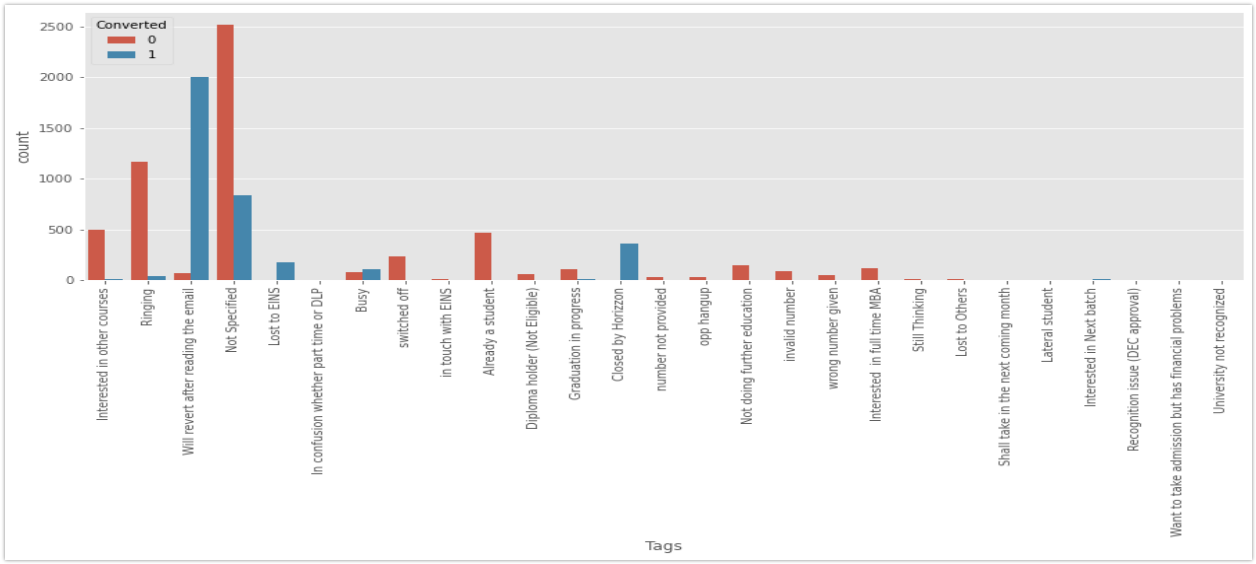
1. Which are the top three variables in your model which contribute most towards the probability of a lead getting converted?

Ans: The top variables that contributed in the lead score results are:

- Tags_Lost to EINS II
- Tags_Closed by Horizzon
- Tags_Will revert after reading the email



,

	coef	std err	z	P>|z|	[0.025	0.975]
const	-0.1154	0.148	-0.778	0.437	-0.406	0.175
Total Time Spent on Website	1.0137	0.062	16.438	0.000	0.893	1.135
Lead Origin_Landing Page Submission	-1.5838	0.151	-10.457	0.000	-1.881	-1.287
Specialization_Specialization_Not Specified	-2.0023	0.168	-11.895	0.000	-2.332	-1.672
Lead Source_Olark Chat	0.8829	0.174	5.076	0.000	0.542	1.224
Lead Source_Others	1.3026	0.611	2.131	0.033	0.105	2.501
Lead Source_Welingak Website	4.1831	0.744	5.622	0.000	2.725	5.641
Last Activity_Email Bounced	-0.8574	0.432	-1.983	0.047	-1.705	-0.010
Last Activity_SMS Sent	1.9337	0.120	16.109	0.000	1.698	2.169
Last Notable Activity_Modified	-1.6347	0.131	-12.509	0.000	-1.891	-1.379
Last Notable Activity_Olark Chat Conversation	-1.5599	0.464	-3.359	0.001	-2.470	-0.650
Tags_Closed by Horizzon	7.1708	1.015	7.065	0.000	5.182	9.160
Tags_Interested in other courses	-3.0659	0.449	-6.826	0.000	-3.946	-2.186
Tags_Lost to EINS	5.7095	0.613	9.320	0.000	4.509	6.910
Tags_Other_Tags	-3.1373	0.248	-12.644	0.000	-3.624	-2.651
Tags_Ringing	-3.6525	0.239	-15.258	0.000	-4.122	-3.183
Tags_Will revert after reading the email	4.2381	0.188	22.539	0.000	3.870	4.607

2. What are the top 3 categorical/dummy variables in the model which should be focused the most on in order to increase the probability of lead conversion?

Ans: The top 3 categorical / dummy variables in the model which should be focused to increase the probability are:

- Tags_Lost to EINS II
- Tags_Closed by Horizzon
- Tags_Will revert after reading the email

Answer to both questions is same because top3 variables in the model are all categorical/dummy variables.

3. X Education has a period of 2 months every year during which they hire some interns. The sales team, in particular, has around 10 interns allotted to them. So during this phase, they wish to make the lead conversion more aggressive. So they want almost all of the potential leads (i.e. the customers who have been predicted as 1 by the model) to be converted and hence, want to make phone calls to as much of such people as possible. Suggest a good strategy they should employ at this stage.

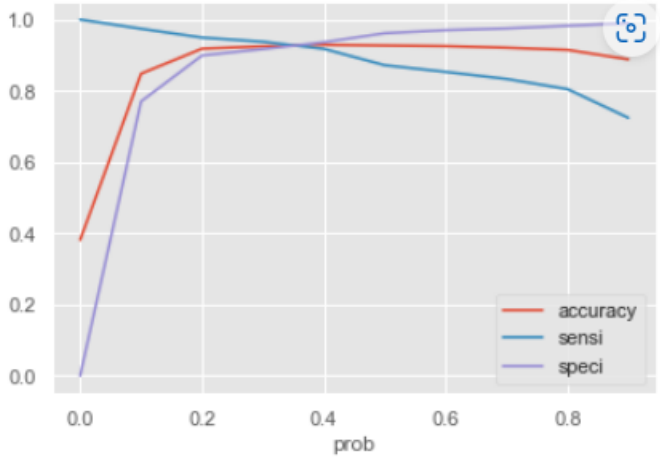
Ans: Sensitivity with respect to our model can be defined as the ratio of total number of actual Conversions correctly predicted to the total no of actual Conversions.

Similarly, Specificity can be defined as the ratio of total no of actual non-Conversions correctly predicted to the total number of actual non-Conversions.

For a particular model, as one increases, the other decreases and vice versa.

Different values of the sensitivity and specificity can be achieved for the same model by changing the Conversion Probability cutoff threshold value.

For our model, the below graph shows how the Sensitivity and Specificity rating changes with change in the threshold value:



When the probability thresholds are very low, the sensitivity is very high and specificity is very low. Similarly, for larger probability thresholds, the sensitivity values are very low but the specificity values are very high.

High sensitivity implies that our model will correctly identify almost all leads who are likely to Convert. It will do that by over-estimating the Conversion likelihood, i.e. it will misclassify some non-Conversion cases as Conversions.

Now, since X Education has more man-power for these 2 months and they wish to make the lead conversion more aggressive by wanting almost all of the potential leads, we can choose a lower threshold value for Conversion Probability.

This will ensure the Sensitivity rating is very high which in turn will make sure almost all leads who are likely to Convert are identified correctly and the agents can make phone calls to as much of such people as possible.

Company can target People with:

- Maximum and recent website visits.
- Total Time Spent on Website
- Last Activity Email Link Clicked or form submitted on website.
- Pages View per visit
- Last activity is through SMS or through Olark chat conversation
- They are working professionals

4. Similarly, at times, the company reaches its target for a quarter before the deadline. During this time, the company wants the sales team to focus on some new work as well. So during this time, the company's aim is to not make phone calls unless it's extremely necessary, i.e. they want to minimize the rate of useless phone calls. Suggest a strategy they should employ at this stage.

Ans: The answer to this is specificity,
It is defined as Specificity=TN/(TN+FP)

High Specificity implies that our model will correctly identify almost all leads who are not likely to Convert. It will do that at the cost of losing out some low Conversion rate risky leads to the competition, i.e. it will misclassify some Conversion cases as non-Conversions.
From the above graph we can see specificity increases as threshold increases, so we will require high specificity, because high specificity will correctly predict almost all non-conversions.It may be a scenario where some conversions get classified as non-conversions. But as company has already achieved its target for the quarter and don't want to make phone calls unless its absolutely necessary. To achieve we need high threshold value.
Therefore, since X Education has already reached its target for a quarter and doesn't want to make phone calls unless it's extremely necessary, i.e. they want to minimize the rate of useless phone calls, we can choose a higher threshold value for Conversion Probability.

This will ensure the Specificity rating is very high, which in turn will make sure almost all leads who are on the brink of the probability of getting Converted or not are not selected. As a result the agents won't have to make unnecessary phone calls and can focus on some new work.

In this condition, they need to focus more on other methods like automated emails, SMS, Olark Chat, and live chat. This way, calls won't be required unless it is an emergency. The above strategy can be used, but with customers that have a very high chance of buying the course.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX