2.3

```
#include <iostream>
#include <iomanip>
using namespace std;
class DM;

class DB{
        float feet;
        float inch;
        public:         DB(float,float);
                                DB(DB&);
                                void display();
                                friend DB
sum(DB&, DM&);
                                friend DM
sum(DM&,DB&);
};
DB::DB(float x = 0, float y = 0){
        feet = x;
        inch = y;
}
DB::DB(DB & q){
        feet = q.feet;
        inch = q.inch;
}
void DB::display(){
        cout<<"Feet:
"<<feet<<setw(20)<<"\tInches
:"<<inch<<"\n";
}
class DM{
        float meter;
        float cm;
        public:         DM(float,float);
                                DM(DM&);
                                void display();
                                friend DB
sum(DB&, DM&);
                                friend DM
sum(DM&,DB&);
};
DM::DM(float x = 0, float y = 0){
        meter = x;
        cm = y;
}
DM::DM(DM & q){
        meter = q.meter;
        cm = q.cm;
}
void DM::display(){
        cout<<"Metre:"<<meter<<setw(20)<<"
\tCentimetre :"<<cm<<"\n";
}
DB sum(DB& X, DM& Y){
        DB Sum(0,0);
 //logic to add both
        float a, b;
        a = Y.meter*100 + Y.cm; //cms of Y
        b = X.feet * 12 + X.inch; //inches of X
        a = a/2.54; //convert to inches
        b = b+a; //total inches of both
        //a shud hold feet and b inches
        a = 0;
        while (b>12){
                a++;
                b-=12;
        }
        Sum.feet = a;
        Sum.inch = b;
        return Sum;
}
```

```
DM sum(DM& Y,DB& X){
	DM Sum(0,0);
	float a,b,m;
	a = Y.meter*100 + Y.cm; //cms of a
	b = X.feet*12 + X.inch;
	b = b*2.54; //b has centimeters of X
	b = b + Y.cm;
	m = Y.meter;
	while (b>100){
		m++;
		b = b-100;
	}
	Sum.meter = m;
	Sum.cm = b;
	return Sum;
}
int main(){
	DM a(1, 1);
	DB b(1,11);
	cout<<"A:\n";
	a.display();
	cout<<"B:\n";
	b.display();
	DB sumb;
	cout<<"In Feet, inches:\n";
	sumb = sum(b,a);
	sumb.display();
	DM summ;
	summ = sum(a,b);
	cout<<"In metre,cm:\n";
	summ.display();
	return 0;
}
```

Output:

```
C:\Users\Vincent\Code\c-cpp\SE\Labs\OOPS\Assignments\a2>.\p2c
A:
Metre:1         Centimetre :1
B:
Feet: 1                 Inches :11
In Feet, inches:
Feet: 5                 Inches :2.76378
In metre,cm:
Metre:1         Centimetre :59.42
```