Lab. (12)
Encapsulation & Inheritance

Answer the following questions

Question One:
Write a program to access a private attribute, use public "get" and "set" methods in C++

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

class Employee {
  private:
    // Private attribute
    int salary;

  public:
    // Setter
    void setSalary(int s) {
      salary = s;
    }
    // Getter
    int getSalary() {
      return salary;
    }
};

int main() {
  Employee myObj;
  myObj.setSalary(50000);
  cout << myObj.getSalary();
  return 0;
}
```

Question Two:
Write a program to use a Simple Class to the Car class (child) inherits the attributes and methods from the Vehicle class (parent) in C++

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

// Base class
class Vehicle {
```

```cpp
  public:
    string brand = "Ford";
    void honk() {
      cout << "Tuut, tuut! \n" ;
    }
};

// Derived class
class Car: public Vehicle {
  public:
    string model = "Mustang";
};
  int main() {
Car myCar;
myCar.honk();
cout << myCar.brand + " " + myCar.model;
  return 0;
  }
```

Question Three:
Write a program to use a simple class example program for MyGrandChild is derived from class MyChild (which is derived from MyClass) in C++.

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

// Base class (parent)
class MyClass {
  public:
    void myFunction() {
      cout << "Some content in parent class." ;
    }
};

// Derived class (child)
class MyChild: public MyClass {
};

// Derived class (grandchild)
class MyGrandChild: public MyChild {
};
int main() {
  MyGrandChild myObj;
  myObj.myFunction();
  return 0;
}
```

Question Four:

Write a program to use a class which can also be derived from more than one base class, using a comma-separated list in C++.

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

// Base class
class MyClass {
  public:
    void myFunction() {
      cout << "Some content in parent class." ;
    }
};

// Another base class
class MyOtherClass {
  public:
    void myOtherFunction() {
      cout << "Some content in another class." ;
    }
};
// Derived class
class MyChildClass: public MyClass, public MyOtherClass {
};

int main() {
  MyChildClass myObj;
  myObj.myFunction();
  myObj.myOtherFunction();
  return 0;
}
```

Question Five:
Write a program to use the Protected access specifier in C++

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

// Base class
class Employee {
  protected: // Protected access specifier
    int salary;
};

// Derived class
class Programmer: public Employee {
  public:
    int bonus;
    void setSalary(int s) {
      salary = s;
    }
    int getSalary() {
      return salary;
    }
};
int main() {
  Programmer myObj;
  myObj.setSalary(50000);
  myObj.bonus = 15000;
  cout << "Salary: " << myObj.getSalary() << "\n";
  cout << "Bonus: " << myObj.bonus << "\n";
  return 0;
}
```