The goal of this library is to model units of measure and manipulation of quantities associated to units of measure.

To understand this one need to know bit about the metric system and dimensional equation. Please read <https://en.wikipedia.org/wiki/Metric_system> and <https://en.wikipedia.org/wiki/Dimensional_analysis>.

We use the 7 base units of the SI (<https://en.wikipedia.org/wiki/International_System_of_Units>) as a starting point: these are the FundamentalMeasureUnit. A fundamental unit is semantically equivalent (for us) to a dimension. We add 3 fundamental units (dimension) and new ones can be dynamically added to the system as required (for instance “$” and/or “€”, “£”, etc.). Note that each currency would be a dimension. Converting a quantity of “$” to “€” is not in the scope of this model.

The 3 fundamental units we add are:

/// <summary>

/// Dimensionles unit. Associated abbreviation is "" (the empty string) and its

/// name is "None".

/// </summary>

public static readonly FundamentalMeasureUnit None;

/// <summary>

/// Dimensionless unit. Used to count items. Associated abbreviation is "#".

/// </summary>

public static readonly FundamentalMeasureUnit Unit;

/// <summary>

/// A bit is defined as the information entropy of a binary random variable

/// that is 0 or 1 with equal probability.

/// Associated abbreviation is "b" (recommended by the IEEE 1541-2002 and

/// IEEE Std 260.1-2004 standards).

/// </summary>

public static readonly FundamentalMeasureUnit Bit;

These fundamental units actually are BasicMeasureUnit with their Exponent set to 1. The BasicMeasureUnit are bound to a FundamentalMeasureUnit with an exponent: they handle the basic items of a dimensional equation m^2, s^-1, etc.

NormalizedMeasureUnit captures a list of one or more BasicMeasureUnit. The list is normalized by decreasing exponents and then by fundamental unit’s name lexicographic order.