

Lab 11

Going the Distance¹

Objective

To write typical class member functions and to introduce operator overloading.

Assignment

Given the class declaration and the main function below, write the Distance class member functions so the program functions correctly. You may need to consult the Reference for information on operator overloading.

```
#include <iostream>

using namespace std;

class Distance
{
public:
    Distance(); // Default constructor to 0'0"
    Distance(int f, int i); // Constructs distance to f'i"
    void get(); // Ask user for distance
    void show(); // Display the distance
    Distance operator + (const Distance &d); // Return sum of two distances
    Distance operator * (const Distance &d); // Return product of two
    distances

private:
    int feet, inches;
};

// Write the member functions here


int main()
{
    Distance d1, d2, perimeter, area;
    cout << endl << "Length of Room" << endl;
    d1.get();
    cout << endl << "Width of Room" << endl;
    d2.get();
    perimeter = d1 + d1 + d2 + d2;
    cout << endl << "Perimeter of Room: ";
    perimeter.show();
    area = d1 *d2;
    cout << endl << "Square footage of Room: ";
    area.show();
    return 0;
}
```

¹ Distance class adapted from Robert Lafore, *Object-Oriented Programming in C++*

Sample Output

Length of Room
Enter feet: **2**
Enter inches: **11**

Width of Room
Enter feet: **10**
Enter inches: **7**

Perimeter of Room: 27 feet, 0 inches
Square footage of Room: 12 feet, 11 inches