# Question and Answer

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

   As we see, the relative importance of different features based on their coefficient values in the model. The three variables that have the most significant impact on lead conversion probability, ranked in order of influence, are:

   1. **Tags_Lost to EINS**
   2. **Tags_Closed by Horizzon**
   3. **Tags_Will revert after reading the email**

   These variables are dummy variables created from the categorical "Tags" feature and all positively affect the likelihood of lead conversion. As a result, the company should prioritize leads with these three tags to increase conversion potential.

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?**

   Based on the graph above, the top three categorical/dummy variables in the model that should be prioritized to boost lead conversion probability are:

   1. **Tags_Lost to EINS**
   2. **Tags_Closed by Horizzon**
   3. **Tags_Will revert after reading the email**

   The answer to both questions is identical, as all three of the top variables in the model are categorical/dummy variables.

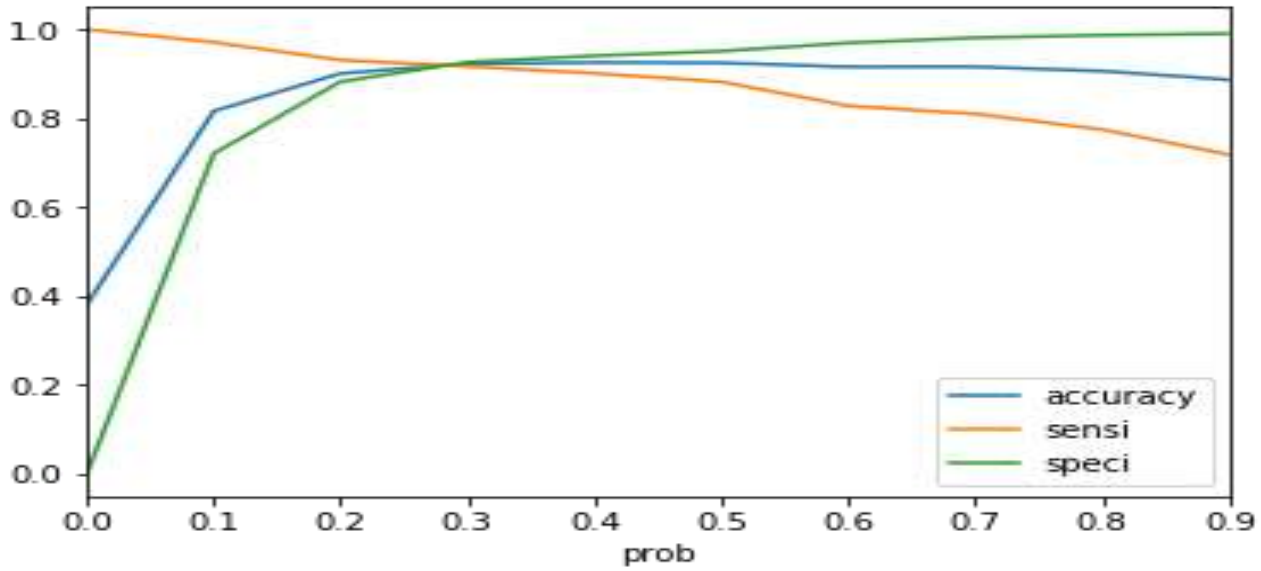
3. **X Education has a period of 2 months every year during which they hire some interns. The sales team, in particular, has around 10 interns allotted to them. So during this phase, they wish to make the lead conversion more aggressive. So they want almost all of the potential leads (i.e. the customers 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.**

   Sensitivity is defined as the ratio of true positives to the sum of true positives and false negatives. In the context of our model, sensitivity measures how well the model predicts actual conversions out of the total number of actual conversions. By adjusting the cutoff threshold for the lead conversion probability, different sensitivity levels can be obtained.

   The graph below illustrates how sensitivity, specificity, and accuracy change as the threshold varies:

   As observed, sensitivity decreases when the threshold is increased. In this case, a higher sensitivity is required because it ensures the model accurately predicts almost all leads that are likely to convert.

However, this could result in overestimating and misclassifying some non-conversions as conversions. Since the company has additional manpower for two months and aims to drive lead conversion more aggressively by reaching out to as many potential leads as possible, focusing on high sensitivity is a strategic approach. To achieve this, the threshold should be set to a lower value.




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.**

The approach to answering this question is similar to the previous one, but this time we focus on specificity. Specificity is defined as the ratio of true negatives to the sum of true negatives and false positives. In our model, specificity refers to how well the model correctly predicts leads that are unlikely to convert, out of all the actual non-conversions.

The graph above shows that specificity increases as the threshold is raised. In this case, a higher specificity is necessary because it ensures the model accurately predicts most leads who are not expected to convert.

However, this could lead to some conversions being incorrectly classified as non-conversions. Since the company has already met its quarterly target and wants to avoid making unnecessary phone calls, aiming for high specificity is a strategic choice. This will help ensure that phone calls are made only to leads with a very high likelihood of conversion. To achieve high specificity, the threshold should be set to a higher value.