Attrition Case Study for client

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The problem

Context

The client is concerned about retention of its high performing employees.

Problem statement

- How can the client improve retention of high performing employees?

- How can the client be able to predict exactly which of its employees is most at risk of leaving?

Challenges Deep-dive

What changes do we need to make to our operating model?

Why are people leaving right now?

How can we retain more high performing employees?

What can we do about it?

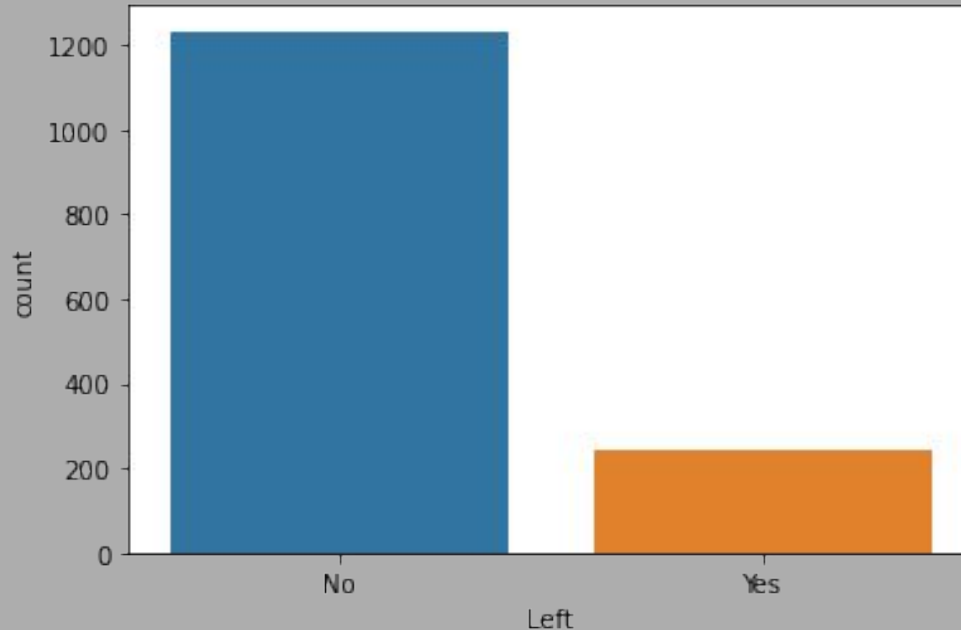How can we predict who will leave?

Method

Utilize Python to study provided data and provide insights:

- Identify specific trends for employees leaving
- Create a profile of a 'quitter'.
- Make recommendations to improve management of high performing employees.

Implementation

Current Situation

20% of employees featured on dataset have quit their job. This is a significant turnaround figure so some insights on why? are needed. At present if we were to classify our model only using 'NO' we would get an 80% accuracy, we need to build a model the improves this initial metric.
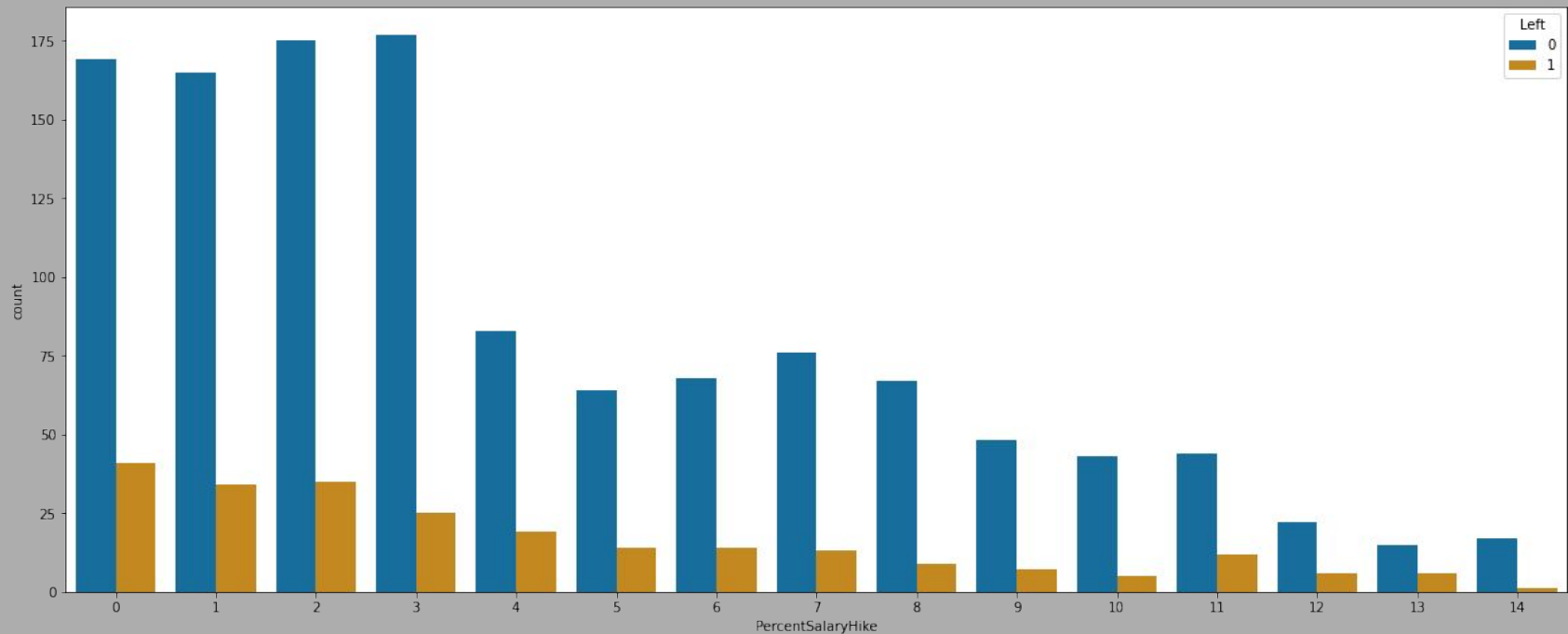
EDA
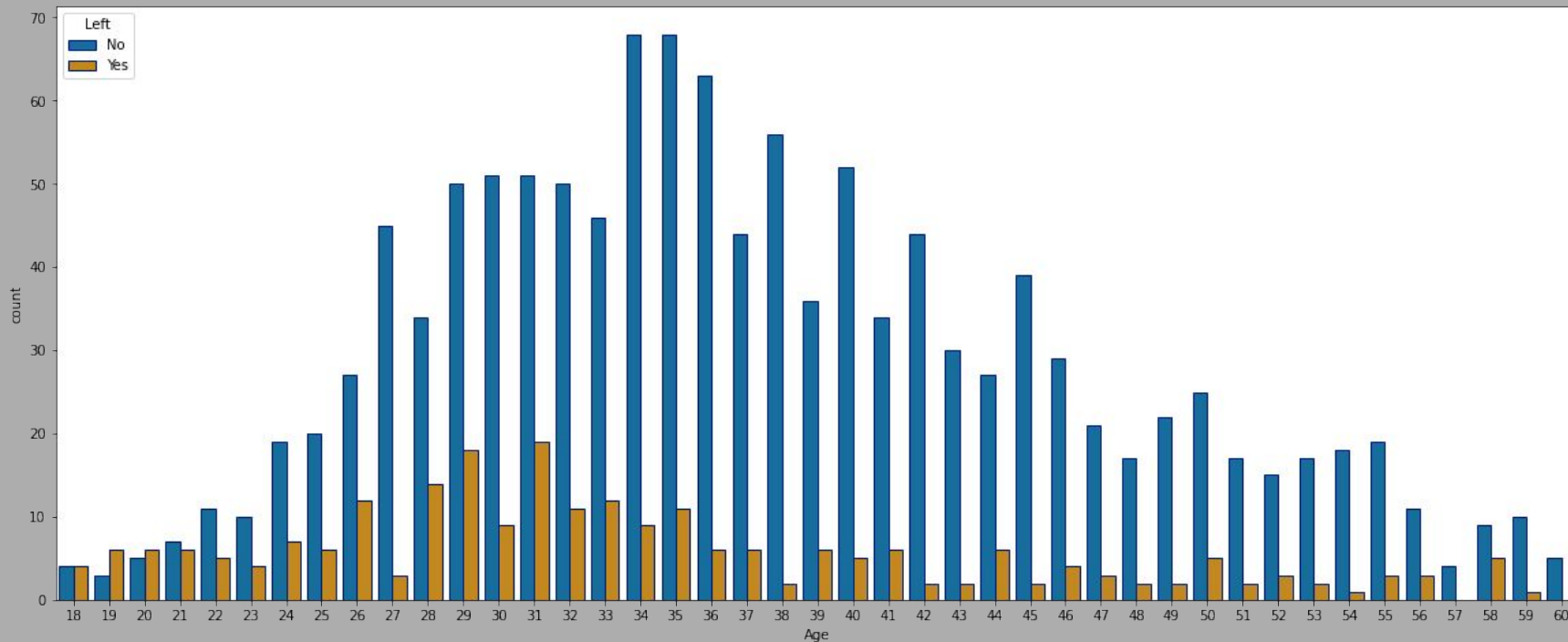
The segment of age with more employees quitting is between 28 and 35. This is the key segment that the client needs to focus on.
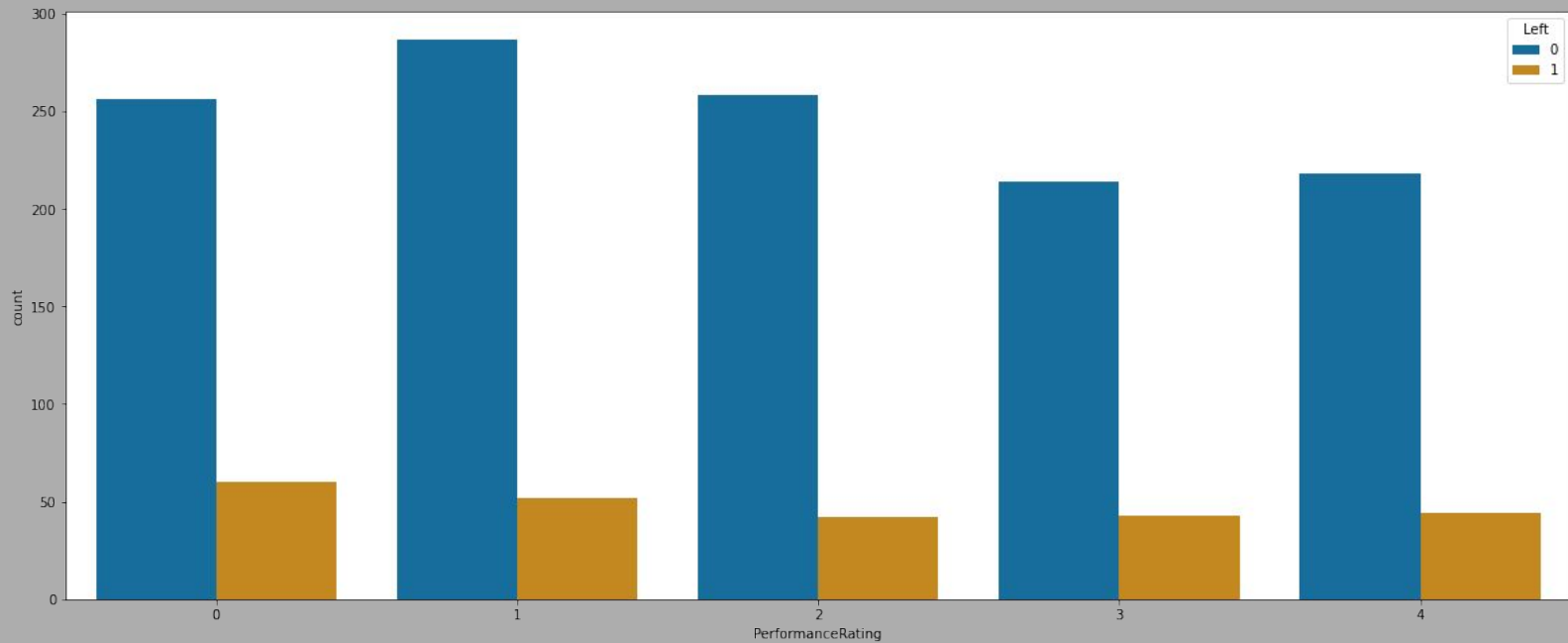
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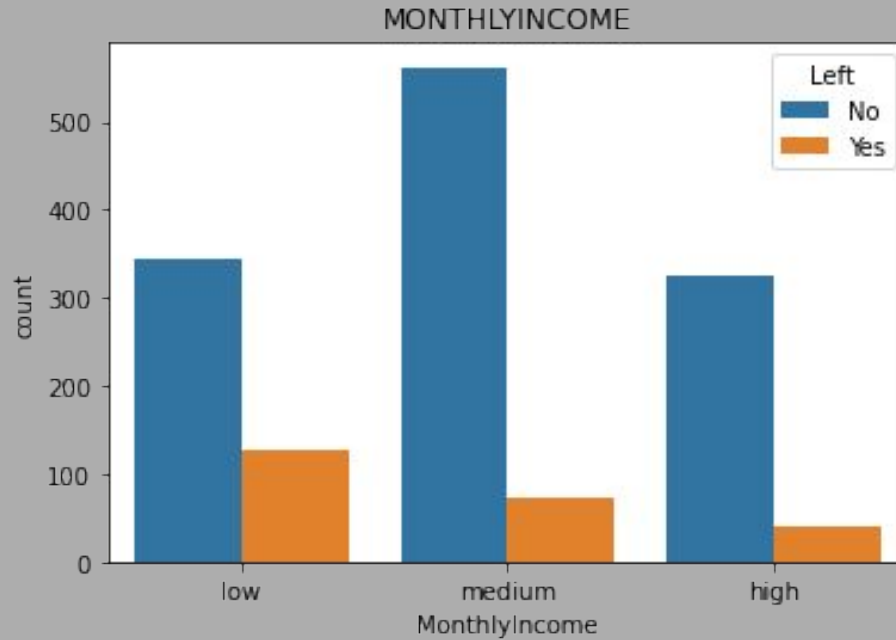
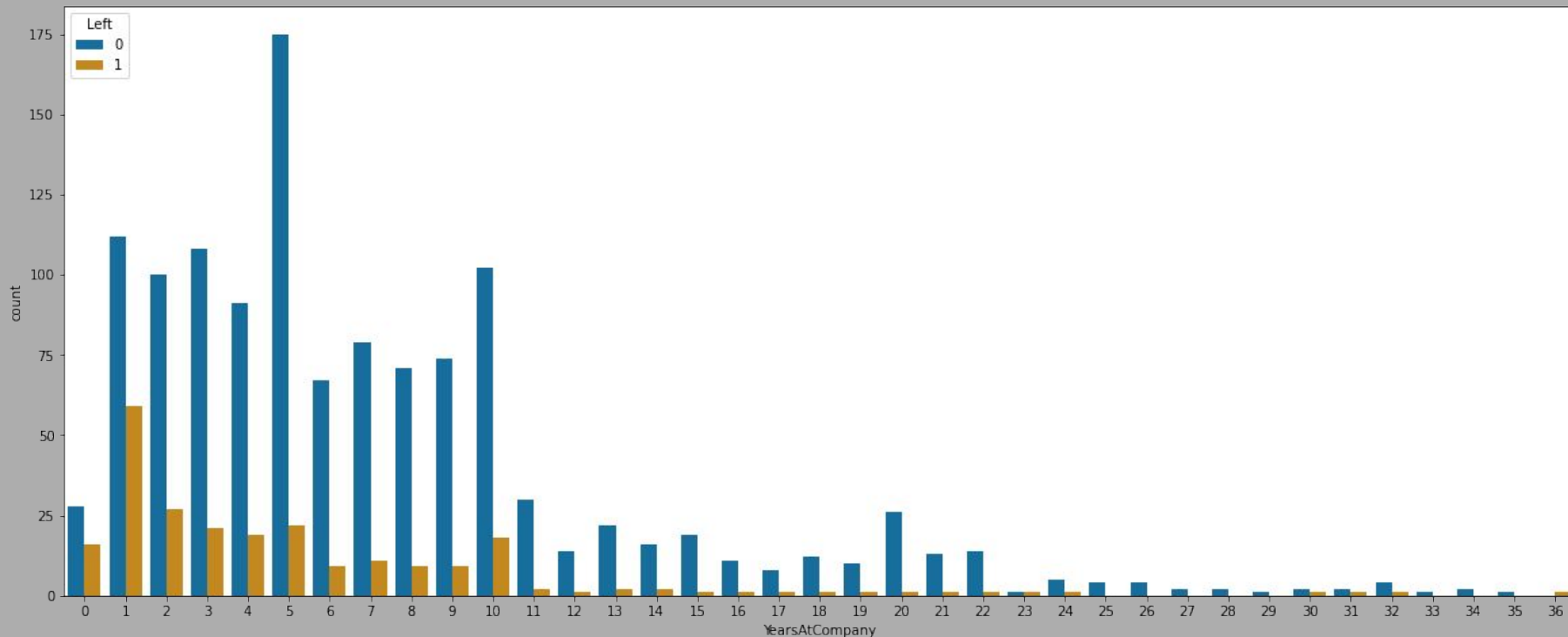As expected, low wages is a key factor for quitting

EDA

Those who get a smaller increase in their salary tend to quit

EDA

Those who get a lower performance rate in tend to quit, it is quite related with the previous slide.
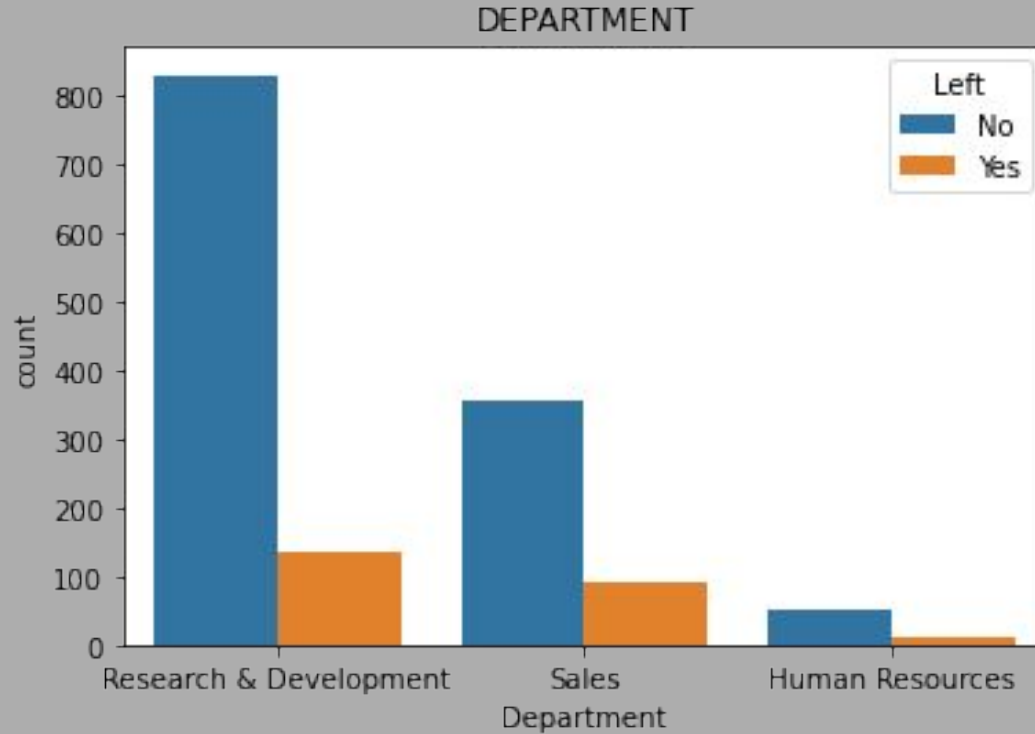
EDA

The first 5 years in the company seem to be critical with the second year in the company featuring the highest quitting level; decreasing after. Reaching the 10 year mark seems to be a moment for quitting as well.

EDA

GENDER
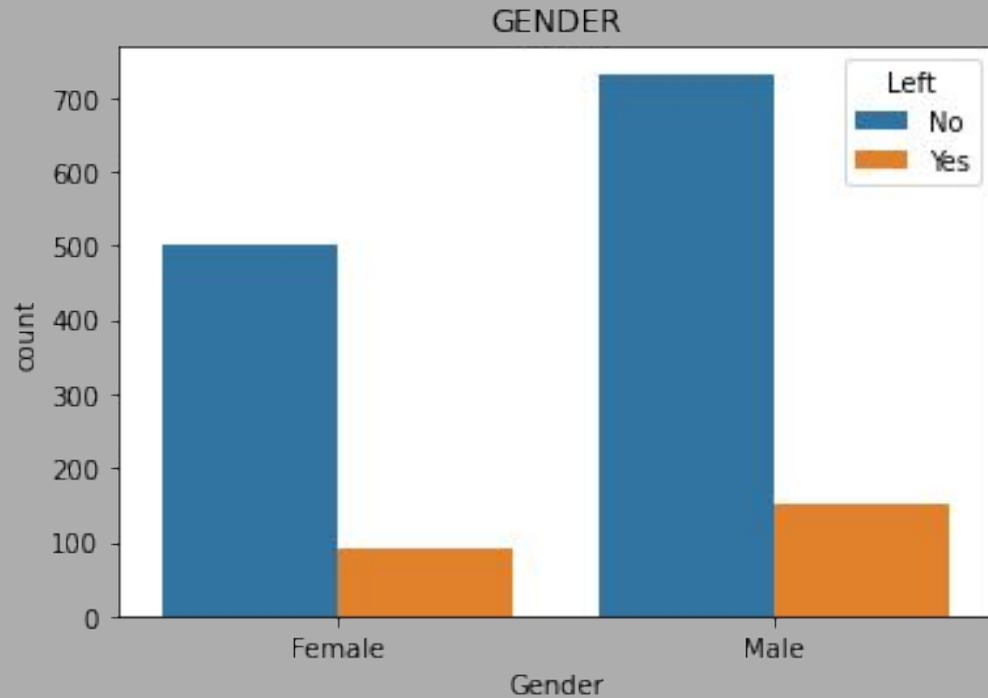
The percentage of male employees is significantly higher, also featuring a bigger number of quitters.
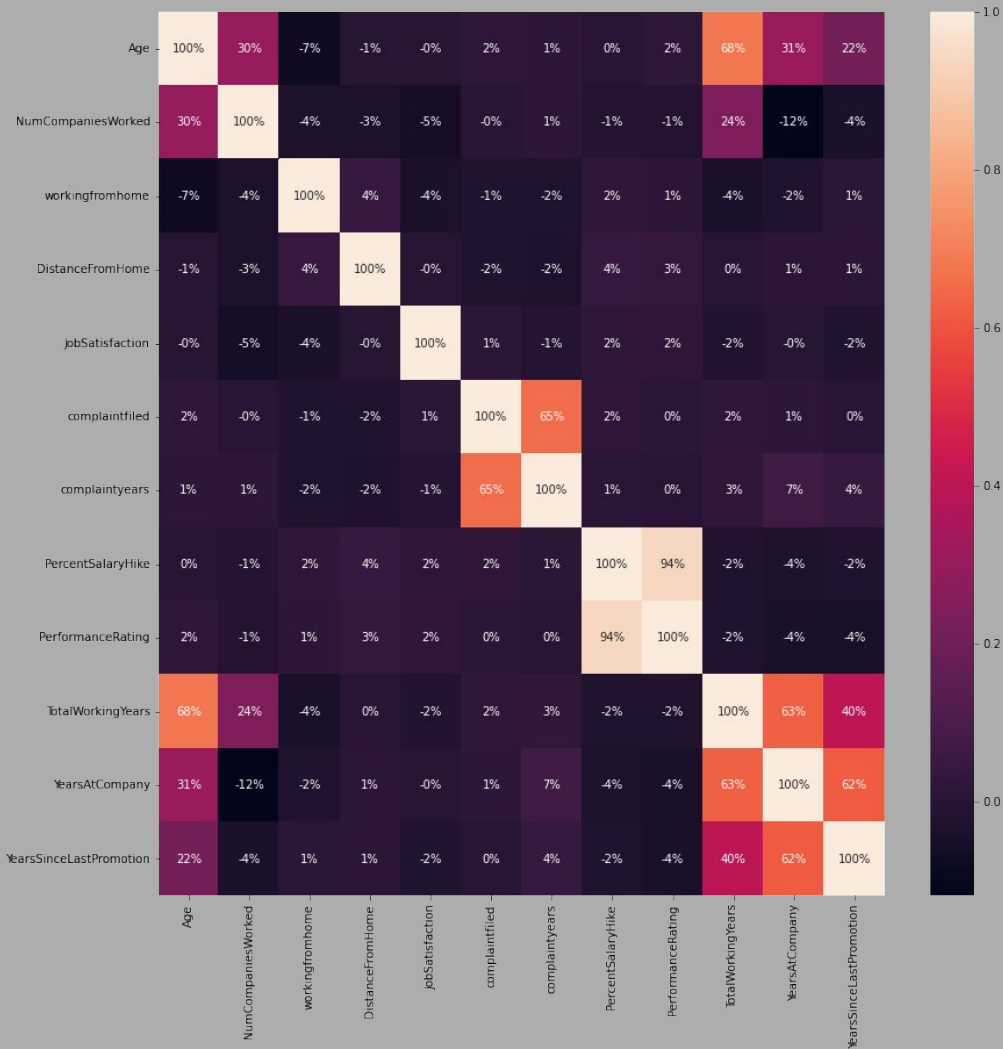
EDA

R&D is the biggest department, featuring also the highest quitting numbers. Sales is historically a high turnaround department giving its monetary driven nature. High numbers in R&D indicates the company could do a bit more to retain its talent.

Feature engineering and Correlation analysis

FE&CA

- A number of features have been eliminated as not deemed important for creating our model.
- The rest of variables are all under the 70% threshold in terms of correlation so will inform our ML model.
- Our model will be the one that will help us to solve a binary classification problem (quit/ not quit)

Our Model and its findings

RDF
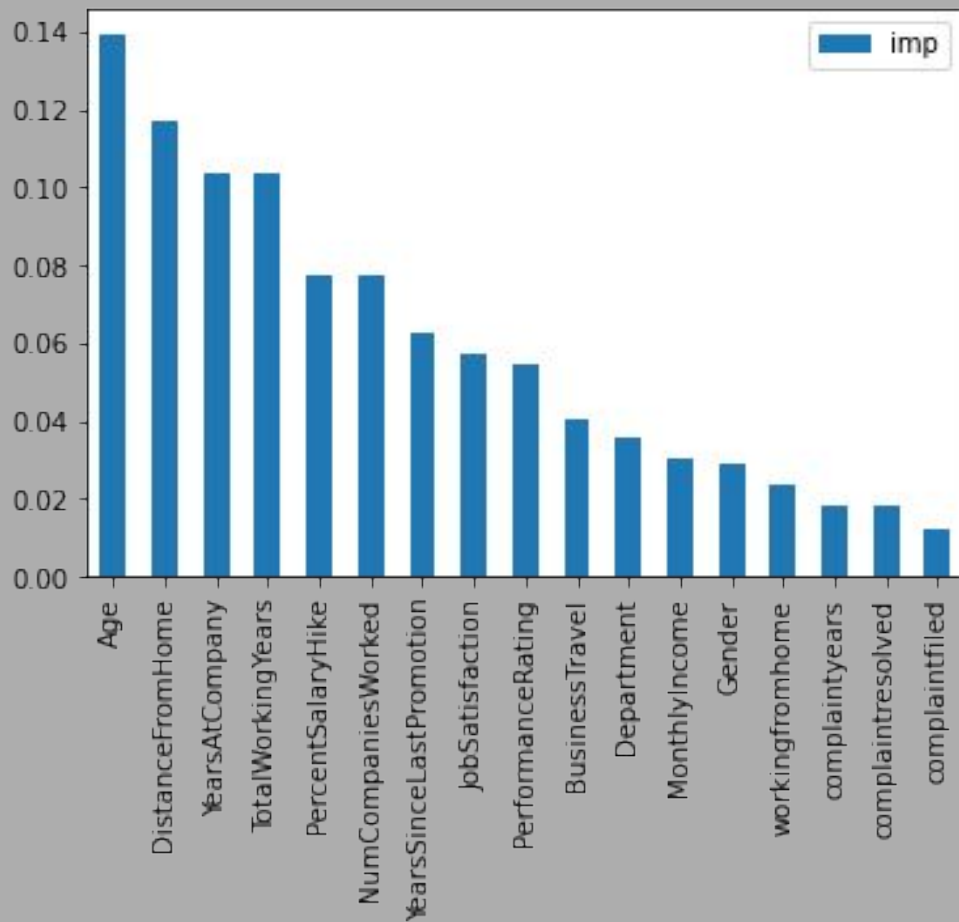
We have used a Random Forest Classifier to obtain a series of features that will demand some attention by the client.

The accuracy of the model is 84%, which can be improved at a later stage. For now and for the purposes of an initial meeting with the client will suffice.

Key Findings and Summary

Profile of the employee quitting the company

- Male.
- Works at the R&D department.
- It has between 28 and 35 years.
- Spends between 1 or 2 years working at the client's and then moves.
- Far away from home (long commute).
- Not the highest achiever but not an underperformer either.
- Not very engaged with the job.

Takeaways

Why are people leaving right now?

What can we do about it?

The first 2 years in the company seems to be steep for some and unengaging for others

Implement/ Improve a tailored mentoring/induction program for all employees regardless of their seniority.

After the 10th year in the company there is an spyke in leaving employees

Consider other perks apart from increases like stock or extra time off for personal activities.

Takeaways

What changes do we need to make to our operating model?

How can we predict who will leave?

Apart from year performance reviews include HR checks (milestone) every 5 years of service.

HR to have conversation with all employees between 28 and 35 to gather further insights on the matter.

Hire employees who live closer to the company or make hybrid work more attractive

Final takeaway

How can we retain more high performing employees?

Data is inconclusive in this aspect as it seems that the company is keeping well the high performing employees. It looks like it is the more mid-of-the-range employees that the company is struggling with. Maybe the client should be asking us a different question? This might have to do more with how to support the normal employed to become outstanding and rise the profile of the company as a whole?

Thank you