Coding Marathon Problem Statement 3

Create a class **Insurance** with the following attributes

- insuranceId which could be a string value.
- insuranceAmount which could be a float value.
- insuranceType which could be ZERO_DEBT or REGULAR.

Create a class **Vehicle** with the following attributes

- vehicleId of type int or string.
- vehicleRegistration year of type integer.
- vehicleType which could be PRIVATE,COMMERCIAL, SPECIAL_PURPOSE.
- vehicleInsurancePlan which refers to the instance of the associated **Insurance** object.

Create a class **Car** which inherits from Vehicle class and has the following attributes

- carType which could be SUV, SEDAN or HATCHBACK.
- carPrice which could be a float value.
- carColour which could be a string value.

Create the following functionalities in a functionalities.cpp file

- A function that returns the list of car instances whose insurance amount is over a threshold provided as an input. Consider the scenario of no cars being above the insurance amount threshold and choose the return type accordingly.
- A function that returns the carPrice of all cars whose **VehicleType** matches the type passed as an argument. Create a separate thread to take the type as input from the user and save the return value from the function. Consider the scenario of no cars being above the insurance amount threshold and choose the return type accordingly.
- A function that returns the **carColour** in a container for all car units whose vehicleType is PRIVATE. Create a separate thread to run this function.
- A function that returns the average for insuranceAmount values of all vehicles which satisfy the following conditions
    - **vehicleType** is COMMERCIAL.
    - **vehicleRegistrationYear** is 20203.
    - **vehicleInsurancePlan** is ZERO_DEBT.

Demonstrate all functionalities in Main.cpp file