README

In the perspective of bringing innovation to the sports industry, the use of data is becoming increasingly essential today to provide value to the analysis of sports events and promote the development of new approaches that can unlock athletes' potential.

Sports Analytics is a branch of the sports sector that is spreading day by day across all sports, leading the digitalization process of federations, competitions, and sports events.

The objective of this challenge is to showcase a tangible implementation of techniques that are commonly employed within Sports Analytics departments, particularly concerning professional football teams.

Starting from the Statsbomb dataset, access to statistics and events that occurred during the course of the FIFA World Cup 2022 final held in Qatar is possible.

The provided dataset has been preprocessed to comprehend both event-related data (Event Data) and the positions in which these events occur during a football match. Furthermore, this processing has served to combine positional data with the Statsbomb 360 dataset, enabling the retrieval of not only the player's position involved in the gameplay event but also the positions of the players on the field.

To fully understand the potential of the data and the meaning of the various features comprising the dataset under analysis, it is recommended to review the documentation available at the following references:

- Event Data:
  https://github.com/statsbomb/statsbombpy/blob/master/doc/Open%20Data%20Events%20v4.0.0.pdf

- 360 Data: https://github.com/statsbomb/open-data/blob/master/doc/Open%20Data%20360%20Frames%20v1.0.0%20(1).pdf

The previous file can be found in pdf format in the shared folder of this document.

The presented dataset is unique and has been provided in .csv format.

Each group has been given an .ipynb notebook file containing the exercise instructions. The programming language used for the exercise is Python 3.9.X, as

it is one of the most widely used languages in the field of Data Analytics and is integrated with the StatsBomb data provider.

To solve the various tasks, you can utilize the integrated libraries:

- mplsoccer: https://mplsoccer.readthedocs.io/en/latest/z
- pandas: https://pandas.pydata.org/

In the file WC_2022_Challenge_Exercise.ipynb, you can find the various tasks to solve along with their associated scores.

Each group will be required to fill in the blank spaces with the results obtained at the end of their analysis.

The last section of the notebook is titled 'Scoring Calculation'. To generate the suitable submission file, it is necessary to execute this portion of code by only inputting the destination path of the output file.

Each group is asked to create a single slide encompassing the presentation of the previously found results. This slide is intended to be presented to the Sport Analytics department of one of the two teams participating in the proposed match, with the aim of highlighting all the discovered metrics."

To do

1. Download the *WC_2022_final.csv* file.
2. Complete the tasks from the *WC_2022_Challenge Excercise.ipynb* notebook.
   a. Fill the empty variables as explained in the notebook
   b. Run the cells properly and output the *GNB_SportAnalytics_{group_number}.csv file.*
3. Create a one page slide based on the template of the file [.....................] allocating the value found after the analysis (if one or more tasks will be not completed skip the section related to the specific task) and titled *GNB_SportAnalytics_{group_number}_dashboard.pdf*
4. Once your files has been created please upload it using this form: https://docs.google.com/forms/d/e/1FAIpQLSdwnYgUwkKzubgMfTjOY8YWeDy86S47n-E6Uz5pq1FlMsuJDA/viewform.
   Two files are expected to be uploaded:
   a. GNB_SportAnalytics_{group_number}.csv {your_presentation}:
   b. Based on the shared template 2023_GNB_School_SportsAnalytics_template.pptx in **.pdf format**

5. Upload the GNB_SportsAnalytics_{group_number} to this link:
   https://docs.google.com/forms/d/e/1FAIpQLSdwnYgUwkKzubgMfTjOY8YWeDy86S47n-E6Uz5pq1FlMsuJDA/viewform