

```
/*This programme adds the volumes of a sphere and a box*/
```

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

```
class Box; // The compiler needs to be aware of the existence of this class before it sees it for
the first time in a function!!
```

```
class Sphere {
```

```
private:
```

```
    double radius;
```

```
public:
```

```
    Sphere(double R) : radius(R) {};
```

```
    ~Sphere() { /*default destructor*/ };
```

```
    // This function is not a member function (i.e. should have no access to private member
data)
```

```
    friend double TotalVolume(Box x, Sphere s);
```

```
};
```

```
class Box {
```

```
private:
```

```
    double width, length, height;
```

```
public:
```

```
    Box(double W, double H, double L) : width(W), length(L), height(H) {}; // Initialisation
list constructor
```

```
    ~Box() { /*default destructor*/ }
```

```
    // This function is not a member function (i.e. should have no access to private member
data)
```

```
    friend double TotalVolume(Box x, Sphere s);
```

```
};
```

```
// This is the definition of the function
```

```
double TotalVolume(Box x, Sphere s) { return x.length * x.width * x.height + (4/3)*3.14*
(s.radius*s.radius*s.radius); }
```

```
void main() {
```

```
    Box box1(2, 3, 4);
```

```
    Sphere s1(2);
```

```
    cout << "The volume of the box is " << TotalVolume(box1, s1) << endl;
```

```
    system("pause");
```

```
}
```