# Telecom Customer Churn Prediction powered by AWS Sagemaker

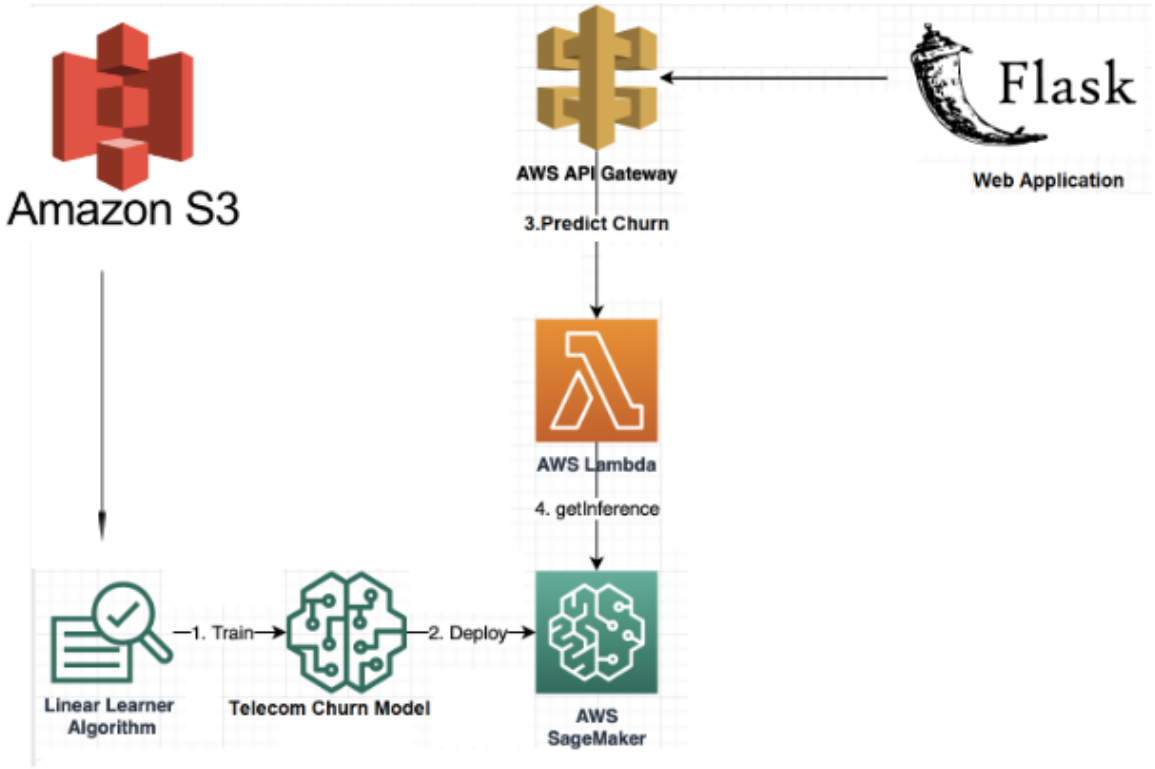
## Project Idea

Customer churn is a major problem and one of the most important concerns for large companies.  Telecommunication industry always suffers from very high churn rates when one industry offers a better plan than the previous there is a high possibility of the customer churning from the present due to a better plan in such a scenario it is very difficult to avoid losses but through prediction, we can keep it to a minimal level.
Due to the direct effect on the revenues of the companies, companies are seeking to develop means to predict potential customers to churn. Therefore, finding factors that increase customer churn is important to take necessary actions to reduce it.

## Solution :

Churn prediction helps in identifying those customers who are likely to leave a company. The main contribution of our work is to develop a churn prediction model which assists telecom operators to predict customers who are most likely subject to churn.
Build & Deploy a Machine Learning model to predict the customer churn using Amazon SageMaker and predictions can be obtained by using its Endpoint.
Create a python - flask application that interacts with the model deployed on AWS Sagemaker with the help of AWS API Gateway and AWS Lambda Services.

## Proposed Technical Architecture



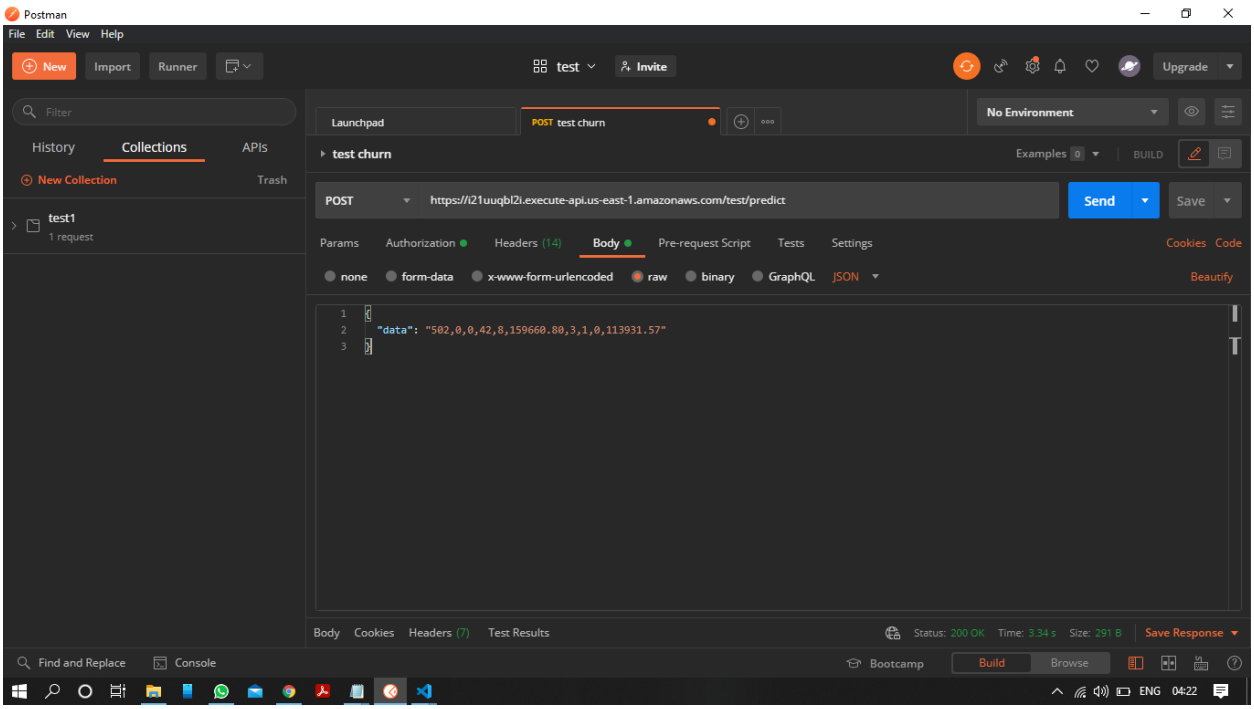

## Technical Requirements :

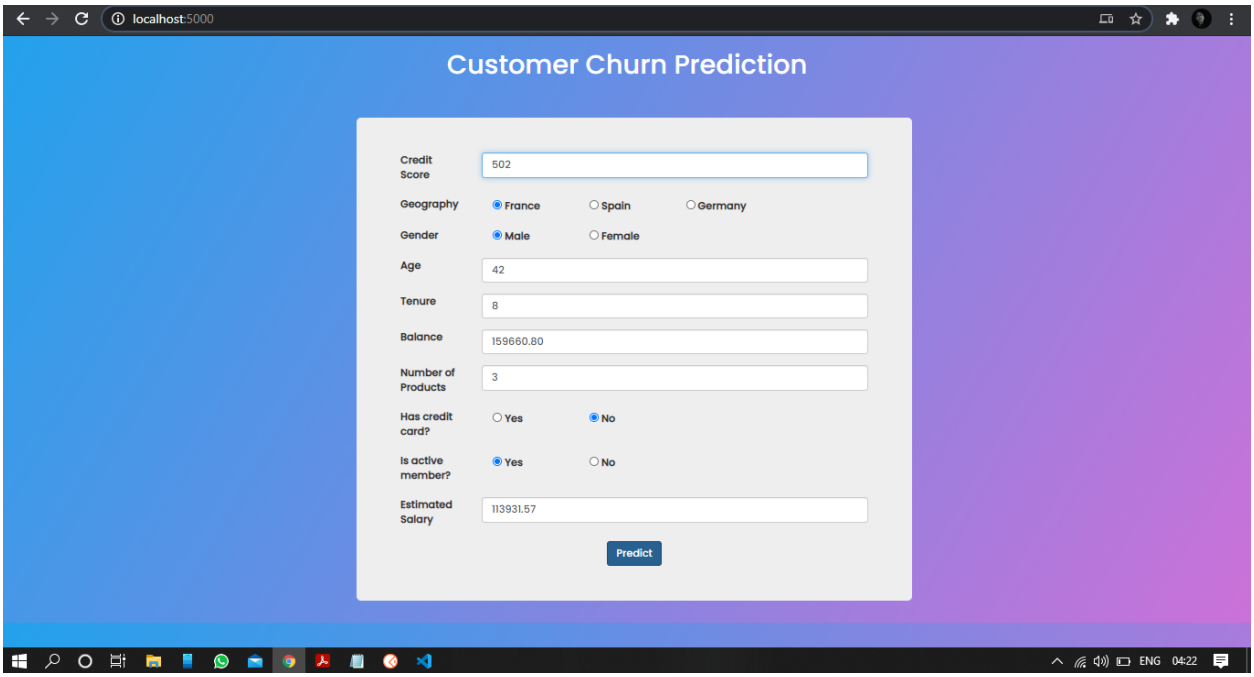
1. Amazon S3
2. Amazon Sagemaker
3. AWS Lamda
4. AWS API Gateway
5. Flask
6. Python

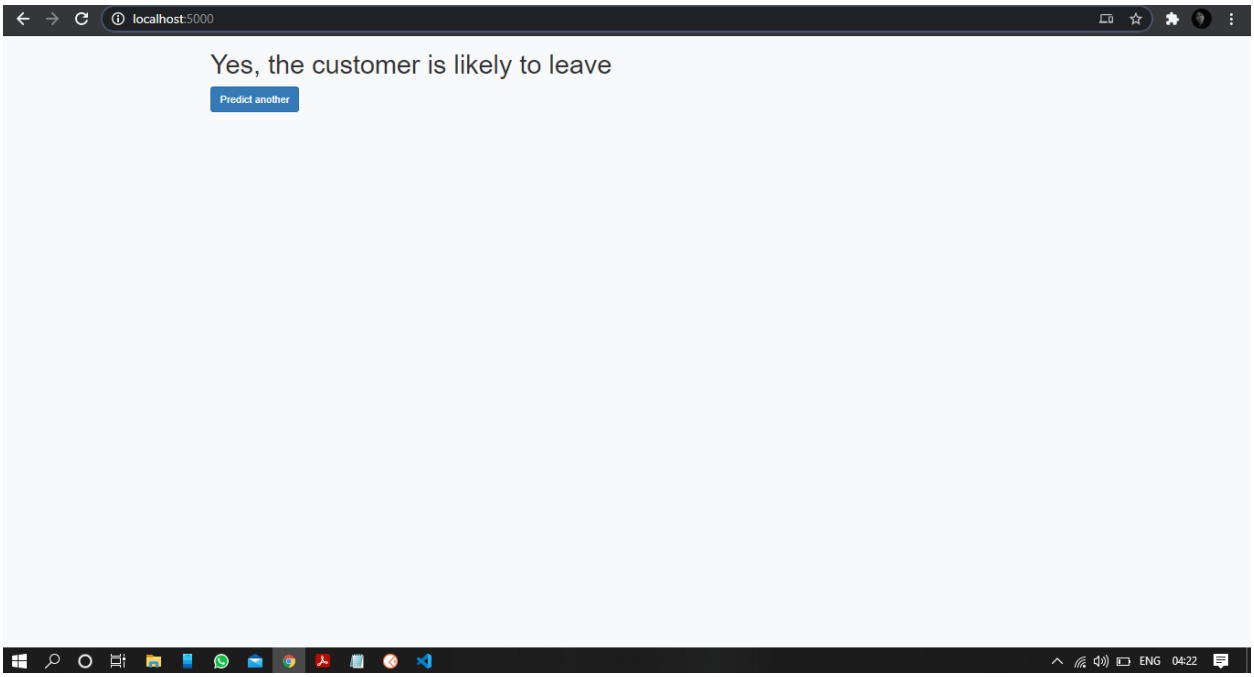
## Model:

The model was a binary classifier model which uses the XGBoost algorithm to correctly predict the churn with an accuracy of almost 70%..

## Screenshots:




localhost:5000
Customer Churn Prediction
Credit Score
502
Geography
France
Spain
Germany
Gender
Male
Female
Age
42
Tenure
8
Balance
159660.80
Number of Products
3
Has credit card?
Yes
No
Is active member?
Yes
No
Estimated Salary
113931.57
Predict
ENG
04:22


localhost:5000
Yes, the customer is likely to leave
Predict another
ENG
04:22