Features in the Dataset

The dataset consists of *30 features*, categorized based on the measurements of the cell nuclei:

1. ***Radius*:**

   ***radius_mean, radius_se, radius_worst*:**

   - Represents the mean, standard error, and worst-case measurements of the distance from the center to the perimeter of the cell.
   - Larger radii are often associated with malignant tumours due to irregular and larger cell growth.

2. ***Texture*:**

   ***texture_mean, texture_se, texture_worst*:**

   - Captures the standard deviation of pixel intensity values within the cell.
   - Malignant tumours exhibit greater variability in texture due to irregular structures.

3. ***Perimeter*:**

   ***perimeter_mean, perimeter_se, perimeter_worst*:**

   - Measures the length of the outer boundary of the cell nucleus.
   - Malignant cells tend to have larger and more irregular perimeters.

4. ***Area*:**

   ***area_mean, area_se, area_worst*:**

   - Represents the area of the cell nucleus.
   - Larger cell areas are common in malignant tumours.

5. ***Smoothness*:**

   ***smoothness_mean, smoothness_se, smoothness_worst*:**

   - Measures the variation in the radius lengths, indicating how smooth the cell edges are.
   - Malignant cells often have less smooth (more irregular) edges.

6. ***Compactness*:**

   ***compactness_mean, compactness_se, compactness_worst*:**

   - Calculated as [Perimeter^2 / (Area) - 1], this measures how compact the cell is.
   - Malignant tumours are typically more compact due to uncontrolled cell division.

7. ***Concavity*:**

***concavity_mean, concavity_se, concavity_worst*:**

- Describes the severity of concave areas in the cell nucleus boundary.
- Malignant tumours often have deeper concavities.

8. ***Concave Points***:

***concave points_mean, concave points_se, concave points_worst*:**

- The number of concave portions in the boundary of the nucleus.
- More concave points are a strong indicator of malignancy.

9. *Symmetry*:

***symmetry_mean, symmetry_se, symmetry_worst*:**

- Measures the asymmetry in the shape of the nucleus.
- Malignant tumours are usually less symmetric.

10. *Fractal Dimension*:

***fractal_dimension_mean, fractal_dimension_se, fractal_dimension_worst*:**

- Quantifies the complexity of the boundary of the nucleus.
- A higher fractal dimension indicates irregular and complex boundaries, which are more likely in malignant cells.