicle to collection.

– **Function 2: Update vehicle-1 point**
  o Require enter the vehicle's id.

  o If vehicle does not exist, the notification "Not exist!". Otherwise, user can start input new information of vehicle and update.

  o If new information is blank, then not change old information.

  o System must print out the result of the updating.

  o After updating, the program returns to the main screen.

▪ **Function 3: Search vehicle by description- 1 point**
  o User input the text want to search.
  o The system will search in the show room, and return all vehicle that has description contain the search string.

o   Show result list: all information of vehicle.
- **Function 4: Sort vehicle list by brand-1 point**
    o   Sort the vehicle list by brand(descending).

- **Function 5: Show vehicle-2 points**
    o   The system will show this list of vehicle in the show room.
    o   And if vehicle is a motorbike type then call the makeNoise() function(must use "install of")

- Build your model based on OOP knowledge- 2 points
- Require using Map to store Vehicle list- 1 point
- All cases of cheating will not be accepted.
- Project source must be submitted to the LMS- the correct directory for your class.
- Time: 7:00 -8:30 02/11/2021