After training the model with the Random Forest Algorithm, the following results were obtained -

The evaluation metrics before cross validation are –

- **Accuracy:** [redacted]
- **Precision:** [redacted]
- **Recall:** [redacted]
- **F-1 Score:** [redacted]

The evaluation metrics after Cross Validation are -

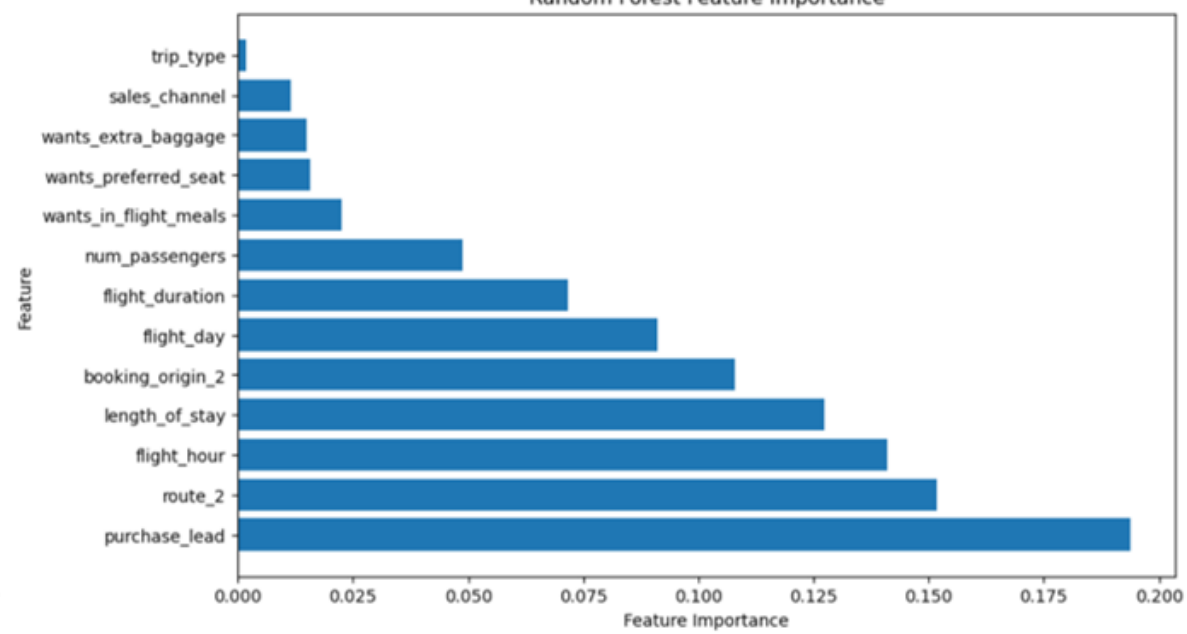
**Accuracy:** [redacted]

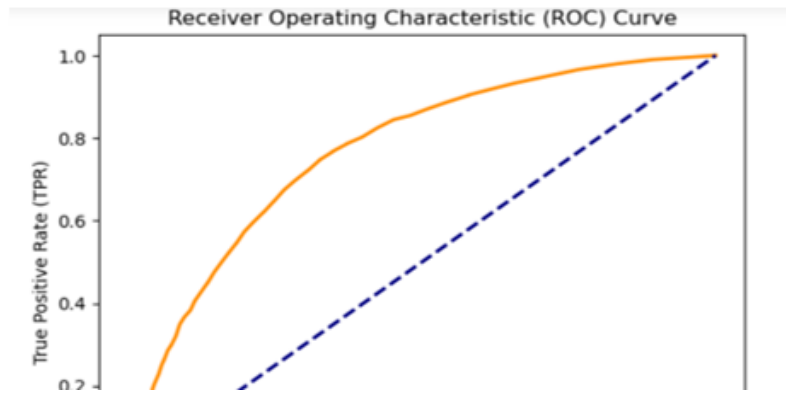
**Accuracy:** [redacted]

The ROC-AUC curve is also given in bottom right corner of the slide.

Since the accuracy obtained after folding is lesser than the accuracy obtained before folding, it suggests that the model's performance is sensitive to specific data split used for evaluation. It can also point to unintentional data leakage or contamination between the training and the test sets in the single train-test split.

Also to know the importance of each parameter in the model, a curve is drawn the illustrating the significance of each variable through which it can be said that the [redacted]




# Data Conclusions

Since the obtained results vary in general, the averages will be used to figure out the overall sentiments of the user feedbacks.

So, the average for the positive percentage is –

Average Positive = [redacted]

The average Neutral percentage is –

Average Neutral = [redacted]

The average Negative percentage is –

Average Negative = [redacted]

Thus the overall analysis reveals that more than 50% of the users are unhappy with the services of the British Airways which is a crucial thing to note as this directly the business of the company.

This is a major factor to note and the possible key areas of improvement are listed on the next slide.

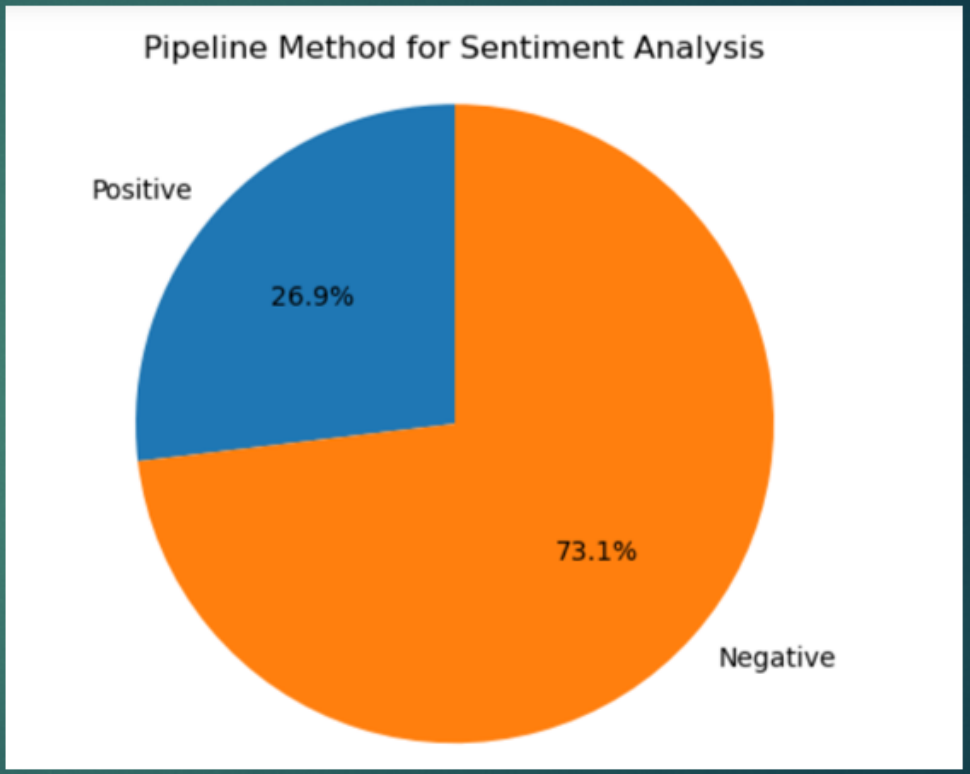
A detailed analysis of the data revealed the following information –

- 26.9% percentage of Positive feedback
- 73.1% percentage of Negative feedback

This method was run on 1000 user feedbacks in total which means that –

- 270 users were happy and satisfied with the services of British Airways
- 730 users were not happy with the services.

Here the analysis gave the labels to each feedback which was used directly to plot the graph and also it is important to note that this method does not give the neutral sentiment.




# Summary

In a nutshell, the analysis of the data revealed a majority of negative feedback, a handful of neutral feedback and a small portion of positive feedback. This shows that the company need to work hard on the key areas of improvement. Working on these areas will greatly impact the overall services of the British Airways and this can help generate a good business for the airlines.

A detailed analysis of the obtained data revealed the following information –

- 41.0% percentage of Positive feedback
- 18.7% percentage of Neutral feedback
- 40.2% percentage of Negative feedback

This method was run on 1000 user feedbacks in total which means that –

- 410 users were happy and satisfied with the services of British Airways
- 190 users found the services to be of average quality
- 400 users were not happy with the services.

An important thing to note here is that this method of analysis gives a score that range between -1 to 1 and a general rule of thumb here is that –

- A score greater than 0.5 is considered to Positive