Measurement Guide

The parameters used in this application have it's own significance and margins fro the perspective of medical diagnosis. The details and understandings of those parameters are given below -

- **Radius:** It is the mean of distances from center to the points present on the perimeter.
- **Texture:** Those are the standard deviation of the grey-scaled values.
- **Perimeter:** Mean of the derivatives of the perimeter measured from the cell mass.
- **Area:** Calculated area of the cell mass.
- **Smoothness:** Variance in mean radius lengths.
- **Compactness:** It is calculated as (perimeter^2 / area - 1.00)
- **Concavity:** Severity of concave portions of the contour.
- **Concave Points:** Total no of concave points present on the contour.
- **Symmetry:** Total symmetric index of the two cell mass partition.
- **Fractal Dimension:** It is a measure of how complicated a self similar figure is. The dimension index can be calculated as -

$$\begin{aligned} \text{dimension} &= \frac{\log\ (\text{number of self-similar pieces})}{\log\ (\text{magnification factor})} \\ &= \frac{\log N^3}{\log N} \\ &= \frac{3 \log N}{\log N} \\ &= 3 \end{aligned}$$