

### \*CHALLENGE 1\*

Here's the challenge task to demonstrate your hands-on skills working with data.

You can download the files here:

<http://www.football-data.co.uk/mmz4281/1617/E0.csv> (data)

<http://www.football-data.co.uk/notes.txt> (explanatory notes)

Please answer the following tasks/questions - it should take no more than 1 hour - and send the results back to me as a pdf including your analysis code:

1. Load the data, examine it and check for missing values etc
2. Filter for the team 'Arsenal'
3. Plot Arsenal's goals per game over time
4. Plot Arsenal's total goals per calendar month
5. Calculate Arsenal's average goals, when they play at home and when they play away from home
6. (Bonus) Examine the correlation of the home team corners and the away team corners
7. (Bonus) Suggest a statistical model for the number of corners per game

### \*CHALLENGE 2\*

This challenge is about the way you think about business problems.

Tonsser has observed that long-term retention is significantly lower in country A than country B, and that long-term retention is significantly lower on mobile platform X than mobile platform Y. Please write a brief project plan (e.g. half a page of bullet points) to describe how you would investigate these effects.