# Task Report

## Introduction:

A churn rate predictor is a tool that helps businesses predict the likelihood of customers leaving or discontinuing their subscription or services. The tool can help to identify the customers who are at a high risk of churning and take proactive measures to prevent them from leaving. In this project, we have developed a web page as the frontend interface to use it as churn rate predictor in which users will be able to input specific parameters.

## Methodology:

To build the churn rate predictor, we will use machine learning algorithm i.e. the xgboost algorithm that can learn from historical data and make predictions based on new inputs. The data will be preprocessed, and relevant features will be extracted to train the machine learning model.

For UI, we have used Streamlit as the frontend interface for our web application. Streamlit provides a simple way to create a web page with input fields, buttons, and other widgets that users can interact with to input data and get results. We have python libraries such as pandas and scikit-learn to preprocess the data and train machine learning models, and then integrate them into the Streamlit web page to make predictions based on user inputs. Once the web application is ready, it can be deployed on a web server using platforms such as Heroku, AWS, or Google Cloud, making it accessible to users from anywhere with an internet connection.

## Features and Time-Distribution:

Required Features:

| | | |
|---|---|---|
| A button to upload the input data | ✔ | 10 Mins |
| Windows to input values for Hyperparameter tuning in the web app | ✔ | 30 Mins |
| A button to enable the model fitting using input tuning variables | ✔ | 1 hr |
| Display plots of ROC curve and confusion matrix on web page. | ✔ | 3 hrs |
| Download plots of ROC curve and confusion metrics to local directory | ✔ | |

Additional Features:

| | | |
|---|---|---|
| A button to download plots | ✔ | 2 hrs |
| Success message after download and page refresh | ✔ | 20 mins |
| Some short messages explaining the plotted graphs | - | - |

Rest of the initial days were spent learning streamlit and understanding the given code.

last day on documentation.