

## Power BI Breast Cancer Risk Prediction Analysis

### Attribute details:

This dataset consists of a group of breast cancer patients who had surgery to remove their tumor. The dataset consists of the following variables:

- **Patient\_ID:** A unique identifier for each patient.
- **Age:** The age of the patient at the time of diagnosis, measured in years.
- **Gender:** Indicates the gender of the patient, either Male or Female.
- **Protein1, Protein2, Protein3, Protein4:** Expression levels of various proteins, measured in undefined units.
- **Tumor\_Stage:** The stage of the tumor, categorized as I, II, or III.
- **Histology:** Describes the type of carcinoma, including Infiltrating Ductal Carcinoma, Infiltrating Lobular Carcinoma, or Mucinous Carcinoma.
- **ER status, PR status, HER2 status:** Indicates the status of hormone receptors (ER and PR) and human epidermal growth factor receptor 2 (HER2), categorized as Positive or Negative.
- **Surgery\_type:** Specifies the type of surgery performed, such as lumpectomy, Simple Mastectomy, Modified Radical Mastectomy, or Other.
- **Date\_of\_Surgery:** The date when the surgery was performed, formatted as DD-MON-YY.
- **Date\_of\_Last\_Visit:** The date of the patient's last visit, if available. It can be null if the patient didn't visit again after surgery.
- **Patient\_Status:** Indicates whether the patient is Alive or Dead. It can be null if there is no information available about the patient's status after surgery.

### Notes about Medical term in this dataset:

- Lumpectomy (lum-PEK-tuh-me) is surgery to remove cancer or other abnormal tissue from your breast.
- simple mastectomy removes all breast tissue but leaves your pectoral muscles beneath
- A modified radical mastectomy is a procedure in which the entire breast is removed, including the skin, areola, nipple, and most axillary lymph nodes, but the pectoralis major muscle is spared

- HER2-positive breast cancer is a breast cancer that tests positive for a protein called human epidermal growth factor receptor 2 (HER2). This protein promotes the growth of cancer cells.
- Invasive ductal carcinoma (IDC), also known as infiltrating ductal carcinoma, is a type of breast cancer that starts in the milk ducts of the breast and moves into nearby tissue.
- Invasive lobular carcinoma, also known as infiltrating lobular carcinoma, begins in the milk-producing glands (lobules) of the breast. As an invasive type of cancer, ILC has spread beyond its original tumour site. Over time, ILC may become metastatic breast cancer.

Mucinous carcinoma is a rare type of cancer. In mucinous carcinoma, cancer cells form in mucin, the main component of mucus. Mucins are proteins that help with the function of healthy cells. In mucinous carcinoma, the mucin around cancer cells becomes part of the tumour.

### **Acknowledgement:**

All credit and recognition for the dataset used in this analysis project go to its rightful owners. I express gratitude to them for providing such valuable data. This analysis is solely for learning purposes and not for commercial use