

Creating a Unit Conversion Library

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**F#: Make illegal states
unrepresentable**

**Make unit conversions
you can't mess up**

What's a unit?

Dimension	Units
mass	kilogram, pound
length	meter, foot
time	second, minute
temperature	Kelvin, Fahrenheit
electric current	ampere
luminous intensity	candela
amount of a substance	mole

**What about F# Units
of Measure?**

Goals

1. Nice in F#

2. Nice from a web service

Let's Code!

Stuff to Check Out

- <https://github.com/fsprojects/FSharp.UMX>

Stuff I Should Try

- Try interface instead of interface record thingy

```
type ILength =  
  abstract Lengths : Unit[]  
  abstract Convert : Length → Length → float → float  
  abstract TryConvert: string → string → float → float option
```

- Generalize to more dimensions with

```
type IUnitConverter<'Unit, 'UnitMetadata> = {  
  Units : 'Unit []  
  Convert : 'Unit → 'Unit → float [] → float []  
  TryConvert : string → string → float [] → ConversionResult  
}
```

- Allow clients to create instances of units