COMPUTER SOFTWARE LAB

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Experiment No.: 5

PROBLEM STATEMENT:

Define a class DISTANCE with feet and inches as its data members. Using the concept of operator overloading, convert the distance given in metres to an object of type DISTANCE and vice-versa.

PROGRAM CODE:

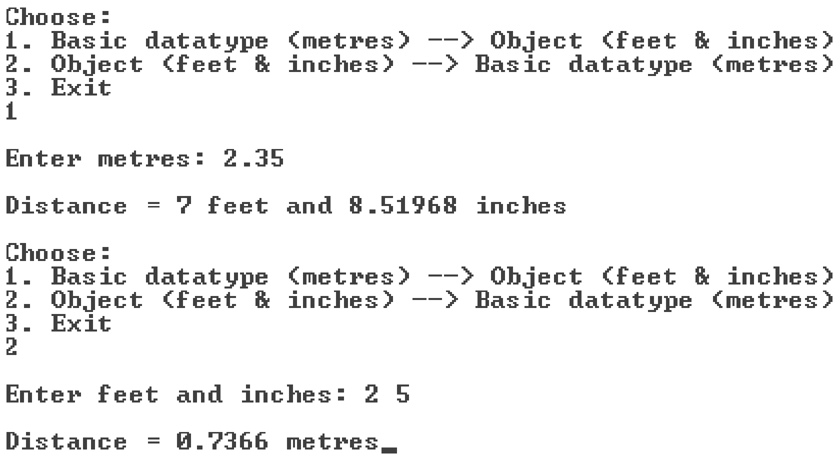
```
#include<iostream.h>
#include<conio.h>
#define M 3.280839895       //To convert metres to feet
#define F 0.3048            //To convert feet to metres
#define I 0.0254            //To convert inches to metres

class distance
{
    private:
         float feet,inches;
    public:
        distance()
        {
              feet=0.0;
              inches=0.0;
        }
        void get(float f,float i)
        {
           feet=f;
           inches=i;
        }
        void show()
        {
           cout<<"\nDistance = "<<feet<<" feet"<<" and "<<inches<<" inches";
        }
        void operator=(float a)
        {
           float frac=a*M;
           feet=int(frac);
           inches=(frac-feet)*12;
        }
        operator float()
        {
             float mtrs=0;
             mtrs=feet*F;
```

```
                mtrs+=inches*I;
                return mtrs;
          }
};

int main()
{
    int ch;
    float metres,f,i;
    distance d1,d2;
    x:
    cout<<"\n\nChoose:\n1. Basic datatype (metres) --> Object (feet & inches)\n2. Object (feet & inches) --> Basic datatype (metres)\n3. Exit\n";
    cin>>ch;
    switch(ch)
    {
           case 1:
              cout<<"\nEnter metres: ";
              cin>>metres;
              d1=metres;
              d1.show();
              getch();
              goto x;
           case 2:
              float result;
              cout<<"\nEnter feet and inches: ";
              cin>>f>>i;
              d2.get(f,i);
              result=d2;
              cout<<"\nDistance = "<<result<<" metres";
              getch();
              goto x;
           case 3:
              break;
           default:
                cout<<"Enter a valid choice!";
                getch();
                goto x;
    }
    return 0;
}
```

OUTPUT:



```
Choose:
1. Basic datatype (metres) --> Object (feet & inches)
2. Object (feet & inches) --> Basic datatype (metres)
3. Exit
1

Enter metres: 2.35

Distance = 7 feet and 8.51968 inches

Choose:
1. Basic datatype (metres) --> Object (feet & inches)
2. Object (feet & inches) --> Basic datatype (metres)
3. Exit
2

Enter feet and inches: 2 5

Distance = 0.7366 metres_
```

RESULT:

Hence operator overloading is employed to enable data conversion from user-defined type (class object) to built-in type (float) and vice versa.