Home Work

Task 01:

What will the following program display on the screen?

```
#include <iostream>
using namespace std;

class Tank
{
private:
   int gallons;
public:
   Tank()
      { gallons = 50; }
   Tank(int gal)
      { gallons = gal; }
   int getGallons()
      { return gallons; }
};

int main()
{
   Tank storage[3] = { 10, 20 };
   for (int index = 0; index < 3; index++)
      cout << storage[index].getGallons() << endl;
   return 0;
}
```

Task 02:

What will the following program display on the screen?

```
#include <iostream>
using namespace std;

class Package
{
private:
    int value;
public:
    Package()
        { value = 7; cout << value << endl; }
    Package(int v)
        { value = v; cout << value << endl; }
    ~Package()
        { cout << value << endl; }
};

int main()
{
    Package obj1(4);
    Package obj2();
    Package obj3(2);
    return 0;
}
```

Task 03:

Find the Errors

Each of the following class declarations or programs contain errors. Find as many as possible.

A)

```
class Circle:
{
private
    double centerX;
    double centerY;
    double radius;
public
    setCenter(double, double);
    setRadius(double);
}
```

B)

```
#include <iostream>
using namespace std;

Class Moon;
{
Private;
   double earthWeight;
   double moonWeight;
Public;
   moonWeight(double ew);
      { earthWeight = ew; moonWeight = earthWeight / 6; }
   double getMoonWeight();
      { return moonWeight; }
}
```

```
int main()
{
    double earth;
    cout >> "What is your weight? ";
    cin << earth;
    Moon lunar(earth);
    cout << "On the moon you would weigh "
         <<lunar.getMoonWeight() << endl;
    return 0;
}
```

Task 04:

Write a class named `Car` that has the following member variables:

- **`yearModel`.** An `int` that holds the car's year model.
- **`make`.** A string that holds the make of the car.
- **`speed`.** An `int` that holds the car's current speed.

In addition, the class should have the following constructor and other member functions.

- **Constructor.** The constructor should accept the car's year model and make as arguments. These values should be assigned to the object's `yearModel` and `make` member variables. The constructor should also assign 0 to the `speed` member variables.
- **Accessor.** Appropriate accessor functions to get the values stored in an object's `yearModel`, `make`, and `speed` member variables.
- **`accelerate`.** The `accelerate` function should add 5 to the `speed` member variable each time it is called.
- **`brake`.** The `brake` function should subtract 5 from the `speed` member variable each time it is called.

Demonstrate the class in a program that creates a `Car` object, and then calls the `accelerate` function five times. After each call to the `accelerate` function, get the current speed of the car and display it. Then, call the `brake` function five times. After each call to the `brake` function, get the current speed of the car and display it.

Note: Submit the report that will contain answers of task 01, 02, 03. Submit .cpp file for task 04.