

**Objective:** Premier League Player Rating using Single Linkage Agglomerative (Bottom-Up) Clustering Technique

**Steps to run the notebook:**

- Upload the notebook in *Google Colab*, and also upload the *ipl.csv* dataset.
- Run the code cells for **importing necessary libraries** and **Data Preprocessing**.
- There would be 3 code cells, one for Regression Imputation, another for Mean Imputation, and the other for Zero Imputation. **Any one of those 3 cells should be run to perform the necessary data imputation.**
- Following this, the **checking for any missing values** cell should be run. Then the code cell for **normalizing only the rows** should be run.
- After this, all the cells should be run one after another. The appropriate files will be saved as *kmeans.txt*, and *agglomerative.txt*.
- If the optimal value of k is obtained as 4 (or more) from Step 3, we need to **uncomment the lines for saving the clustering information in the code cell pertaining to Step 3**. After this, the remaining cells can be run one after another.
- The various function definitions have been mentioned in the *19EC39034\_PLHC-AS\_Report.pdf* file, so kindly consult that file for more functional details. The notebook is being saved as *19EC39034\_PLHC-AS.ipynb*.