**STEPS TAKEN TO CREATE MACHINE LEARNING MODEL FOR PREDICTING CUSTOMER RETENTION PATERNS FOR SPRINT**

**1.BUSINESS PROBLEM UNDERSTANDING**

This is the first step of the process where the problem is clearly defined which in this case is predicting when customers are most likely to leave. If obtained this information can be used for revenue forecasting and also making customer retention strategies.

**2.DATA COLLECTION**

Collection of right data is usually the second step, but in this specific scenario sprint already has past reliable data so we will use this.

**3.DATA CLEANING AND PROCESSING**

Assuming the data wasn’t clean already, I would proceed to find flaws and inconsistencies in the data set and remove them. This might involve remove out layers in the data. I do this because bad data will automatically produce a bad model hence the cleaning.

**4.EXPLORATORY DATA ANALYSIS**

This step involves inspecting data features and identifying trends in the data. An example of this for this specific scenario would be identifying what number of customers that would be considered a high number, and what point of the year are they most likely to be with sprint.

**5.MODEL BUILDING AND EVALUATION**

Given the trends identified in the exploratory stage, I apply various algorithms to the data and see which one suits it the best. Once I find an algorithm that best explains the trends I test it on a dummy set of data to see if it holds. If successful I can use the variables in the algorithm and tune them to match business objectives e.g if business objective for sprint was to find out when customers were most likely to leave and one of the variable in the algorithm was time periods were sprint competitors offered lower call rates during this time sprint could also do that.

**6.COMMUNICATING MODEL RESULTS**

Here model results and findings are communicated to the stake holders who could be in this case sprint owners and shareholders in as simple language and graphics as possible. Here I also get feedback from stakeholders.

**7.MODEL DEPLOYMENT AND MAINTANCE**

Here the model is deployed and monitored e.g if the model showed that in order to retain customers sprint had to lower its rates at certain periods of the year then this is done. It is important to note depending on results and external factors can be changed to suite stakeholder needs at the moment.