==

Roll Number: SYCOC303   Division: C

PRN Number: 122B2B303   Batch: C4

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Problem Statement:

⇨ **Consider we want to store the information of different vehicles.**

Create a class named Vehicle with two data member named mileage and price. Create its two subclasses:

*Car with data members to store ownership cost, warranty (by years), seating capacity and fuel type (diesel or petrol).

*Bike with data members to store the number of cylinders, number of gears, cooling type(air, liquid or oil), wheel type(alloys or spokes) and fuel tank size(in inches).

Make another two subclasses Audi and Ford of Car, each having a data member to store the model type. Next, make two subclasses Bajaj and TVS, each having a data member to store the make-type. Now, store and print the information of an Audi and a Ford car (i.e. model type, ownership cost, warranty, seating capacity, fuel type, mileage and price).

==

INPUT:

```
/*
 *    ===================================
 *          Program Name: CarInheritance.cpp
 *    Created on: November 29, 2022
 *     Author: Vinayak Shete
 *  ===================================
 */
/*
     How the inheritance in program will work??
     ==>>
```

```
===============================================================================
                                    Class Vehicle
                                         ||
                                         ||
                       =================================
                                  ||
    ||
                                  ||
    ||
                    class Cars                                    class Bike
                                  ||
    ||
                                  ||
    ||
               =================                      =================
                 ||                    ||                      ||
      ||
                 ||                    ||                      ||
      ||
            class Audi        class Ford          class Bajaj         class TVS


===============================================================================
*/
 #include<iostream>
 #include<string.h>
 using namespace std;

 class Vehicle
 {
      int mileage;
      double price;

      public:
            void setmileage()
            {
                   cout<<"\nEnter the mileage for the car:";
                   cin>>mileage;
            }
            int getmileage()
```

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```cpp
        {
                return mileage;
        }
        void setprice()
        {
                cout<<"\nEnter the price for the car:";
                cin>>price;
        }
        double getprice()
        {
                return price;
        }
};


class Car:public Vehicle
{
    double ownership_cost;
    int warranty,seat_capacity;
    string fuel_type;
    public:
        void setownership_cost()
        {
                cout<<"\nEnter the ownership cost for the car:";
                cin>>ownership_cost;
        }
        double getownership_cost()
        {
                return ownership_cost;
        }
        void setwarranty()
        {
                cout<<"\nEnter the warranty for the car in years:";
                cin>>warranty;
        }
        int getwarranty()
        {
                return warranty;
```

```
            }
            void setseat_capacity()
            {
                    cout<<"\nEnter the capacity of seats for the car:";
                    cin>>seat_capacity;
            }
            int getseat_capacity()
            {
                    return seat_capacity;
            }
            void setfuel_type()
            {
                    cout<<"\nEnter the fuel type for the car[Petrol/Diesel]:";
                    cin>>fuel_type;
            }
            string getfuel_type()
            {
                    return fuel_type;
            }
    };



    class Bike:public Vehicle
    {
         int no_cylinders,no_gears,fuel_tank_size;
         string cooling_type,wheel_type;
    };


    class Audi:public Car
    {
         string audi_model_type;
         public:
            void addSpecifications()
            {
                    cout<<"\n================= Add Specifications for Car
AUDI=====================";
                    cout<<"\nEnter the model type for the car:";
```

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```cpp
                cin>>audi_model_type;

                setmileage();

                setprice();

                setownership_cost();

                setwarranty();

                setseat_capacity();

                setfuel_type();

        }


        void displaySpecifications()

        {

                cout<<"\n=================Specifications for Car
AUDI======================";

                cout<<"\n\tModel Type: "<<audi_model_type;

                cout<<"\n\tMileage: "<<getmileage();

                cout<<"\n\tPrice: "<<getprice();

                cout<<"\n\tOwnership Cost: "<<getownership_cost();

                cout<<"\n\tSeat Capacity: "<<getseat_capacity();

                cout<<"\n\tFuel Type: "<<getfuel_type();

      cout<<"\n================================================================="
;

        }
};


class Ford:public Car
{

     string ford_model_type;

     public:

        void addSpecifications()

        {

                cout<<"\n================= Add Specifications for Car
FORD======================";

                cout<<"\nEnter the model type for the car:";

                cin>>ford_model_type;

                setmileage();

                setprice();

                setownership_cost();
```

SYCOC303

```cpp
                setwarranty();
                setseat_capacity();
                setfuel_type();
            }


        void displaySpecifications()
        {
                cout<<"\n=================Specifications for Car
FORD======================";
                cout<<"\n\tModel Type: "<<ford_model_type;
                cout<<"\n\tMileage: "<<getmileage()<<"kms/l";
                cout<<"\n\tPrice: $"<<getprice();
                cout<<"\n\tOwnership Cost: "<<getownership_cost();
                cout<<"\n\tWarrant: "<<getwarranty()<<"years";
                cout<<"\n\tSeat Capacity: "<<getseat_capacity();
                cout<<"\n\tFuel Type: "<<getfuel_type();

        cout<<"\n==============================================================="
;
            }
};


class Bajaj:public Bike
{
        string bajaj_make_type;
};


class TVS:public Bike
{
        string tvs_make_type;
};


int main()
{
        Audi audi;
        Ford ford;


        string model_t;
```

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```
        int ch,ch1,doch,doch1,doch2;


        cout<<"================Welcome====================\n";
        cout<<"\n============Vehicles=================";
        cout<<"\n======Cars======";
        do
        {
                cout<<"\n1.Audi\n2.Ford";
                cout<<"\nSelete the car you want by entering the proper choice:";
                cin>>ch;
                switch(ch)
                {
                        case 1:
                                do
                                {
                                        cout<<"\n===============CAR--
>>AUDI==================";
                                        cout<<"\n1.Add Specifications\n2.View
Specifications.";
                                        cout<<"\nEnter your proper choice:";
                                        cin>>ch1;
                                        switch(ch1)
                                        {
                                                case 1:
                                                        audi.addSpecifications();
                                                        break;

                                                case 2:
                                                        audi.displaySpecifications();
                                                        break;

                                                default:
                                                        cout<<"\nYou have entered wrong choice!
Please Enter the proper choice!";
                                                        break;
                                        }
                                        cout<<"\nDo you want to continue with AUDI? [1-YES ||
0-NO]";
```

SYCOC303

```
                                        cin>>doch1;
                            }while(doch1==1);
                            break;


                case 2:
                            do
                            {
                                        cout<<"\n===============CAR--
>>FORD==================";
                                        cout<<"\n1.Add Specifications\n2.View
Specifications.";
                                        cout<<"\nEnter your proper choice:";
                                        cin>>ch1;
                                        switch(ch1)
                                        {
                                                case 1:
                                                        ford.addSpecifications();
                                                        break;


                                                case 2:
                                                        ford.displaySpecifications();
                                                        break;


                                                default:
                                                        cout<<"\nYou have entered wrong choice!
Please Enter the proper choice!";
                                                        break;
                                        }
                                        cout<<"\nDo you want to continue with FORD? [1-YES ||
0-NO]";
                                        cin>>doch2;
                            }while(doch2==1);
                            break;


                default:
                            cout<<"\nYou have entered wrong choice! Please Enter the
proper choice!";
            }
        cout<<"\nDo you want to continue with Cars? [1-YES || )-NO]-->";
```

SYCOC303

```
                cin>>doch;

         }while(doch==1);

  }
```

===

OUTPUT:

```
============Vehicles==================
======Cars======
1.Audi
2.Ford
Selete the car you want by entering the proper choice:1

===============CAR-->>AUDI===================
1.Add Specifications
2.View Specifications.
Enter your proper choice:1

================ Add Specifications for Car AUDI======================
Enter the model type for the car:AudiQ3

Enter the mileage for the car:12

Enter the price for the car:50000

Enter the ownership cost for the car:450000

Enter the warranty for the car in years:15

Enter the capacity of seats for the car:6

Enter the fuel type for the car[Petrol/Diesel]:Diesel

Do you want to continue with AUDI? [1-YES || 0-NO]1

===============CAR-->>AUDI===================
1.Add Specifications
2.View Specifications.
Enter your proper choice:2

================Specifications for Car AUDI======================
        Model Type: AudiQ3
        Mileage: 12
        Price: 50000
        Ownership Cost: 450000
        Seat Capacity: 6
        Fuel Type: Diesel
======================================================================
Do you want to continue with AUDI? [1-YES || 0-NO]
```

```
1.Audi
2.Ford
Selete the car you want by entering the proper choice:2

===============CAR-->>FORD===================
1.Add Specifications
2.View Specifications.
Enter your proper choice:1

================ Add Specifications for Car FORD======================
Enter the model type for the car:FordModel1

Enter the mileage for the car:15

Enter the price for the car:60000

Enter the ownership cost for the car:50055

Enter the warranty for the car in years:10

Enter the capacity of seats for the car:7

Enter the fuel type for the car[Petrol/Diesel]:Diesel

Do you want to continue with FORD? [1-YES || 0-NO]1

===============CAR-->>FORD===================
1.Add Specifications
2.View Specifications.
Enter your proper choice:2

=================Specifications for Car FORD======================
        Model Type: FordModel1
        Mileage: 15kms/l
        Price: $60000
        Ownership Cost: 50055
        Warrant: 10years
        Seat Capacity: 7
        Fuel Type: Diesel
======================================================================
Do you want to continue with FORD? [1-YES || 0-NO]
```

===