We are performing an analysis of microscopy images. We segmented the images and then identified each cell. For each cell, multiple image features are extracted.

The data is in the file **image.csv.**

We will use this data to train an image classifier. However, we do not want to use all the features directly. So we want to reduce the dimension of the data using PCA.

Perform PCA on this data. **Do NOT use** ready-made PCA functions of R for this job.

Submit the following:

a) The R script for this assignment

b) A report in MS Word. Include the following in the report:

1) Name

2) Roll number

3) Show the Scree plot. Axes must be labeled.

4) Mention which two principle components you choose for further study?

5) Show a 2-dimensional scatter plot showing the projected data on the selected two principal components. Axes must be labeled.

6) Identify the original features with the maximum positive contributions for these two selected principal components.