

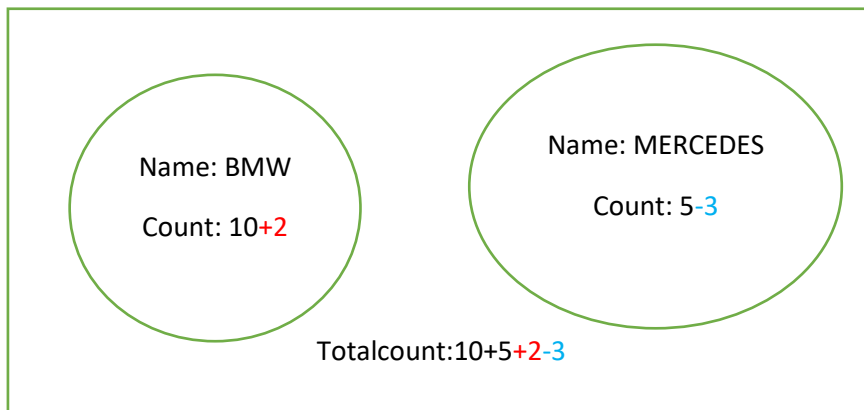
Class Exercise (1-APR-2020)

CarGallery
count:int name:string totalcount:static int
CarGallery(string) CarGallery(const CarGallery &cobj) ~CarGallery() showcarcount():void AddCartoGal(int):void RemoveCarfromGal(int):void Gettotalcars():static int

Assume in the main() we create objects

cargallery bmw('BMW'), Mercedes('MERCEDES')...

Constructor with a single parameter: Accepts name (brand) of the car as parameter then asks user to enter the number of that specific 'name' cars. Totalcount (total number of cars int the gallery) should be updated as the number of count (should be incremented by count (the number of cars))



Solution

//cargallery.h

```
class cargallery{
private:
    int count;
    string name;
    static int totalcount;
public:
    cargallery(string name)
    {
        this->name = name;
        cout << "Enter number of " << this->name << " cars you would like to have in the
gallery:";
        cin >> this->count;
        totalcount += this->count;
    }
    cargallery(const cargallery & cobj)
    {
        this->name = cobj.name;
        this->count = cobj.count;
        totalcount += this->count;
    }
    ~cargallery() //destructor
    {
        cout << "The " << this->name << " object has been removed." << endl;
        totalcount -= this->count;
    }
    void showcarcount()
    {
        cout << "There are " << this->count << " " << this->name << " cars in the gallery." << endl;
    }
    void addcartogallery(int num)
    {
        this->count += num;
        totalcount += num;
        cout << num << " " << this->name << " cars purchased." << endl;
    }
    void removecarfromgal(int num)
    {
        if (this->count > num)
        {
            this->count -= num;
            totalcount -= num;
            cout << num << " " << this->name << " cars sold." << endl;
        }
        else
            cout << "There are no sufficient " << this->name << " cars in the gallery." << endl;
    }
}
```

```

        static int gettotalcount()
        {
            return totalcount;
        }
}; //end of class
int cargallery::totalcount = 0;

//cargallery.cpp
#include<iostream>
#include<string>
using namespace std;
#include"cargallery.h"
void main()
{
    cout << "The initial number of cars in the gallery:" << cargallery::gettotalcount() << endl;
    cargallery bmw("BMW"), ford("FORD"), mercedes("MERCEDES");
    bmw.showcarcount();
    ford.showcarcount();
    mercedes.showcarcount();

    bmw.removecarfromgal(4);
    ford.addcartogallery(6);

    bmw.showcarcount();
    ford.showcarcount();
    mercedes.showcarcount();

    cout << "The final number of cars in the gallery:" << cargallery::gettotalcount() << endl;
    system("pause");
}

```

Additionally do the following:

Add a default constructor to cargallery class. Prompt users to enter *name* and *count* from keyboard and update *totalcount*. Then write a separate main() function to create an array objects for 20 cars. Feel free to do more operations. Then observe the output.