

Notebook-EPL1020

November 24, 2021

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: <https://raw.githubusercontent.com/openfootball/football.json/master/2010-11/en>

```
[2]: urlLeft = 'https://raw.githubusercontent.com/openfootball/football.json/master/'
urlRight = '/en.1.json'

seasonInt1 = list(range(2010, 2021)) # season start
seasonInt2 = list(range(11, 22)) # season end

seasonStr1 = []
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'] #_
            ↪pythonData[i]['rounds'][i]['matches'][i]['team1'] value
            awayteamValue = x3['team2'] #_
            ↪pythonData[i]['rounds'][i]['matches'][i]['team2'] value
            hometeamScoreValue = x3['score']['ft'][0] #_
            ↪pythonData[i]['rounds'][i]['matches'][i]['score']['ft'][0] value
            awayteamScoreValue = x3['score']['ft'][1] #_
            ↪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] #_
            ↪pythonData[i]['matches'][i]['score']['ft'][0] value
```

```

        awayteamScoreValue = x2['score']['ft'][1] #
→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]:
      season  matchday  date  home_team \
1064 Premier League 2020/21 Matchday 31 2021-04-10 Liverpool FC
2150 Premier League 2015/16 Matchday 26 2016-02-13 Norwich City FC
627  Premier League 2011/12 Matchday 25 2012-02-11 Manchester United FC
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

      away_team  home_goals  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
1954  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	season	4180 non-null	object
1	matchday	4180 non-null	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
6	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]: dfTemp = dfMatches.loc[dfMatches['home_goals'].isnull() |
    ↪dfMatches['away_goals'].isnull()] # filter by null value
dfTemp[['season', 'matchday', 'date', 'home_team', 'away_team']].describe() #
    ↪string statistics
```

```
[8]:
```

	season	matchday	date	home_team \
count	301	301	301	301
unique	1	31	40	20
top	Premier League 2020/21	Matchday 23	2021-01-30	Burnley FC
freq	301	10	10	16

	away_team
count	301
unique	20
top	Manchester United FC
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]: # remove data
dfMatchesClean = dfMatches.copy()
dfMatchesClean = dfMatchesClean.loc[~(dfMatches['season'] == 'Premier League_
↳2020/21')]

# change data type
dfMatchesClean['date'] = pd.to_datetime(dfMatchesClean['date']) # str to date
dfMatchesClean = dfMatchesClean.astype({
    'home_goals' : 'int64', # float to int
    'away_goals' : 'int64' # float to int
})

dfMatchesClean.head(2)
```

```
[10]:
```

		season	matchday	date	home_team \
0	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
0	Fulham FC	0	0
1	Blackpool FC	0	4

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

2 DATA PROCESSING

```
[11]: dfMatchesComplete = dfMatchesClean.copy()

# split columns
seasonStartList = dfMatchesComplete['season'].str.split(expand = True)[2].str.
↳split('/', expand = True)[0]
matchdayList = dfMatchesComplete['matchday'].str.split(expand = True)[1]
dfMatchesComplete['season'] = seasonStartList
dfMatchesComplete['matchday'] = matchdayList
```

```

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      date      home_team      away_team \
0         2010          1  2010-08-14  Aston Villa FC  West Ham United FC
1         2010          1  2010-08-14  Blackburn Rovers FC      Everton FC

  home_goals  away_goals
0          3          0
1          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:
        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      date      home_team      away_team \
0         2010          1  2010-08-14  Aston Villa FC  West Ham United FC
1         2010          1  2010-08-14  Blackburn Rovers FC      Everton FC

  home_goals  away_goals  is_home_cleansheet  is_away_cleansheet  home_point \
0          3          0                False                True          3
1          1          0                False                True          3

  away_point  home_result  away_result
0          0          Won          Loss
1          0          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    date                team  side \
1            2010         1 2010-08-14  Birmingham City FC  Away
2            2010         1 2010-08-14  Blackburn Rovers FC  Home
3799         2014        38 2015-05-24   West Ham United FC  Away
3800         2015         1 2015-08-08     AFC Bournemouth  Home
7598         2019        38 2020-07-26   West Ham United FC  Home
7599         2019        38 2020-07-26  Wolverhampton Wanderers FC  Away

    goals_scored  goals_conceded  is_cleansheet  point result
1              2              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
7599           0              2           True      0   Loss

```

```

[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

	2010/2011 - Matchday 7	2010/2011 - Matchday 8 \
team		
AFC Bournemouth	0	0
Arsenal FC	16	18
Aston Villa FC	9	9
Birmingham City FC	7	8
Blackburn Rovers FC	7	7
Blackpool FC	11	13
Bolton Wanderers FC	10	12
Brighton & Hove Albion FC	0	0
Burnley FC	0	0
Cardiff City FC	0	0
Chelsea FC	23	23
Crystal Palace FC	0	0
Everton FC	6	8
Fulham FC	8	9
Huddersfield Town AFC	0	0
Hull City AFC	0	0
Leicester City FC	0	0
Liverpool FC	7	7
Manchester City FC	9	12

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

	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

	2019/2020 - Matchday 37	2019/2020 - Matchday 38 \
team		
AFC Bournemouth	238	241
Arsenal FC	699	702
Aston Villa FC	269	270
Birmingham City FC	37	37
Blackburn Rovers FC	94	94
Blackpool FC	55	55
Bolton Wanderers FC	98	98
Brighton & Hove Albion FC	106	108
Burnley FC	190	191
Cardiff City FC	66	66
Chelsea FC	689	691
Crystal Palace FC	295	296
Everton FC	527	528
Fulham FC	221	221
Huddersfield Town AFC	50	50
Hull City AFC	108	108
Leicester City FC	336	336
Liverpool FC	726	729
Manchester City FC	853	858
Manchester United FC	679	681

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	
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...
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Sunderland AFC	https://raw.githubusercontent.com/faisalydth/M...
Swansea City FC	https://raw.githubusercontent.com/faisalydth/M...
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Wigan Athletic FC	https://raw.githubusercontent.com/faisalydth/M...
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)
```