EPL TEAMS GOALS SCORED SINCE 2010/2021

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Notebook-EPL1020

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1 DATA PREPARATION

Import all packages need.

```
[1]: import requests as rq
import json
import pandas as pd
import numpy as np
import datetime as dt
```

1.1 COLLECT & DISCOVER DATA

Get and collect EPL matches season 2010/11 to 2020/21 data in JSON format. Click here for the data source.

 $Complete\ URL\ ex:\ \texttt{https://raw.githubusercontent.com/openfootball/football.json/master/2010-11//ended-e$

```
[2]: urlLeft = 'https://raw.githubusercontent.com/openfootball/football.json/master/'
     urlRight = '/en.1.json'
     seasonIntl = list(range(2010, 2021)) # season start
     seasonInt2 = list(range(11, 22)) # season end
     seasonStr1 = \Pi
     seasonStr2 = []
     for s1, s2 in zip(seasonInt1, seasonInt2):
         seasonStr1.append(str(s1))
         seasonStr2.append(str(s2))
     seasonMerge = []
     for s1, s2 in zip(seasonStr1, seasonStr2):
         seasonMerge.append(urlLeft + s1 + '-' +s2 + urlRight)
     # convert data to python
     pythonData = []
     for x in seasonMerge:
         convert = json.loads(rq.get(x).content) # get JSON content
         pythonData.append(convert)
```

```
[3]: | # pythonData[0] # season 2010/11
```

[4]: | # pythonData[8] # season 2018/19

Explanation: Season 2010/11 to 2017/18 and season 2018/19 to 2020/21 has a different nested dict-list format.

```
[5]: matchesPart1 = [] # season 2010/11
     for x1 in pythonData[0:8]:
         seasonValue = x1['name'] # pythonData[i]['name'] value
         nestedList1 = x1['rounds'] # pythonData[i]['rounds'] list
         for x2 in nestedList1:
             matchdayValue = x2['name'] # pythonData[i]['rounds'][i]['name'] value
             nestedList2 = x2['matches'] # pythonData[i]['rounds'][i]['matches'] list
             for x3 in nestedList2:
                 dateValue = x3['date'] #__
      →pythonData[i]['rounds'][i]['matches'][i]['date'] value
                 hometeamValue = x3['team1'] # # |
      \rightarrow pythonData[i]['rounds'][i]['matches'][i]['team1'] value
                 awayteamValue = x3['team2'] #__
      →pythonData[i]['rounds'][i]['matches'][i]['team2'] value
                 hometeamScoreValue = x3['score']['ft'][0] #1
      →pythonData[i]['rounds'][i]['matches'][i]['score']['ft'][0] value
                 awayteamScoreValue = x3['score']['ft'][1] #_
      \rightarrow pythonData[i]['rounds'][i]['matches'][i]['score']['ft'][1] value
                 matchesPart1.append({
                      'season' : seasonValue,
                      'matchday' : matchdayValue,
                      'date' : dateValue,
                      'home_team' : hometeamValue,
                      'away_team' : awayteamValue,
                     'home_goals' : hometeamScoreValue,
                     'away_goals' : awayteamScoreValue
                 })
     matchesPart2 = [] # season 2018/19
     for x1 in pythonData[8:]:
         seasonValue = x1['name'] # pythonData[i]['name'] value
         nestedList1 = x1['matches'] # pythonData[i]['matches'] list
         for x2 in nestedList1:
             matchdayValue = x2['round'] # pythonData[i]['matches'][i]['round'] value
             dateValue = x2['date'] # pythonData[i]['matches'][i]['date'] value
             hometeamValue = x2['team1'] # pythonData[i]['matches'][i]['team1'] value
             awayteamValue = x2['team2'] # pythonData[i]['matches'][i]['team2'] value
             if ('score' in x2.keys()) == True:
                 hometeamScoreValue = x2['score']['ft'][0] #_
      \rightarrow pythonData[i]['matches'][i]['score']['ft'][0] value
```

```
awayteamScoreValue = x2['score']['ft'][1] #__
      \rightarrow pythonData[i]['matches'][i]['score']['ft'][1] value
                 matchesPart2.append({
                      'season' : seasonValue,
                      'matchday' : matchdayValue,
                      'date' : dateValue,
                      'home_team' : hometeamValue,
                      'away_team' : awayteamValue,
                      'home_goals' : hometeamScoreValue,
                      'away_goals' : awayteamScoreValue
                 })
             else:
                 matchesPart2.append({
                      'season' : seasonValue,
                      'matchday' : matchdayValue,
                      'date' : dateValue,
                      'home team' : hometeamValue,
                      'away_team' : awayteamValue,
                      'home_goals' : None,
                      'away_goals' : None
                 })
     # create dataframe
     tempdfPart1 = pd.DataFrame(matchesPart1) # season 2010/11
     tempdfPart2 = pd.DataFrame(matchesPart2) # season 2018/19
     dfMatches = tempdfPart1.append(tempdfPart2)
     dfMatches.sample(5)
[5]:
                                                                         home_team \
                           season
                                       matchday
                                                       date
     1064 Premier League 2020/21
                                   Matchday 31
                                                 2021-04-10
                                                                     Liverpool FC
     2150 Premier League 2015/16
                                   Matchday 26
                                                                  Norwich City FC
                                                 2016-02-13
           Premier League 2011/12
                                                 2012-02-11 Manchester United FC
     627
                                   Matchday 25
     1336 Premier League 2013/14
                                   Matchday 20
                                                 2014-01-01
                                                                        Arsenal FC
     1954 Premier League 2015/16
                                     Matchday 6
                                                 2015-09-19
                                                               Manchester City FC
                               home_goals
                    away_team
                                            away_goals
     1064
               Aston Villa FC
                                       NaN
                                                   NaN
     2150 West Ham United FC
                                       2.0
                                                   2.0
     627
                 Liverpool FC
                                       2.0
                                                   1.0
     1336
              Cardiff City FC
                                       2.0
                                                   0.0
          West Ham United FC
                                       1.0
                                                   2.0
[6]: dfMatches.info()
    <class 'pandas.core.frame.DataFrame'>
    Int64Index: 4180 entries, 0 to 1139
    Data columns (total 7 columns):
```

```
Column
 #
                 Non-Null Count
                                 Dtype
     _____
                 _____
                                 ----
 0
                 4180 non-null
                                 object
     season
 1
                 4180 non-null
    matchday
                                 object
 2
     date
                 4180 non-null
                                 object
 3
    home_team
                 4180 non-null
                                 object
 4
     away team
                 4180 non-null
                                 object
 5
    home_goals 3879 non-null
                                 float64
     away_goals 3879 non-null
                                 float64
dtypes: float64(2), object(5)
memory usage: 261.2+ KB
```

Explanation: - Data type of date need to change to date - Data type of home_goals and away_goals need to change to integer - There are 301 null values in each of home_goals and away_goals

1.2 CLEANSE DATA

1.2.1 Duplicated Values

Check if there are duplicated values.

```
[7]: dfMatches.duplicated().any()
```

[7]: False

Explanation: There are no duplicated values.

1.2.2 Null Values

There are null values in home_goals and away_goals.

```
[8]:
                                            matchday
                                                              date
                                                                     home_team
                                season
     count
                                   301
                                                 301
                                                               301
                                                                            301
                                     1
                                                   31
                                                                40
                                                                             20
     unique
              Premier League 2020/21
                                        Matchday 23
                                                       2021-01-30
                                                                    Burnley FC
     top
                                   301
                                                   10
                                                                             16
     freq
                                                                10
                          away_team
     count
                                 301
     unique
                                  20
              Manchester United FC
     top
     freq
                                  16
```

[9]: dfTemp['matchday'].unique() # matchday list that contains null value

```
[9]: array(['Matchday 1', 'Matchday 9', 'Matchday 10', 'Matchday 11', 'Matchday 12', 'Matchday 13', 'Matchday 14', 'Matchday 15', 'Matchday 16', 'Matchday 17', 'Matchday 18', 'Matchday 19', 'Matchday 20', 'Matchday 21', 'Matchday 22', 'Matchday 23', 'Matchday 24', 'Matchday 25', 'Matchday 26', 'Matchday 27', 'Matchday 28', 'Matchday 29', 'Matchday 30', 'Matchday 31', 'Matchday 32', 'Matchday 33', 'Matchday 34', 'Matchday 35', 'Matchday 36', 'Matchday 37', 'Matchday 38'], dtype=object)
```

Explanation: Null values on matchday 1 and 9 to 38 in season 2020/21. Numeric data for that season can't be processed.

```
[10]: season matchday date home_team \
O Premier League 2010/11 Matchday 1 2010-08-14 Bolton Wanderers FC
1 Premier League 2010/11 Matchday 1 2010-08-14 Wigan Athletic FC

away_team home_goals away_goals
O Fulham FC O O
1 Blackpool FC O 4
```

We have clean dataframe dfMatchesClean which contains season from 2010/11 to 2019/20 with goals data.

2 DATA PROCESSING

```
dfMatchesComplete = dfMatchesComplete.rename({'season' : 'season_start'}, axis__
       ⇒= 1)
      # drop columns
      # dfMatchesComplete = dfMatchesComplete.drop(columns = ['date'], axis = 1)
      # change data type
      dfMatchesComplete = dfMatchesComplete.astype({
          'season_start' : 'int64',
          'matchday' : 'int64'
      })
      dfMatchesComplete = dfMatchesComplete.sort_values([
          'season_start',
          'matchday',
          'date',
          'home team'
      ]).reset_index(drop = True)
      dfMatchesComplete.head(2)
[11]:
         season_start matchday
                                                      home_team
                                                                           away_team \
                                      date
      0
                 2010
                              1 2010-08-14
                                                 Aston Villa FC West Ham United FC
                 2010
                              1 2010-08-14 Blackburn Rovers FC
                                                                          Everton FC
      1
         home_goals away_goals
      0
      1
                              0
[12]: # home-away clean sheet by goals condition
      homeCleanSheet = []
      awayCleanSheet = []
      for ((index1, value1), (index2, value2)) in zip(dfMatchesComplete['home goals'].
       →items(), dfMatchesComplete['away_goals'].items()):
          if value1 == 0:
              homeCleanSheet.append(True)
          else:
              homeCleanSheet.append(False)
          if value2 == 0:
              awayCleanSheet.append(True)
          else:
              awayCleanSheet.append(False)
      # home-away point and result by goals condition
      homePoint = []
      awayPoint = []
      homeResult = []
```

```
awayResult = []
      for ((index1, value1), (index2, value2)) in zip(dfMatchesComplete['home_goals'].
       →items(), dfMatchesComplete['away_goals'].items()):
          if value1 > value2:
              homePoint.append(3)
              awayPoint.append(0)
              homeResult.append('Won')
              awayResult.append('Loss')
          elif value1 < value2:</pre>
              homePoint.append(0)
              awayPoint.append(3)
              homeResult.append('Loss')
              awayResult.append('Won')
          else:
              homePoint.append(1)
              awayPoint.append(1)
              homeResult.append('Draw')
              awayResult.append('Draw')
      # create new columns
      dfMatchesComplete['is home cleansheet'] = homeCleanSheet
      dfMatchesComplete['is away cleansheet'] = awayCleanSheet
      dfMatchesComplete['home_point'] = homePoint
      dfMatchesComplete['away_point'] = awayPoint
      dfMatchesComplete['home_result'] = homeResult
      dfMatchesComplete['away_result'] = awayResult
      dfMatchesComplete.head(2)
[12]:
         season start matchday
                                                       home_team
                                                                           away_team \
                                      date
      0
                 2010
                              1 2010-08-14
                                                  Aston Villa FC West Ham United FC
                 2010
                              1 2010-08-14 Blackburn Rovers FC
                                                                          Everton FC
      1
         home_goals away_goals is_home_cleansheet is_away_cleansheet
                                                                          home_point \
      0
                              0
                                              False
                                                                    True
      1
                  1
                              0
                                              False
                                                                    True
                                                                                   3
         away_point home_result away_result
      0
                  0
                            Won
                                       Loss
                  0
      1
                            Won
                                       Loss
[13]: # home team
      dfHomeMatches = dfMatchesComplete.copy()
      dfHomeMatches['side'] = 'Home'
      dfHomeMatches = dfHomeMatches[[
          'season_start',
          'matchday',
```

```
'date',
    'home_team',
    'side',
    'home_goals',
    'away_goals',
    'is_home_cleansheet',
    'home_point',
    'home_result'
]]
dfHomeMatches = dfHomeMatches.rename({
    'home_team' : 'team',
    'home_goals' : 'goals_scored',
    'away_goals' : 'goals_concedad',
    'is_home_cleansheet' : 'is_cleansheet',
    'home_point' : 'point',
    'home_result' : 'result',
\}, axis = 1)
# away team
dfAwayMatches = dfMatchesComplete.copy()
dfAwayMatches['side'] = 'Away'
dfAwayMatches = dfAwayMatches[[
    'season_start',
    'matchday',
    'date',
    'away_team',
    'side',
    'away_goals',
    'home_goals',
    'is_away_cleansheet',
    'away_point',
    'away_result'
]]
dfAwayMatches = dfAwayMatches.rename({
    'away_team' : 'team',
    'away_goals' : 'goals_scored',
    'home_goals' : 'goals_concedad',
    'is_away_cleansheet' : 'is_cleansheet',
    'away_point' : 'point',
    'away_result' : 'result',
\}, axis = 1)
# union home-away team
dfTeamResult = dfHomeMatches.append(dfAwayMatches)
dfTeamResult = dfTeamResult.sort_values([
    'season_start',
    'matchday',
```

```
'date',
          'team'
      ]).reset_index(drop = True)
      dfTeamResult.iloc[[1, 2, 3799, 3800, 7598, 7599]]
[13]:
            season_start matchday
                                                                      team
                                                                            side \
      1
                    2010
                                 1 2010-08-14
                                                        Birmingham City FC
                                                                            Away
                    2010
                                                       Blackburn Rovers FC
      2
                                 1 2010-08-14
                                                                            Home
      3799
                    2014
                                38 2015-05-24
                                                        West Ham United FC
                                                                            Away
                                                           AFC Bournemouth
      3800
                    2015
                                 1 2015-08-08
                                                                            Home
      7598
                                38 2020-07-26
                                                        West Ham United FC
                    2019
                                                                            Home
      7599
                    2019
                                38 2020-07-26 Wolverhampton Wanderers FC Away
            goals_scored goals_concedad is_cleansheet point result
      1
                       2
                                                  False
                                                              1
                                                                  Draw
      2
                       1
                                       0
                                                  False
                                                              3
                                                                   Won
      3799
                       0
                                       2
                                                   True
                                                              0
                                                                  Loss
      3800
                       0
                                       1
                                                   True
                                                              0
                                                                 Loss
      7598
                       1
                                       1
                                                  False
                                                              1
                                                                  Draw
                                                                  Loss
      7599
                                       2
                                                    True
[14]: # create pivot table
      goalsScoredPivot = pd.pivot_table(
          data = dfTeamResult,
          values = 'goals_scored',
          index = ['team'],
          columns = ['season_start', 'matchday'],
          fill value = 0,
          aggfunc = 'sum',
      goalsScoredPivot = goalsScoredPivot.cumsum(axis = 1)
      columnLevel0 = goalsScoredPivot.columns.get_level_values(0).tolist()
      columnLevel1 = goalsScoredPivot.columns.get_level_values(1).tolist()
      columnName = []
      for col1, col2 in zip(columnLevel0, columnLevel1):
          columnName.append(str(col1) + '/' + str(col1 + 1) + ' - Matchday ' +__

str(col2))
      goalsScoredPivot.columns = columnName
      urlLogoMain = 'https://raw.githubusercontent.com/faisalydth/MP-EPL1020/main/
      -Logo/'
      urlLogo = []
      for x in range(1, 37):
          urlLogo.append(urlLogoMain + str(x) + '.svg')
```

goalsScoredPivot['logo_url'] = urlLogo

goalsScoredPivot

[14]:		2010/2011 - Matchday	1	2010/2011 - Matchday 2 \	
	team			-	
	AFC Bournemouth		0	0	
	Arsenal FC		1	7	
	Aston Villa FC		3	3	
	Birmingham City FC		2	4	
	Blackburn Rovers FC		1	2	
	Blackpool FC		4	4	
	Bolton Wanderers FC		0	3	
	Brighton & Hove Albion FC		0	0	
	Burnley FC		0	0	
	Cardiff City FC		0	0	
	Chelsea FC		6	12	
	Crystal Palace FC		0	0	
	Everton FC		0	1	
	Fulham FC		0	2	
	Huddersfield Town AFC		0	0	
	Hull City AFC		0	0	
	Leicester City FC		0	0	
	Liverpool FC		1	1	
	Manchester City FC		0	3	
	Manchester United FC		3	5	
	Middlesbrough FC		0	0	
	Newcastle United FC		0	6	
	Norwich City FC		0	0	
	Queens Park Rangers FC		0	0	
	Reading FC		0	0	
	Sheffield United FC		0	0	
	Southampton FC		0	0	
	Stoke City FC		1	2	
	Sunderland AFC		2	2	
	Swansea City FC		0	0	
	Tottenham Hotspur FC		0	2	
	Watford FC		0	0	
	West Bromwich Albion FC		0	1	
	West Ham United FC		0	1	
	Wigan Athletic FC		0	0	
	Wolverhampton Wanderers FC		2	3	
		2010/2011 - Matchday	3	2010/2011 - Matchday 4 \	
	team				
	AFC Bournemouth		0	0	
	Arsenal FC		9	13	
	Aston Villa FC		4	5	

Birmingham City FC	6	6
Blackburn Rovers FC	3	4
Blackpool FC	6	8
Bolton Wanderers FC	5	6
Brighton & Hove Albion FC	0	0
Burnley FC	0	0
Cardiff City FC	0	0
Chelsea FC	14	17
Crystal Palace FC	0	0
Everton FC	1	4
Fulham FC	4	6
Huddersfield Town AFC	0	0
Hull City AFC	0	0
Leicester City FC	0	0
Liverpool FC	2	2
Manchester City FC	3	4
Manchester United FC	8	11
Middlesbrough FC	0	0
Newcastle United FC	7	7
Norwich City FC	0	0
Queens Park Rangers FC	0	0
Reading FC	0	0
Sheffield United FC	0	0
Southampton FC	0	0
Stoke City FC	2	4
Sunderland AFC	3	4
Swansea City FC	0	0
Tottenham Hotspur FC	2	3
Watford FC	0	0
West Bromwich Albion FC	1	2
West Ham United FC	1	2
Wigan Athletic FC	1	2
Wolverhampton Wanderers FC	4	5
	2010/2011 - Matchday 5	2010/2011 - Matchday 6 \
team		
AFC Bournemouth	0	0
Arsenal FC	14	16
Aston Villa FC	6	8
Birmingham City FC	7	7
Blackburn Rovers FC	5	7
Blackpool FC	8	9
Bolton Wanderers FC	7	9
Brighton & Hove Albion FC	0	0
Burnley FC	0	0
Cardiff City FC	0	0
Chelsea FC	21	21

Crystal Palace FC	0	0	
Everton FC	4	4	
Fulham FC	7	7	
Huddersfield Town AFC	0	0	
Hull City AFC	0	0	
Leicester City FC	0	0	
Liverpool FC	4	6	
Manchester City FC	6	7	
Manchester United FC	14	16	
Middlesbrough FC	0	0	
Newcastle United FC	8	9	
Norwich City FC	0	0	
Queens Park Rangers FC	0	0	
Reading FC	0	0	
Sheffield United FC	0	0	
Southampton FC	0	0	
Stoke City FC	5	7	
Sunderland AFC	5	7	
Swansea City FC	0	0	
Tottenham Hotspur FC	6	6	
Watford FC	0	0	
West Bromwich Albion FC	5	8	
West Ham United FC	3	4	
Wigan Athletic FC	2	2	
		_	
Wolverhampton Wanderers FC	6	7	
	6	7	
Wolverhampton Wanderers FC	6		
Wolverhampton Wanderers FC team	6 2010/2011 - Matchday 7	7 2010/2011 - Matchday 8 \	
Wolverhampton Wanderers FC team AFC Bournemouth	6 2010/2011 - Matchday 7 0	7 2010/2011 - Matchday 8 \ 0	
Wolverhampton Wanderers FC team AFC Bournemouth Arsenal FC	6 2010/2011 - Matchday 7 0 16	7 2010/2011 - Matchday 8 \ 0 18	
Wolverhampton Wanderers FC team AFC Bournemouth Arsenal FC Aston Villa FC	6 2010/2011 - Matchday 7 0 16 9	7 2010/2011 - Matchday 8 \ 0 18 9	
Wolverhampton Wanderers FC team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC	6 2010/2011 - Matchday 7 0 16 9 7	7 2010/2011 - Matchday 8 \ 0 18 9 8	
Wolverhampton Wanderers FC team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC	6 2010/2011 - Matchday 7 0 16 9 7 7	7 2010/2011 - Matchday 8 \ 0 18 9 8 7	
Wolverhampton Wanderers FC team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC	6 2010/2011 - Matchday 7 0 16 9 7 7 11	7 2010/2011 - Matchday 8 0 18 9 8 7 13	
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12	
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10 0	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12 0	
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10 0 0	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12 0 0	
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10 0 0 0	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12 0 0 0	•
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10 0 0 0 23	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12 0 0 0 23	
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10 0 0 23 0	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12 0 0 0 23	
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10 0 0 0 23 0 6	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12 0 0 0 23 0 8	
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC Fulham FC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10 0 0 23 0 6 8	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12 0 0 0 23 0 8 9	
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC Fulham FC Huddersfield Town AFC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10 0 0 23 0 6 8 0	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12 0 0 0 23 0 8 9 0	
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC Fulham FC Huddersfield Town AFC Hull City AFC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10 0 0 23 0 6 8 0 0	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12 0 0 23 0 8 9 0 0 0	
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC Fulham FC Huddersfield Town AFC Hull City AFC Leicester City FC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10 0 0 23 0 6 8 0 0 0 0	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12 0 0 0 23 0 8 9 0	
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC Fulham FC Huddersfield Town AFC Hull City AFC	6 2010/2011 - Matchday 7 0 16 9 7 7 11 10 0 0 23 0 6 8 0 0	7 2010/2011 - Matchday 8 0 18 9 8 7 13 12 0 0 0 23 0 8 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0	

Manchester United FC	16	18
Middlesbrough FC	0	0
Newcastle United FC	10	12
Norwich City FC	0	0
Queens Park Rangers FC	0	0
Reading FC	0	0
Sheffield United FC	0	0
Southampton FC	0	0
Stoke City FC	8	9
Sunderland AFC	7	7
Swansea City FC	0	0
Tottenham Hotspur FC	8	10
Watford FC	0	0
West Bromwich Albion FC	9	11
West Ham United FC	5	6
Wigan Athletic FC	4	6
Wolverhampton Wanderers FC	7	8
	2010/2011 - Matchday 9	2010/2011 - Matchday 10 \
team		
AFC Bournemouth	0	0
Arsenal FC	21	22
Aston Villa FC	9	9
Birmingham City FC	10	10
Blackburn Rovers FC	8	9
Blackpool FC	13	15
Bolton Wanderers FC	13	13
Brighton & Hove Albion FC	0	0
Burnley FC	0	0
Cardiff City FC	0	0
Chelsea FC	25	27
Crystal Palace FC	0	0
Everton FC	9	10
Fulham FC	10	12
Huddersfield Town AFC	0	0
Hull City AFC	0	0
Leicester City FC	0	0
Liverpool FC	9	10
Manchester City FC	12	13
Manchester United FC	20	22
Middlesbrough FC	0	0
Newcastle United FC	14	19
Norwich City FC	0	0
Queens Park Rangers FC	0	0
Reading FC	0	0
Sheffield United FC	0	0
Southampton FC	0	0
•		

Stoke City FC	10	10
Sunderland AFC	8	9
Swansea City FC	0	0
Tottenham Hotspur FC	11	11
Watford FC	0	0
West Bromwich Albion FC	13	14
West Ham United FC	7	7
Wigan Athletic FC	7	7
Wolverhampton Wanderers FC	8	10

... 2019/2020 - Matchday 30 \

team	***	
AFC Bournemouth	***	230
Arsenal FC	•••	687
Aston Villa FC	•••	264
Birmingham City FC	•••	37
Blackburn Rovers FC	•••	94
Blackpool FC	***	55
Bolton Wanderers FC	***	98
Brighton & Hove Albion FC	•••	103
Burnley FC	***	182
Cardiff City FC	***	66
Chelsea FC	***	675
Crystal Palace FC	***	293
Everton FC	•••	521
Fulham FC	•••	221
Huddersfield Town AFC	•••	50
Hull City AFC	•••	108
Leicester City FC	•••	328
Liverpool FC	•••	710
Manchester City FC	•••	832
Manchester United FC	***	660
Middlesbrough FC	•••	27
Newcastle United FC	•••	393
Norwich City FC	•••	185
Queens Park Rangers FC	***	115
Reading FC	•••	43
Sheffield United FC	***	30
Southampton FC	•••	377
Stoke City FC	***	326
Sunderland AFC	***	280
Swansea City FC	***	306
Tottenham Hotspur FC	•••	644
Watford FC	***	204
West Bromwich Albion FC	•••	343
West Ham United FC	•••	419
Wigan Athletic FC	•••	129

	2019/2020 - Matchday 31	2019/2020 - Matchday 32 \
team		
AFC Bournemouth	230	231
Arsenal FC	689	693
Aston Villa FC	265	265
Birmingham City FC	37	37
Blackburn Rovers FC	94	94
Blackpool FC	55	55
Bolton Wanderers FC	98	98
Brighton & Hove Albion FC	103	103
Burnley FC	183	184
Cardiff City FC	66	66
Chelsea FC	677	679
Crystal Palace FC	293	293
Everton FC	522	524
Fulham FC	221	221
Huddersfield Town AFC	50	50
Hull City AFC	108	108
Leicester City FC	328	329
Liverpool FC	714	714
Manchester City FC	833	837
Manchester United FC	663	666
Middlesbrough FC	27	27
Newcastle United FC	394	398
Norwich City FC	185	185
Queens Park Rangers FC	115	115
Reading FC	43	43
Sheffield United FC	30	33
Southampton FC	377	380
Stoke City FC	326	326
Sunderland AFC	280	280
Swansea City FC	306	306
Tottenham Hotspur FC	646	647
Watford FC	204	205
West Bromwich Albion FC	343	343
West Ham United FC	419	422
Wigan Athletic FC	129	129
Wolverhampton Wanderers FC	177	178
	2019/2020 - Matchday 33	2019/2020 - Matchday 34 \
team	•	•
AFC Bournemouth	233	233
Arsenal FC	695	696
Aston Villa FC	265	265
Birmingham City FC	37	37
.		

Blackburn Rovers FC	94	94
Blackpool FC	55	55
Bolton Wanderers FC	98	98
Brighton & Hove Albion FC	104	105
Burnley FC	185	186
Cardiff City FC	66	66
Chelsea FC	682	685
Crystal Palace FC	293	295
Everton FC	524	525
Fulham FC	221	221
Huddersfield Town AFC	50	50
Hull City AFC	108	108
Leicester City FC	332	333
Liverpool FC	716	719
Manchester City FC	837	842
Manchester United FC	671	674
Middlesbrough FC	27	27
Newcastle United FC	400	400
Norwich City FC	185	186
Queens Park Rangers FC	115	115
Reading FC	43	43
Sheffield United FC	34	35
Southampton FC	381	382
Stoke City FC	326	326
Sunderland AFC	280	280
Swansea City FC	306	306
Tottenham Hotspur FC	648	648
Watford FC	205	207
West Bromwich Albion FC	343	343
West Ham United FC	424	424
Wigan Athletic FC	129	129
Wolverhampton Wanderers FC	178	178
1		
	2019/2020 - Matchday 35	2019/2020 - Matchday 36 \
team		
AFC Bournemouth	237	238
Arsenal FC	697	699
Aston Villa FC	267	268
Birmingham City FC	37	37
Blackburn Rovers FC	94	94
Blackpool FC	55	55
Bolton Wanderers FC	98	98
Brighton & Hove Albion FC	105	106
Burnley FC	187	188
Cardiff City FC	66	66
Chelsea FC	685	686
Crystal Palace FC	295	295

Everton FC	525	526
Fulham FC	221	221
Huddersfield Town AFC	50	50
Hull City AFC	108	108
Leicester City FC	334	336
Liverpool FC	720	721
Manchester City FC	847	849
Manchester United FC	676	678
Middlesbrough FC	27	27
Newcastle United FC	401	402
Norwich City FC	186	186
Queens Park Rangers FC	115	115
Reading FC	43	43
Sheffield United FC	38	38
Southampton FC	384	385
Stoke City FC	326	326
Sunderland AFC	280	280
Swansea City FC	306	306
Tottenham Hotspur FC	650	653
Watford FC	209	210
West Bromwich Albion FC	343	343
West Ham United FC	428	431
Wigan Athletic FC	129	129
Wolverhampton Wanderers FC	181	182
"or tor manage or o	101	102
·	2019/2020 - Matchday 37	
team	2019/2020 - Matchday 37	2019/2020 - Matchday 38 \
team AFC Bournemouth	2019/2020 - Matchday 37 238	2019/2020 - Matchday 38 \
team AFC Bournemouth Arsenal FC	2019/2020 - Matchday 37 238 699	2019/2020 - Matchday 38 \ 241 702
team AFC Bournemouth Arsenal FC Aston Villa FC	2019/2020 - Matchday 37 238 699 269	2019/2020 - Matchday 38 \ 241 702 270
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC	2019/2020 - Matchday 37 238 699 269 37	2019/2020 - Matchday 38 \ 241 702 270 37
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC	2019/2020 - Matchday 37 238 699 269 37 94	2019/2020 - Matchday 38 \ 241 702 270 37 94
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC	2019/2020 - Matchday 37 238 699 269 37 94 55	2019/2020 - Matchday 38 \ 241 702 270 37 94 55
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC	2019/2020 - Matchday 37 238 699 269 37 94 55 98	2019/2020 - Matchday 38 \ 241 702 270 37 94 55 98
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106	2019/2020 - Matchday 38 \ 241 702 270 37 94 55 98 108
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106 190	2019/2020 - Matchday 38 \ 241 702 270 37 94 55 98 108 191
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106 190 66	2019/2020 - Matchday 38 \ 241 702 270 37 94 55 98 108 191 66
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106 190 66 689	2019/2020 - Matchday 38 \ 241 702 270 37 94 55 98 108 191 66 691
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106 190 66 689 295	2019/2020 - Matchday 38 \ 241 702 270 37 94 55 98 108 191 66 691 296
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106 190 66 689 295 527	2019/2020 - Matchday 38 \ 241 \ 702 \ 270 \ 37 \ 94 \ 55 \ 98 \ 108 \ 191 \ 66 \ 691 \ 296 \ 528
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC Fulham FC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106 190 66 689 295 527 221	2019/2020 - Matchday 38 \ 241 \ 702 \ 270 \ 37 \ 94 \ 55 \ 98 \ 108 \ 191 \ 66 \ 691 \ 296 \ 528 \ 221
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC Fulham FC Huddersfield Town AFC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106 190 66 689 295 527 221 50	2019/2020 - Matchday 38 \ 241 \ 702 \ 270 \ 37 \ 94 \ 55 \ 98 \ 108 \ 191 \ 66 \ 691 \ 296 \ 528 \ 221 \ 50
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC Fulham FC Huddersfield Town AFC Hull City AFC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106 190 66 689 295 527 221 50 108	2019/2020 - Matchday 38 \\ 241 \\ 702 \\ 270 \\ 37 \\ 94 \\ 55 \\ 98 \\ 108 \\ 191 \\ 66 \\ 691 \\ 296 \\ 528 \\ 221 \\ 50 \\ 108
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC Fulham FC Huddersfield Town AFC Hull City AFC Leicester City FC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106 190 66 689 295 527 221 50 108 336	2019/2020 - Matchday 38 \ 241 \ 702 \ 270 \ 37 \ 94 \ 55 \ 98 \ 108 \ 191 \ 66 \ 691 \ 296 \ 528 \ 221 \ 50 \ 108 \ 336
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC Fulham FC Huddersfield Town AFC Hull City AFC Leicester City FC Liverpool FC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106 190 66 689 295 527 221 50 108 336 726	2019/2020 - Matchday 38 \\ 241 \\ 702 \\ 270 \\ 37 \\ 94 \\ 55 \\ 98 \\ 108 \\ 191 \\ 66 \\ 691 \\ 296 \\ 528 \\ 221 \\ 50 \\ 108 \\ 336 \\ 729
team AFC Bournemouth Arsenal FC Aston Villa FC Birmingham City FC Blackburn Rovers FC Blackpool FC Bolton Wanderers FC Brighton & Hove Albion FC Burnley FC Cardiff City FC Chelsea FC Crystal Palace FC Everton FC Fulham FC Huddersfield Town AFC Hull City AFC Leicester City FC	2019/2020 - Matchday 37 238 699 269 37 94 55 98 106 190 66 689 295 527 221 50 108 336	2019/2020 - Matchday 38 \ 241 \ 702 \ 270 \ 37 \ 94 \ 55 \ 98 \ 108 \ 191 \ 66 \ 691 \ 296 \ 528 \ 221 \ 50 \ 108 \ 336

Middlesbrough FC	27	27
Newcastle United FC	402	403
Norwich City FC	186	186
Queens Park Rangers FC	115	115
Reading FC	43	43
Sheffield United FC	38	39
Southampton FC	387	390
Stoke City FC	326	326
Sunderland AFC	280	280
Swansea City FC	306	306
Tottenham Hotspur FC	656	657
Watford FC	210	212
West Bromwich Albion FC	343	343
West Ham United FC	432	433
Wigan Athletic FC	129	129
Wolverhampton Wanderers FC	184	184

logo_url

team

team	
AFC Bournemouth	https://raw.githubusercontent.com/faisalydth/M
Arsenal FC	https://raw.githubusercontent.com/faisalydth/M
Aston Villa FC	https://raw.githubusercontent.com/faisalydth/M
Birmingham City FC	https://raw.githubusercontent.com/faisalydth/M
Blackburn Rovers FC	https://raw.githubusercontent.com/faisalydth/M
Blackpool FC	https://raw.githubusercontent.com/faisalydth/M
Bolton Wanderers FC	https://raw.githubusercontent.com/faisalydth/M
Brighton & Hove Albion FC	https://raw.githubusercontent.com/faisalydth/M
Burnley FC	https://raw.githubusercontent.com/faisalydth/M
Cardiff City FC	https://raw.githubusercontent.com/faisalydth/M
Chelsea FC	https://raw.githubusercontent.com/faisalydth/M
Crystal Palace FC	https://raw.githubusercontent.com/faisalydth/M
Everton FC	https://raw.githubusercontent.com/faisalydth/M
Fulham FC	https://raw.githubusercontent.com/faisalydth/M
Huddersfield Town AFC	https://raw.githubusercontent.com/faisalydth/M
Hull City AFC	https://raw.githubusercontent.com/faisalydth/M
Leicester City FC	https://raw.githubusercontent.com/faisalydth/M
Liverpool FC	https://raw.githubusercontent.com/faisalydth/M
Manchester City FC	https://raw.githubusercontent.com/faisalydth/M
Manchester United FC	https://raw.githubusercontent.com/faisalydth/M
Middlesbrough FC	https://raw.githubusercontent.com/faisalydth/M
Newcastle United FC	https://raw.githubusercontent.com/faisalydth/M
Norwich City FC	https://raw.githubusercontent.com/faisalydth/M
Queens Park Rangers FC	https://raw.githubusercontent.com/faisalydth/M
Reading FC	https://raw.githubusercontent.com/faisalydth/M
Sheffield United FC	https://raw.githubusercontent.com/faisalydth/M
Southampton FC	https://raw.githubusercontent.com/faisalydth/M
Stoke City FC	https://raw.githubusercontent.com/faisalydth/M

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Sunderland AFC
Swansea City FC
                            https://raw.githubusercontent.com/faisalydth/M...
Tottenham Hotspur FC
                            https://raw.githubusercontent.com/faisalydth/M...
                            https://raw.githubusercontent.com/faisalydth/M...
Watford FC
West Bromwich Albion FC
                            https://raw.githubusercontent.com/faisalydth/M...
West Ham United FC
                            https://raw.githubusercontent.com/faisalydth/M...
                            https://raw.githubusercontent.com/faisalydth/M...
Wigan Athletic FC
Wolverhampton Wanderers FC
                            https://raw.githubusercontent.com/faisalydth/M...
```

[36 rows x 381 columns]

```
[15]: # save to CSV
goalsScoredPivot.to_csv('Table-GoalsScored.csv', index = True)
```