# Story of EPL Teams Leicester's Road to Glory and becoming the Premier League Champion

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## Project Goal and Description:

To extract EPL match statistics for the 2015-16 season, to perform descriptive analysis and express how Leicester won the Premier League title through vivid and elusive data visualization techniques.

We aim to visualize that all teams in the given EPL season, where did a given team stand as compared to others in given EPL seasons and how did they progress eventually with every season. In the end, we also want to determine how Leicester clinched the trophy and was the most dominant EPL team in the given tenure.

## Data Set:

Source: http://football-data.co.uk/englandm.php

Dataset in usage:

1. Premier League Dataset
2. Division League Dataset

This data has the following features:

| Attribute | Description | Range and Values | Data Type | Attribute Type |
|-----------|-------------|------------------|-----------|----------------|
| Div | Division Level of the Match | E0: EPL<br>E1: Division League 1 | Char /String | Categorical |
| Date | Date of the Match Played | 14/08/93 to Present | Char/String | Temporal |
| HomeTeam | Name of the Home Team | Name of the 20 Teams playing league during the season | Char/String | Categorical |
| AwayTeam | Name of the Opposing Away Team | Name of the 20 Teams playing league during the season | Char/String | Categorical |
| FTHG | Total goals at Full-Time by the Home Team | 0 to max goals | Numerical | Quantitative |
| FTAG | Total goals at Full-Time by the Away Team | 0 to max goals | Numerical | Quantitative |
| FTR | Type of the Winning Team (Home/Away) | H: Home, A: Away | Numerical | Categorical |

**Analytical Questions and Proxy Tasks:**

1. **What is the position of a given team during the given season?**
   **Proxy Tasks:**
      1. What are the total points scored by a given team in a given season?
      2. What is the position of a given team as compared to other teams in a given season?

2. **What is the total number of goals scored by a given team in the home and away matches? How many of them did they scored against a particular opponent over a season?**
   **Proxy Tasks:**
      1. What are the total goals scored by a given team in a given season in home matches?
      2. What are the total goals scored by a given team in a given season in away matches?
      3. What are the total goals scored by a given team against every other opponent played in that given season?

3. **Which team were relegated and promoted from EPL in a given season?**
   **Proxy Tasks:**
      1. Which are the bottom 3 teams in a given EPL season?
      2. Which are the top 3 teams in a given Division 1 season?

4. **What was the position of a given team at the end of each season over all years?**
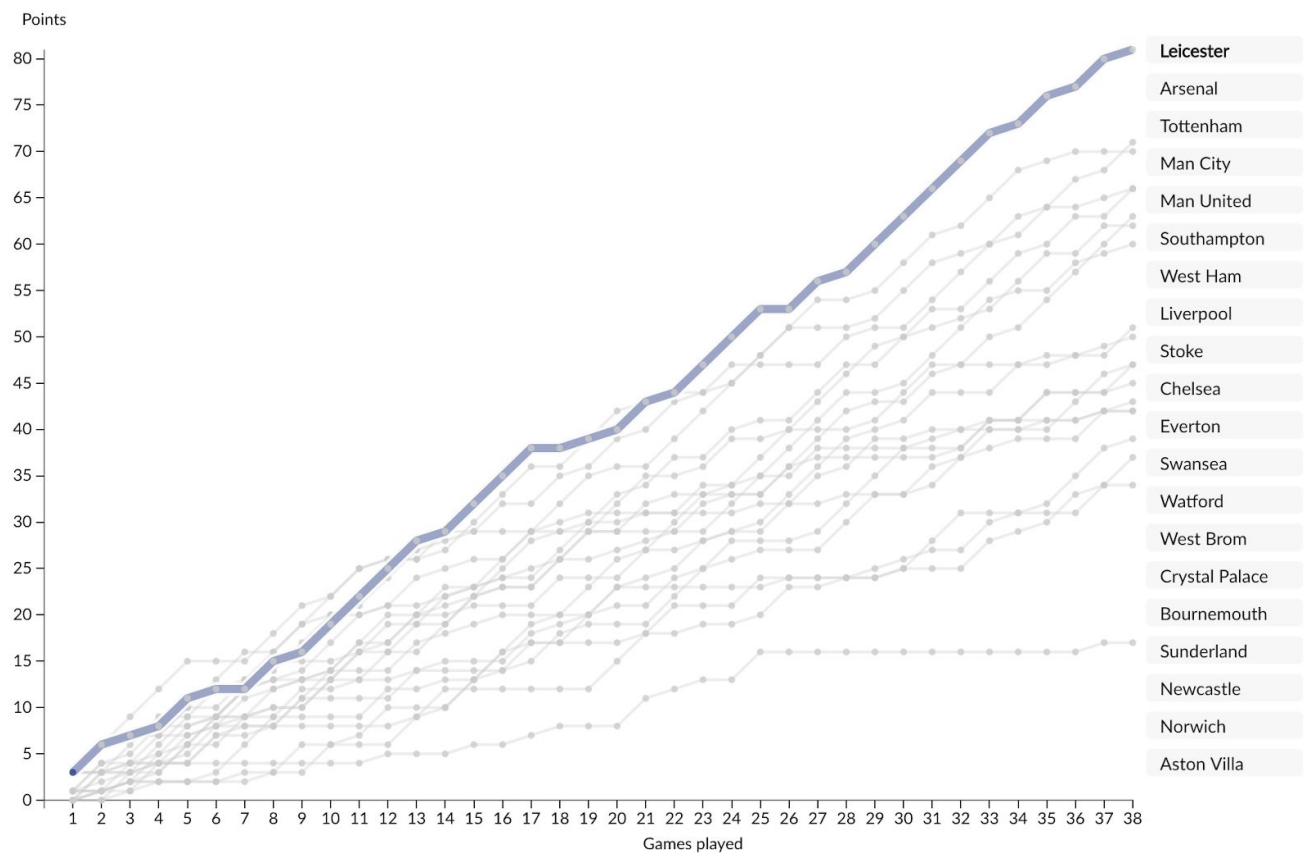   **Proxy Tasks:**
      1. How many points did a given team score as compared to every other team in the given seasons?
      2. What was the positional trend based on the points in a given season?

5. **Which club is leading champions over all seasons in EPL?**
   **Proxy Tasks:**
      1. Which team topped the points table in a given EPL season?
      2. How many times did the given team top the table?

# Story Design

## Data Analysis

1. **What is the position of a given team during the given season?**

   The below visualization shows analysis of a given team with respect to other teams during the given season. It gives us the insights on the total points scored by a given team and the position of a given team as compared to other teams.

   **Example Visualization for Season 2015-16 where Leicester won the season:**

**2.** **What is the total number of goals scored by a given team in the home and away matches? How many of them did they scored against a particular opponent over a season?**

The below visualization shows performance of a given team in their home and away games. From this, we can easily identify if the given team is scoring well against particular opponent in home and away matches.
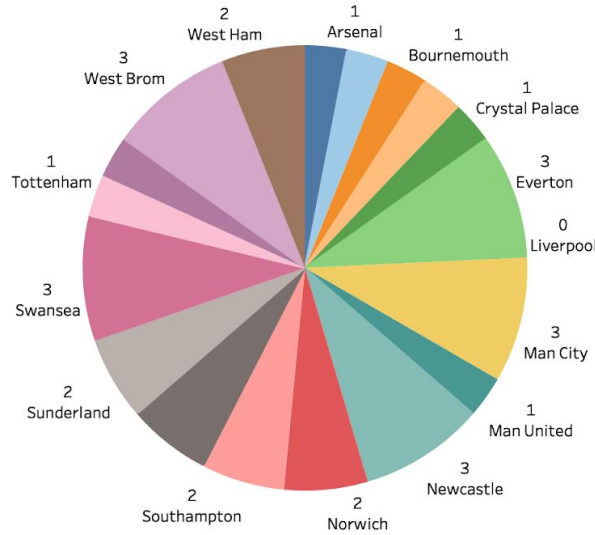
**Example Visualization for Season 2015-16 showing Leicester performance in home and away games:**
Leicester City had scored more number of goals against Swansea and Sunderland in home matches and against Everton and Newcastle in away matches.

Leicester Scoring Goals in Home Games V/s Away Teams
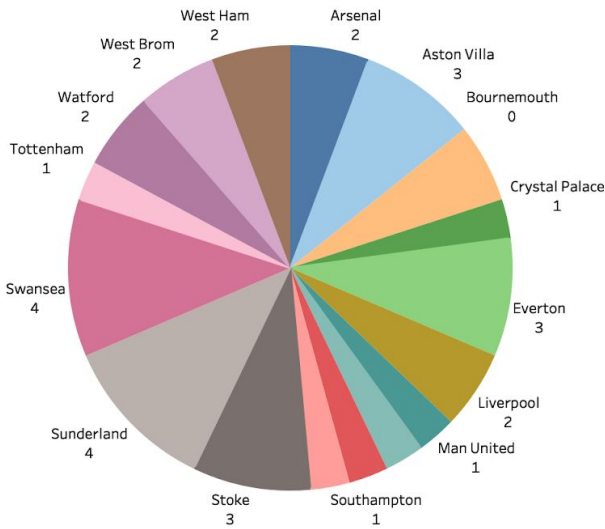
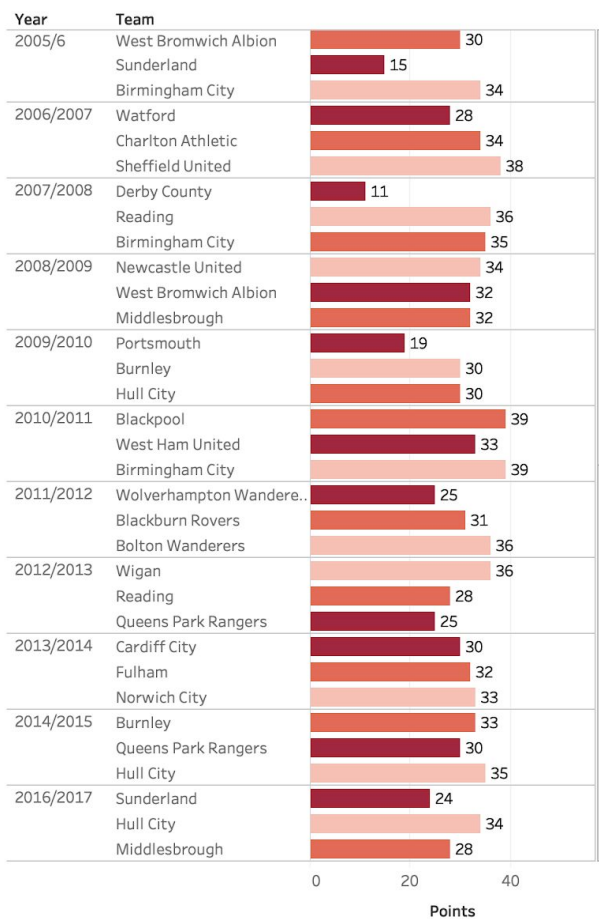Leicester Scoring Goals in Away Games V/s Home Teams

## 3. Which team were relegated and promoted from EPL in a given season?

Bottom 3 are relegated to Division 1 at the end of EPL Season while Top 3 teams in Division 1 Championship are promoted to play in EPL for next season. The below visualization answers our both of the questions showing relegated and promoted teams for each season.
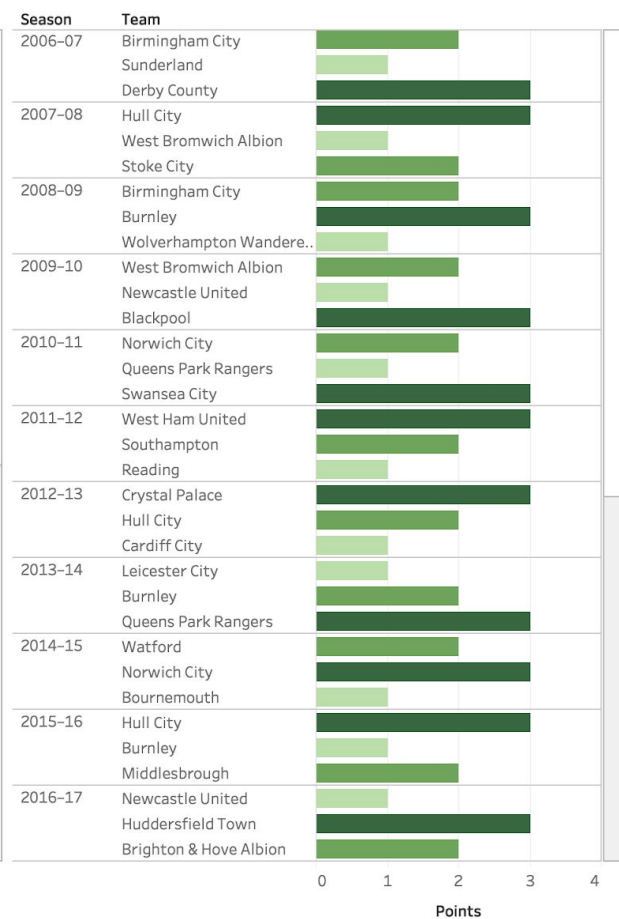
**Example Visualization showing relegated and promoted teams from/to EPL between 2005/06 and 2016/17 Seasons:**

The reason for analyzing and visualizing this was to depict the time when Leicester was relegated from the premier league in the year 2003 and how they rose back to the occasion and promoted back to the premier league in the year 2014, which was the year before they won the Premier League title.

### Relaged Teams from EPL over all seasons

| Year | Team | Points |
|------|------|--------|
| 2005/6 | West Bromwich Albion | 30 |
| | Sunderland | 15 |
| | Birmingham City | 34 |
| 2006/2007 | Watford | 28 |
| | Charlton Athletic | 34 |
| | Sheffield United | 38 |
| 2007/2008 | Derby County | 11 |
| | Reading | 36 |
| | Birmingham City | 35 |
| 2008/2009 | Newcastle United | 34 |
| | West Bromwich Albion | 32 |
| | Middlesbrough | 32 |
| 2009/2010 | Portsmouth | 19 |
| | Burnley | 30 |
| | Hull City | 30 |
| 2010/2011 | Blackpool | 39 |
| | West Ham United | 33 |
| | Birmingham City | 39 |
| 2011/2012 | Wolverhampton Wandere.. | 25 |
| | Blackburn Rovers | 31 |
| | Bolton Wanderers | 36 |
| 2012/2013 | Wigan | 36 |
| | Reading | 28 |
| | Queens Park Rangers | 25 |
| 2013/2014 | Cardiff City | 30 |
| | Fulham | 32 |
| | Norwich City | 33 |
| 2014/2015 | Burnley | 33 |
| | Queens Park Rangers | 30 |
| | Hull City | 35 |
| 2016/2017 | Sunderland | 24 |
| | Hull City | 34 |
| | Middlesbrough | 28 |

### Promoted Teams from EPL over all seasons

| Season | Team | Points |
|--------|------|--------|
| 2006–07 | Birmingham City | 2 |
| | Sunderland | 1 |
| | Derby County | 3 |
| 2007–08 | Hull City | 3 |
| | West Bromwich Albion | 1 |
| | Stoke City | 2 |
| 2008–09 | Birmingham City | 2 |
| | Burnley | 3 |
| | Wolverhampton Wandere.. | 1 |
| 2009–10 | West Bromwich Albion | 2 |
| | Newcastle United | 1 |
| | Blackpool | 3 |
| 2010–11 | Norwich City | 2 |
| | Queens Park Rangers | 1 |
| | Swansea City | 3 |
| 2011–12 | West Ham United | 3 |
| | Southampton | 2 |
| | Reading | 1 |
| 2012–13 | Crystal Palace | 3 |
| | Hull City | 2 |
| | Cardiff City | 1 |
| 2013–14 | Leicester City | 1 |
| | Burnley | 2 |
| | Queens Park Rangers | 3 |
| 2014–15 | Watford | 2 |
| | Norwich City | 3 |
| | Bournemouth | 1 |
| 2015–16 | Hull City | 3 |
| | Burnley | 1 |
| | Middlesbrough | 2 |
| 2016–17 | Newcastle United | 1 |
| | Huddersfield Town | 3 |
| | Brighton & Hove Albion | 2 |

**4. What was the position of a given team at the end of each season over all years?**

The below visualization shows the trend of the given team in terms of position and points scored in that season at the end of each season over all years.

**Example Visualization of Leicester over all the seasons:**
Leicester City won the season 2015/2016 with 81 points.

Leicester City EPL Positions with Points over all season in EPL
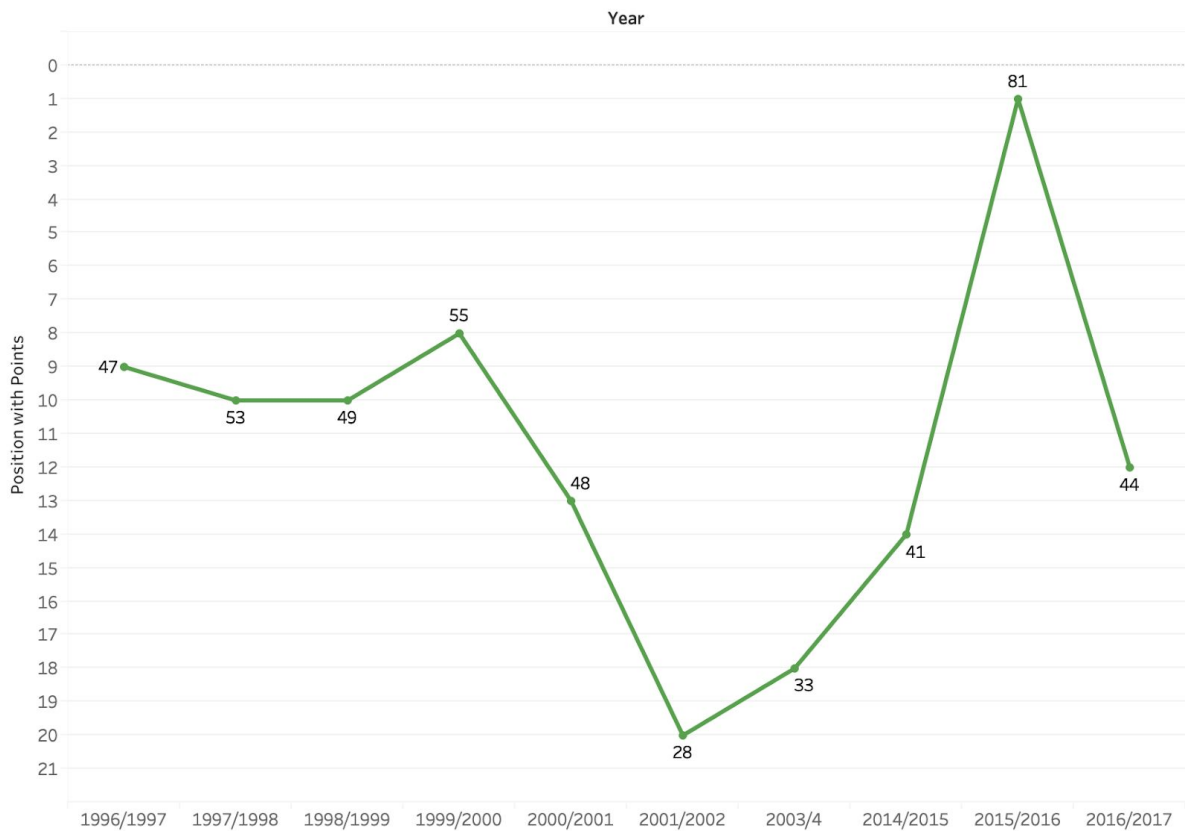


The trend of sum of Pos for Year. The marks are labeled by sum of Pts. The data is filtered on Team, which keeps Leicester City. The view is filtered on Year, which keeps 10 of 66 members.

## 5. Which club is leading champions over all seasons in EPL?

The below visualization shows the club who won the particular season along with total number of titles won.

**Example Visualization of leading champions over all the seasons:**
Manchester United is the leading champion here, winning over 12 titles.
The reason to visualize and analyze his was to portray how Leicester against all odds and the big dominant teams in the last era won the title.
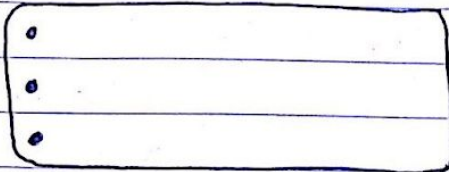
**Leading Champions over all seasons in EPL**

Team

| Manchester United | Chelsea | Arsenal | Manchester City | Blackburn Rovers | Leicester City |
|---|---|---|---|---|---|
| 1993/1994 | | | | | |
| 1995/1996 | | | | | |
| 1996/1997 | | | | | |
| 1998/1999 | | | | | |
| 1999/2000 | | | | | |
| 2000/2001 | | | | | |
| 2002/3 | | | | | |
| 2006/2007 | 2004/5 | | | | |
| 2007/2008 | 2005/6 | | | | |
| 2008/2009 | 2009/2010 | 1997/1998 | | | |
| 2010/2011 | 2014/2015 | 2001/2002 | 2011/2012 | | |
| 2012/2013 | 2016/2017 | 2003/4 | 2013/2014 | 1994/1995 | 2015/2016 |
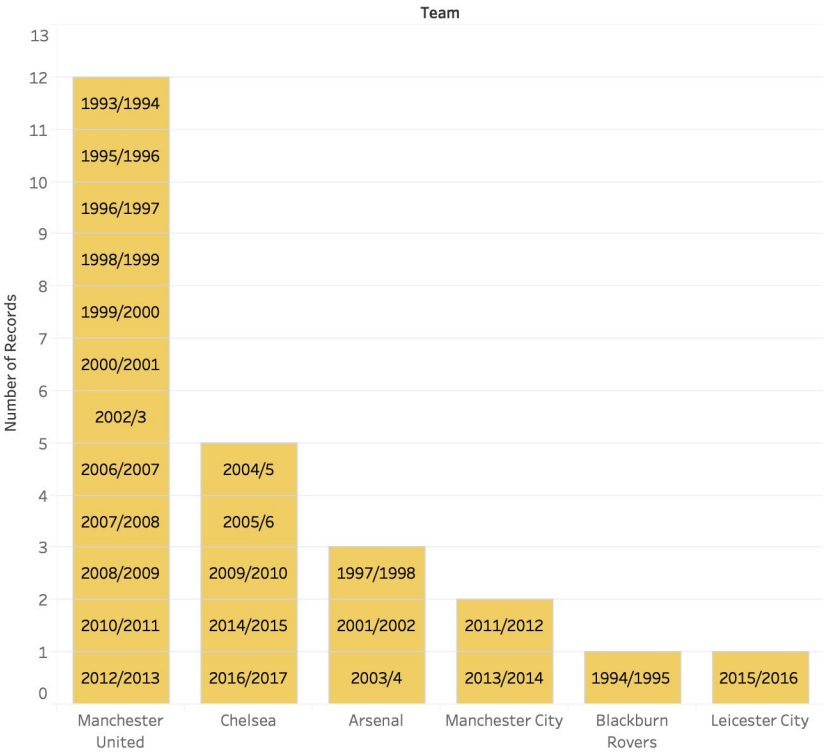
Sum of Number of Records for each Team. The marks are labeled by Year. Details are shown for Year. The data is filtered on Pos, which keeps 1. The view is filtered on Year, which keeps 24 of 66 members.
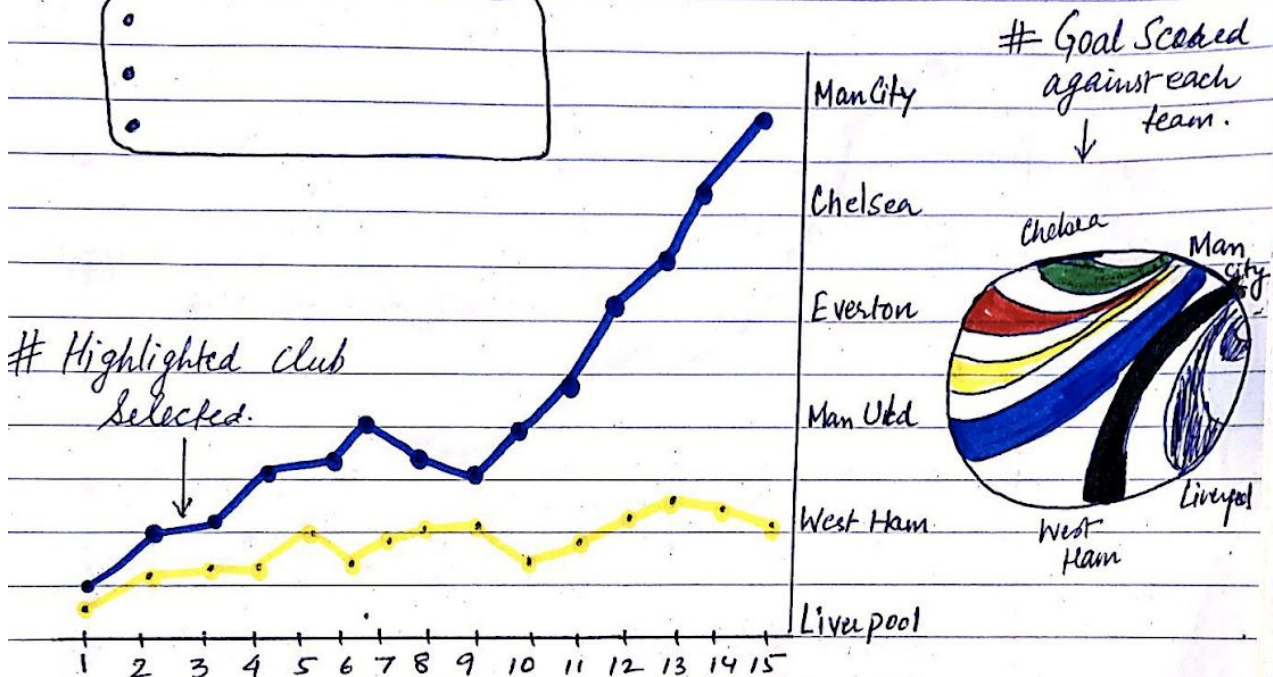
# Storyboard

## ROAD MAP 1

\# News Changes as we Scroll.

NEWS

\# Goal Scored against each team.

\# Highlighted club Selected.



Man City
Chelsea
Everton
Man Utd
West Ham
Liverpool

1  2  3  4  5  6  7  8  9  10  11  12  13  14  15

| 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
| 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |

Our prime objective in our Storyboarding is to select
a football club, (deicester city) and show its
performance against other clubs over the years.
the above graph shows the overall position of the
club during various seasons.
Furthermore, we will select a particular season and
focus on the club's journey towards glory.
We name that story as "Roads to Glory".
We will portray its ups and downs and how it
overcame its roadblocks to prove themselves as Champions!!

# ROAD MAP 2

1993
1994

1994
1995

1995
1996

1996
1997

1997
1998

1998
1999

2000
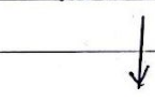2001

2001
2002

2002
2003

2003
2004

2004
2005

# News Changes as we Scroll.

NEWS

ManCity

Chelsea

Everton

Man Utd

West Ham

Liverpool.

# Highlighted Club
selected
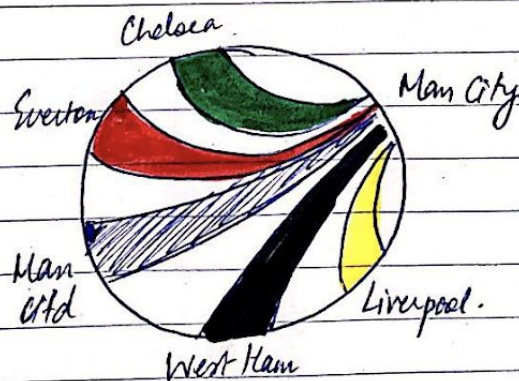
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Chelsea

Everton

Man City

Man
Utd

Liverpool.

West Ham

# Goals Scored against each team.

# Leicester Story Highlights to Glory

Sample storyline which will be displayed in the project visualization to tell story of leicester of how they achieved the throne.

**Rise and Fall from Premier league to the third tier**
- Leicester moved into the new 32,500-seat Walkers Stadium at the start of the 2002-03 season, ending 111 years at Filbert Street. Walkers, the Leicestershire-based crisp manufacturers, acquired the naming rights for a ten-year period.
- In October 2002, the club went into administration with debts of £30 million.
- Manager Adams was banned from the transfer market for most of the season, even after the club was rescued with a takeover by a consortium led by Gary Lineker.
- Adams guided Leicester to the runners-up spot in Division One and automatic promotion back to the Premier League with more than 90 points. However, Leicester lasted only one season in the top flight and was relegated to the newly labeled Championship, previously known as Division One.
- 2004 - Adams resigned as manager and Craig Levein was appointed as the boss who proved to be an unsuccessful while his 15 months tenure before being replaced by assistant manager Rob Kelly as the new manager.
- On 22 November, Ian Holloway was appointed the manager, and he became the first Leicester manager in over 50 years to win his first league match in charge, beating Bristol City 2-0. However, this success did not last, and Leicester was relegated from the Championship at the end of the 2007-08 season. Holloway left by mutual consent after less than a season at the club, being replaced by Nigel Pearson.

**Third tier to the premier league**
- The 2008-09 campaign was Leicester's first season outside the top two levels of English football, but they hit this nadir only seven years before becoming the 2015-16 Premier League champions - the fastest seven-year rise to the top of the English football league system apart from Ipswich Town in 1962.
- Following relegation to the third tier the previous season, Leicester returned to the Championship at the first attempt in 2008-09, finishing as champions of League One after a 2-0 win at Southend United, with two matches in hand.

**Rising back to the premier league in 2014 after a ten-year absence**
- In 2014, Leicester's march up the league system hit a breakthrough. Their 2-1 home win over Sheffield Wednesday, combined with losses by Queens Park Rangers and Derby County, allowed Leicester City to clinch promotion to the Premier League after a ten-year absence.
- Later that month, a win at Bolton saw Leicester become the champions of the 2013-14 Championship, the seventh time they had been champions of England's second tier.

**BreakThrough season of 2015-2016 of becoming the new Premier League champions**

- Leicester reacted by appointing former Chelsea manager Claudio Ranieri as their new manager for the new 2015-16 Premier League season. Under Ranieri, the club made an exceptional start to the season. Striker Jamie Vardy scored 13 goals over 11 consecutive matches from August to November, breaking Ruud van Nistelrooy's Premier League record of scoring in 10 consecutive matches. On 19 December, Leicester defeated Everton 3-2 at Goodison Park to top the Premier League on Christmas Day, having been bottom exactly 12 months earlier. A 2-0 victory at Sunderland on 10 April, coupled with Tottenham Hotspur's 3-0 win over Manchester United, ensured Leicester's qualification for the UEFA Champions League for the first time in their history.
- Leicester won the Premier League on 2 May 2016 after Tottenham threw away a 2-0 lead against Chelsea, drawing 2-2 at the "Battle of Stamford Bridge".This completed the fastest seven-year rise to the title except for Ipswich Town in 1962, and Leicester faced a far more unequal top tier than Ipswich did back then. Bookmakers thought Leicester's victory was so unlikely that Ladbrokes and William Hill offered odds of 5,000-1 for it at the start of the season. Neither bookmaker had ever paid out such long odds, and the trophy resulted in the largest payout in British sporting history with total winnings of £25 million.

# Implementation (Phase I)

## List of Items Implemented:

### 1. Data Transformation:

- As Leicester City won the 2015-16 Premier League season, we transformed the data as per the following:

**Transformation I (Season Game Progress Tracker):**



**Transformed Data Attributes Description:**

| Attribute | Description | Range and Values | Data Type | Attribute Type |
|---|---|---|---|---|
| Team | Name of the Playing Team | Name of the 20 Teams playing league during the season | String | Categorical |
| Match No. | Game Number of the playing team | 1 to 38 | Numerical | Ordinal |
| Current Points | Total Points of the team after playing the match | 0 to max points earned | Numerical | Quantitative |
| Goal Difference | Difference of goals against the opponent team in the match | negative to positive difference | Numerical | Quantitative |

- This transformation will be used in our first interactive visualization (EPL Team Progress Tracker) which will show how Leicester City progressed game by game.

**Transformation II (Performance Analyzer):**



**Transformed Data Attributes Description:**

| Attribute | Description | Range and Values | Data Type | Attribute Type |
|-----------|-------------|------------------|-----------|----------------|
| PlayingTeam | Name of the Playing Team | Name of the 20 Teams playing league during the season | String | Categorical |
| Opponent Team | Name of the Opponent Team | Name of the 20 Teams playing league during the season | String | Categorical |
| Total Goals | Aggregated Goals scored by playing team against opponent team in all EPL matches | 0 to max goals scored | Numerical | Quantitative |

- This transformation will be used in our second interactive visualization (EPL Team Performance Tracker) which will show against which opponents Leicester City came strong.

## 2. Programming Visualizations using D3:
## Visualization 1:

### EPL Season 2015-'16 Game Progress Tracker
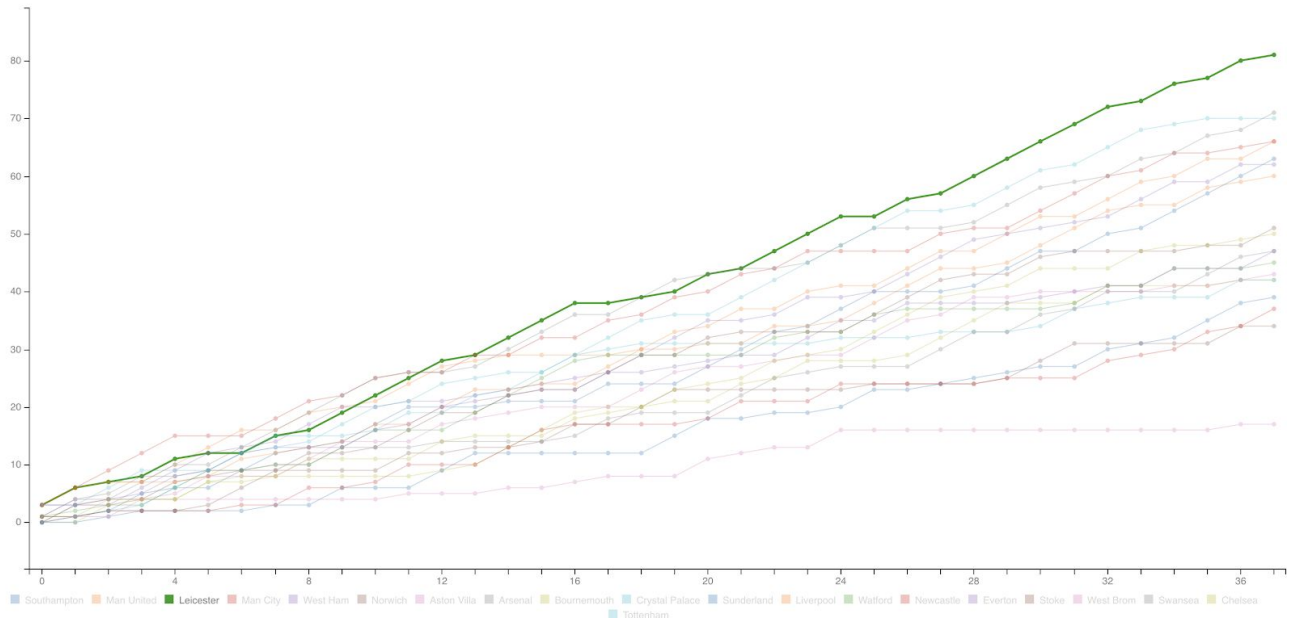


- A D3 Interactive Visualization is created to show the journey of Leicester City towards the EPL Triumph.
- It shows the game-by-game analysis that shows the path that Leicester City took to what many are calling the most remarkable championship in professional soccer history and beat the odds of 5000-to-1.
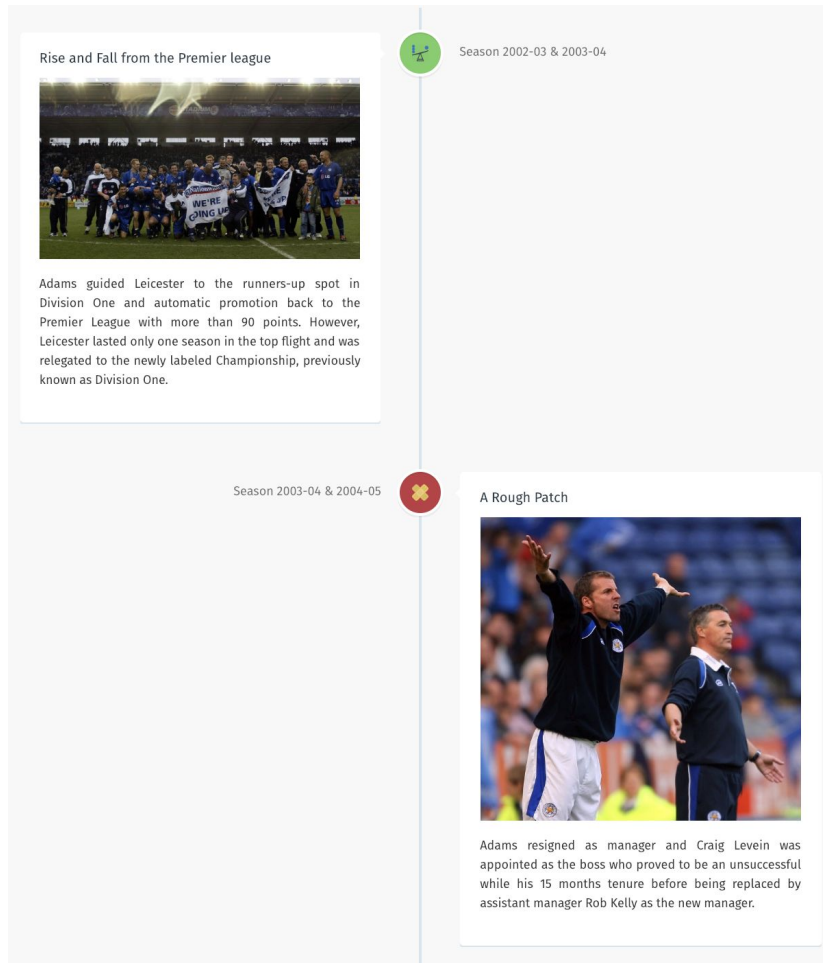
## Visualization 2 (EPL Goal Score Tracker):
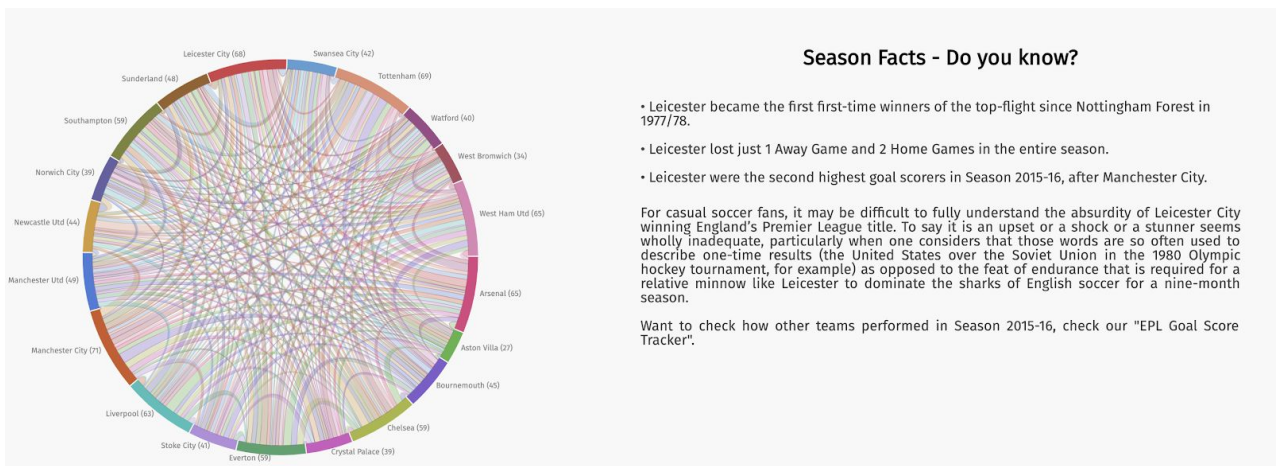


- A D3 Interactive Visualization is created to show the performance of all teams to a particular opponent in season 2015-'16.
- From this visualization, we can analyze how Leicester City aced against a particular team in season 2015-'16.

# Implementation (Phase II)

### 3. Leicester City Timeline Chart (Vertical Storyboard):



Rise and Fall from the Premier league

Adams guided Leicester to the runners-up spot in Division One and automatic promotion back to the Premier League with more than 90 points. However, Leicester lasted only one season in the top flight and was relegated to the newly labeled Championship, previously known as Division One.

Season 2002-03 & 2003-04

Season 2003-04 & 2004-05

A Rough Patch

Adams resigned as manager and Craig Levein was appointed as the boss who proved to be an unsuccessful while his 15 months tenure before being replaced by assistant manager Rob Kelly as the new manager.

- A vertical timeline which depicts the story of Leicester over the years until they reach EPL Season 2015-'16.
- From this visualization, we can understand the build-up of the story of how Leicester City overcome their failures and rise up to the EPL Throne.

**4. Dynamic Game News Events (Horizontal Timeline):**
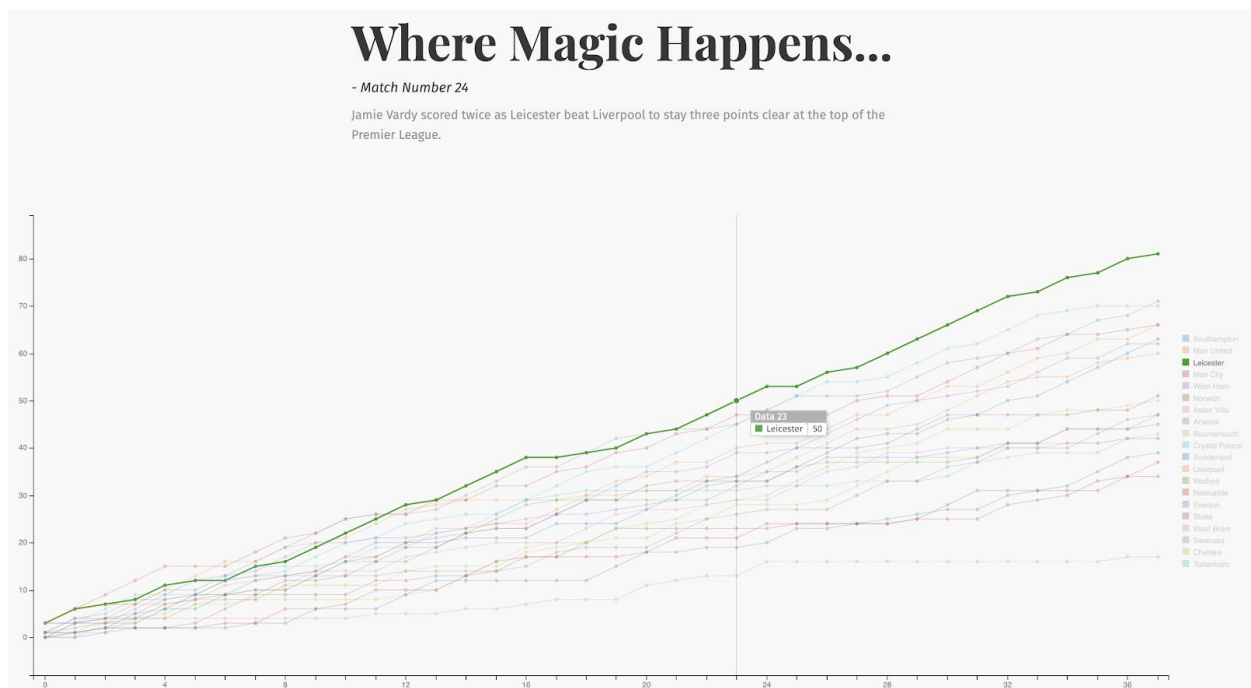


- A horizontal slider which depicts the game-by-game highlights of the matches played by Leicester City in Season 2015-'16.
- The example shown above shows that when we hover over the game number in the line chart, you can view the highlights of the matches and understand the journey of the team to win the championship.

# Development Work

## Submission Link (Git Classroom)

| Git Repository | https://github.com/NYU-VIS-FALL2018/storytelling-group-20-story-of-epl-champions |
|---|---|
| Deployment Website (Current Version) | https://nyu-vis-fall2018.github.io/storytelling-group-20-story-of-epl-champions/ |

**\*\*Note: The development work is carried in incremental fashion throughout last 2 weeks by the team and can be viewed in our personal repository. Git Classroom is used for the purpose of submission.**

# Changelog

- **Nov 27, 2018**
  As per the suggestions by the Instructor, we are now focussing on one premier league team (Leicester City) instead of all to cover their Premier League Triumph.
- **Dec 5, 2018**
  Updated the Multi-line Chart to focus on the Leicester City instead of focussing on all teams as per instructor's comments.
- **Dec 12, 2018**
  - Updated the Multi-line Chart to display news highlights for Leicester based on the match number being selected.
  - Update the Goal Score tracker to display Leicester on the Top to keep it as the team in Focus as per instructor's comments.