**Overview:**

In this project, we will be looking at the player data provided by FIFA which contains information such as personal details, wages, physical attributes, technical skills, potential, and positional strengths. This is primarily data of FIFA 2018. Through this project, you will get a glimpse of insights behind the beautiful game and the kind of information and decisions a football manager goes through.

**Objective:**

Preliminary Data Analysis. Explore the dataset and practice extracting basic observations about the data. The idea is for you to get comfortable working in Python.

You are expected to do the following :

* Come up with the players' profile (characteristics of a player) of the different teams/countries.
* Generate a set of insights and recommendations that will help the coach to understand the competition.

**Data Dictionary:**

|  |  |
| --- | --- |
| Feature | Explanation |
| player index number |  |
| Name | name of a player |
| Age | age of a player |
| Photo | picture of player |
| Nationality | player nationality |
| Flag |  |
| Overall | Overall Rating of the player |
| Potential | Potential Rating of the player |
| Club | The international club for which the player plays |
| Club Logo |  |
| Value | The market value of the player in the transfer market |
| Wage | Player Skills and other self-explanatory attributes |
| Special |
| Acceleration |
| Aggression |
| Agility |
| Balance |
| Ball control |
| Composure |
| Crossing |
| Curve |
| Dribbling |
| Finishing |
| Free kick accuracy |
| GK diving |
| GK handling |
| GK kicking |
| GK positioning |
| GK reflexes |
| Heading accuracy |
| Interceptions |
| Jumping |
| Long passing |
| Long shots |
| Marking |
| Penalties |
| Positioning |
| Reactions |
| Short passing |
| Shot power |
| Sliding tackle |
| Sprint speed |
| Stamina |
| Standing tackle |
| Strength |
| Vision |
| Volleys |
| CAM | Center Attacking Midfielder |
| CB | Center Back |
| CDM | Center Defensive Midfielder |
| CF | Center Forward |
| CM | Center Midfielder |
| ID | Player's ID in FIFA18 |
| LAM | Left Attacking Midfielder |
| LB | Left Back |
| LCB | Left Center Back |
| LCM | Left Center Midfielder |
| LDM | Left Defensive Midfielder |
| LF | Left Forward |
| LM | Left Midfielder |
| LS | Left Striker |
| LW | Left-Wing |
| LWB | Left-Wing Back |
| Preferred Positions | Player's Preferred Position |
| RAM | Right Attacking Midfielder |
| RB | Right Back |
| RCB | Right Center Back |
| RCM | Right Center Midfielder |
| RDM | Right Defensive Midfielder |
| RF | Right Forward |
| RM | Right Midfielder |
| RS | Right Striker |
| RW | Right Wing |
| RWB | Right Wing Back |
| ST | Striker |

**Hints:**

* For **Q.4.**- There are different preferred positions for a player and you are required to consider the first preference as the player’s preferred position. For example, if a player’s preferred positions are ‘LW RW ST’ consider his position to be LW and create a new column to store these positions. Consider this new column for position-related questions. Once this new column is created, you will find around 15 unique positions. You can refer to this code to create the column – fifa\_df['Position'] = fifa\_df['Preferred Positions'].apply(lambda x: x[:3])
* For **Q.6.**-
  + Pick out the best players based on the overall rating while selecting the players. In case of a tie, select the most important tiebreaker attribute.
  + When we talk about formation, the nomenclature is as follows (Number of defenders- Number of midfielders- number of forwards), the goalkeeper will always be there in the team hence we don’t represent it in the formation.
  + Based on the positional requirement the above-mentioned positions can be treated equally while shortlisting the squad. E.g. LW / ST – LW can be treated equally as the striker.

**Best Practices for Notebook :**

* The notebook should be well-documented, with inline comments explaining the functionality of code and markdown cells containing comments on the observations and insights.
* The notebook should be run from start to finish in a sequential manner before submission.
* It is preferable to remove all warnings and errors before submission.
* The notebook should be submitted as an HTML file (.html) and as a notebook file (.ipynb)

**Submission Guidelines :**

1. There are two parts to the submission:
   1. A well commented Jupyter notebook [format - .ipynb]
   2. File converted to HTML format
2. Any assignment found copied/ plagiarized with other groups will not be graded and awarded zero marks
3. Please ensure timely submission as any submission post-deadline will not be accepted for evaluation
4. Submission will not be evaluated if,
   1. it is submitted post-deadline, or,
   2. more than 2 files are submitted

Happy Learning!!