Telecom Churn Casestudy

By:

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Problem Statement

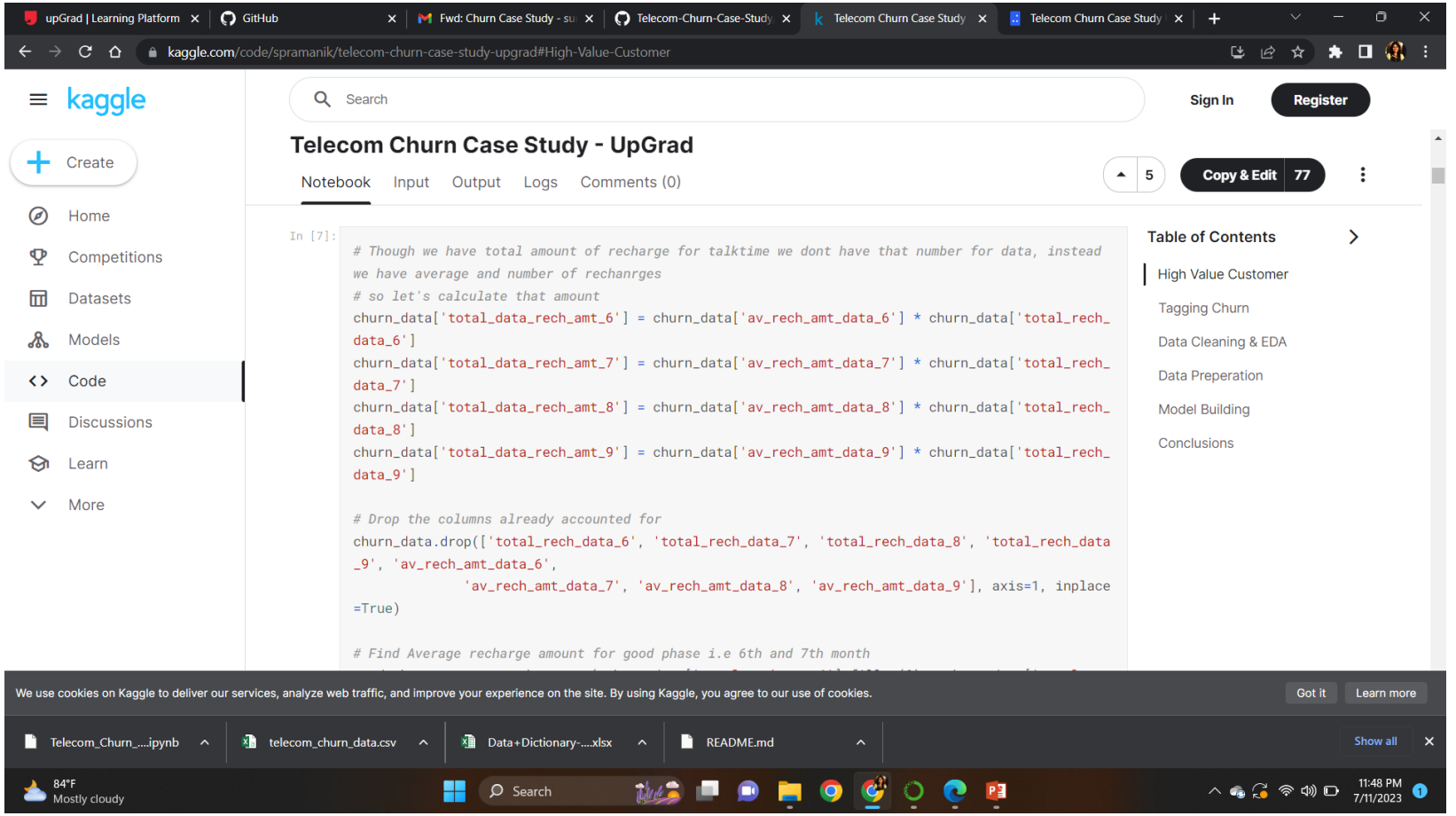
In the telecom industry, customers are able to choose from multiple service providers and actively switch from one operator to another. In this highly competitive market, the telecommunications industry experiences an average of 15-25% annual churn rate. Given the fact that it costs 5-10 times more to acquire a new customer than to retain an existing one, customer retention has now become even more important than customer acquisition.

For many incumbent operators, retaining high profitable customers is the number one business goal.

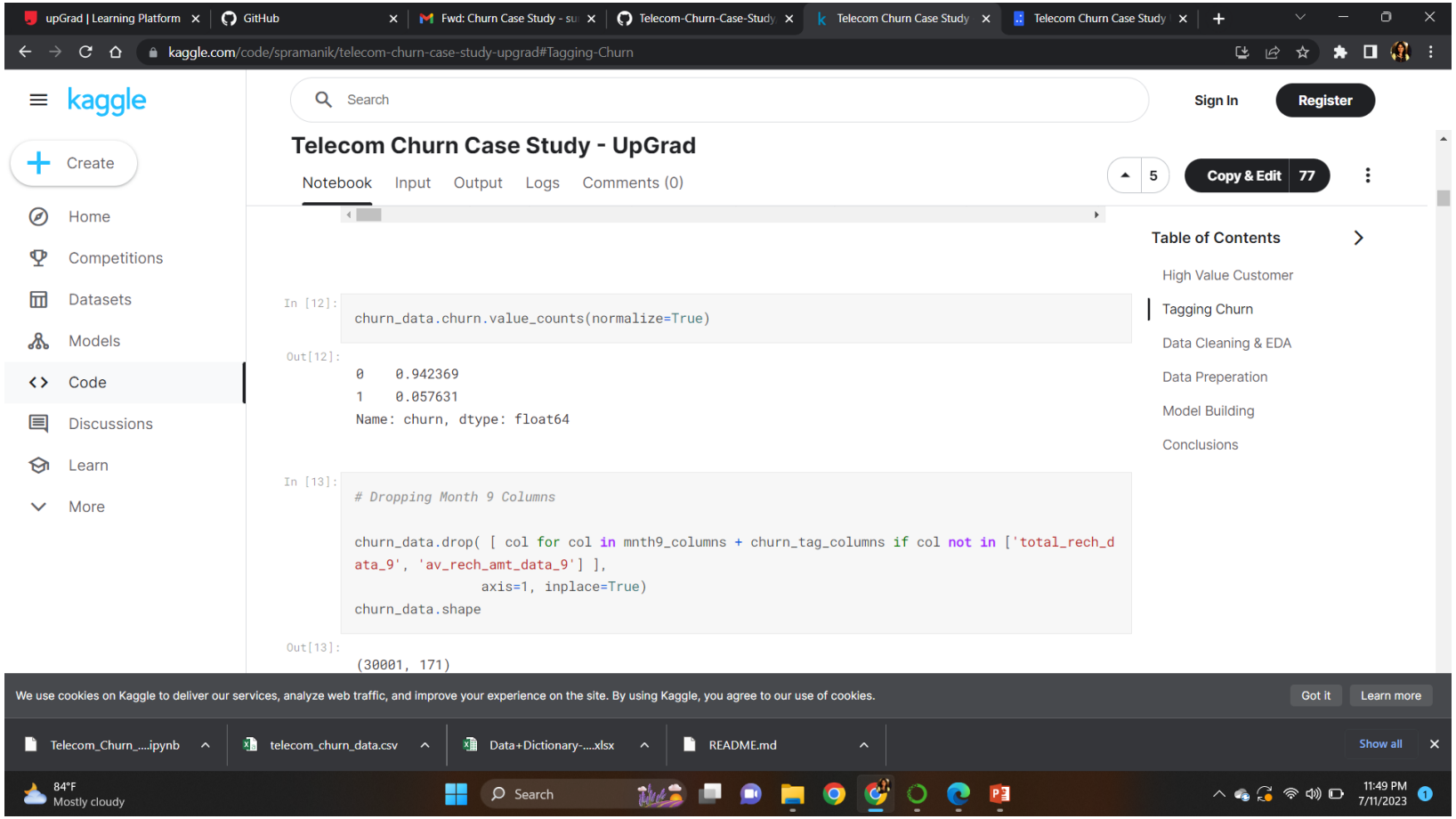
To reduce customer churn, telecom companies need to predict which customers are at high risk of churn.

In this project, you will analyse customer-level data of a leading telecom firm, build predictive models to identify customers at high risk of churn and identify the main indicators of churn.

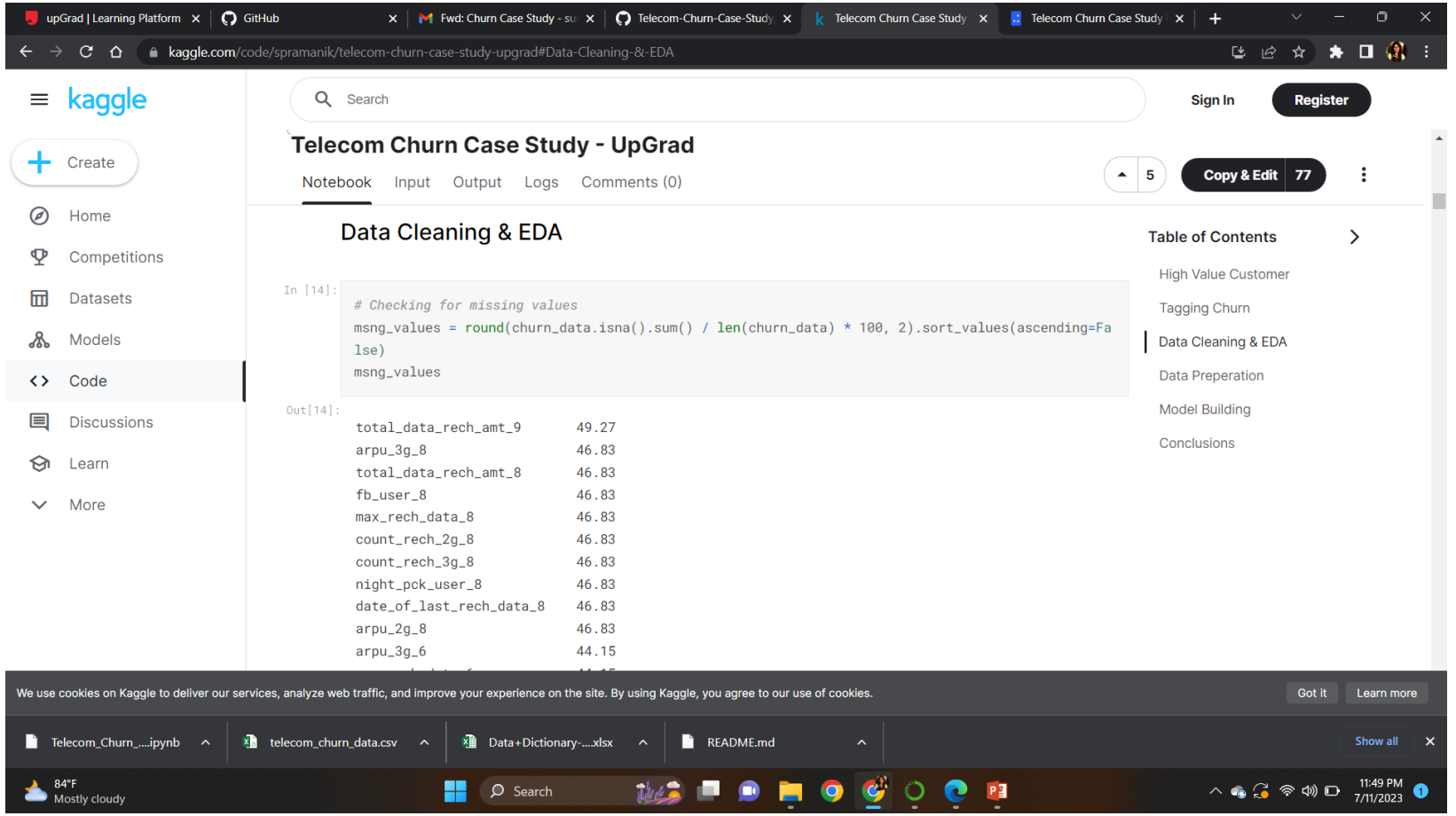
High Value Customer



Tagging Churn



EDA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In [14]:
# Checking for missing values
msng_values = round(churn_data.isna().sum() / len(churn_data) * 100, 2).sort_values(ascending=False)
msng_values
Out[14]:
total_data_rech_amt_9 49.27
arpu_3g_8 46.83
total_data_rech_amt_8 46.83
fb_user_8 46.83
max_rech_data_8 46.83
count_rech_2g_8 46.83
count_rech_3g_8 46.83
night_pck_user_8 46.83
date_of_last_rech_data_8 46.83
arpu_2g_8 46.83
arpu_3g_6 44.15
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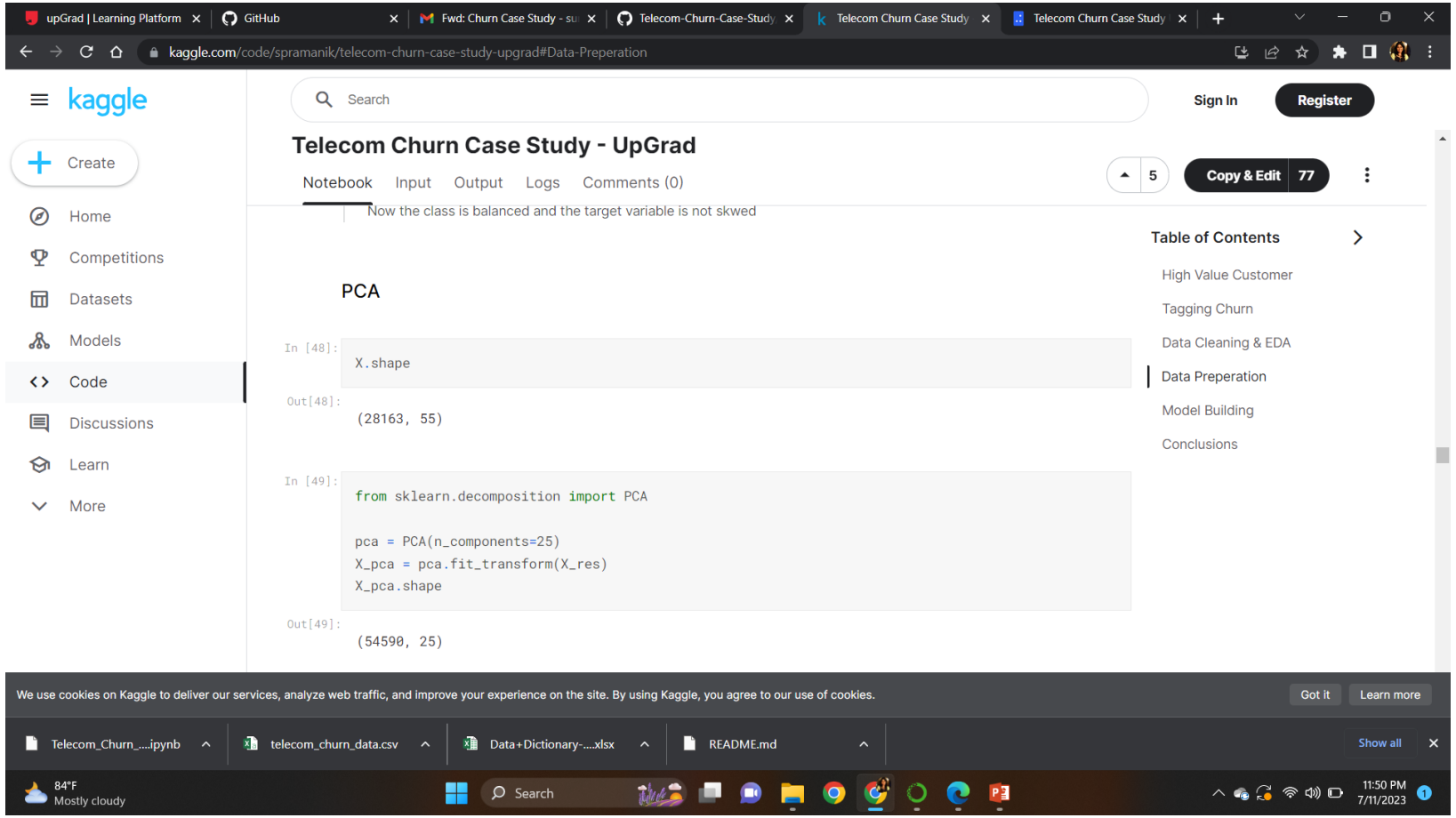
Data Prep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Now the class is balanced and the target variable is not skwed
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PCA
In [48]:
X.shape
Out[48]:
(28163, 55)
In [49]:
from sklearn.decomposition import PCA
pca = PCA(n_components=25)
X_pca = pca.fit_transform(X_res)
X_pca.shape
Out[49]:
(54590, 25)
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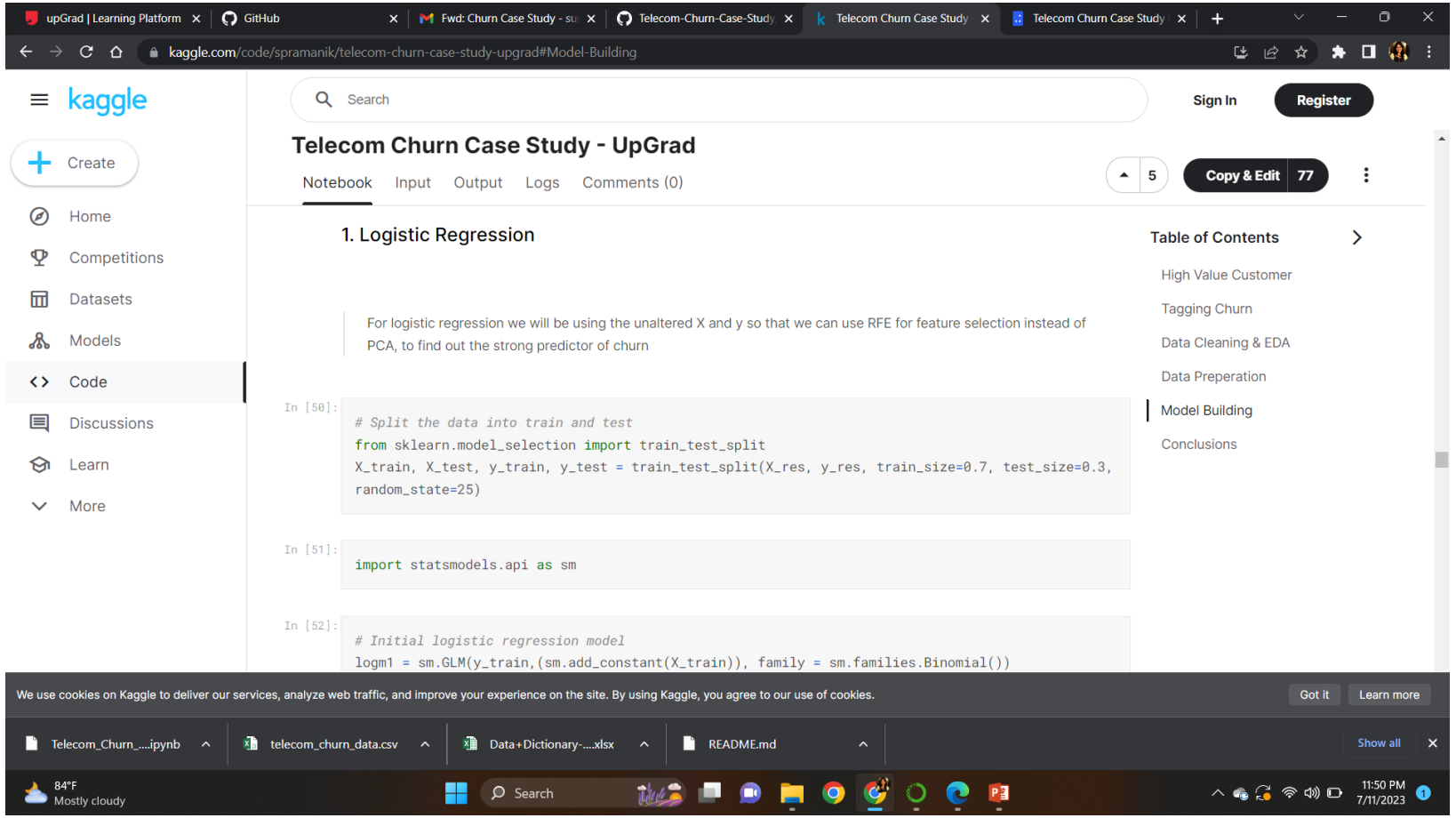
Model Building



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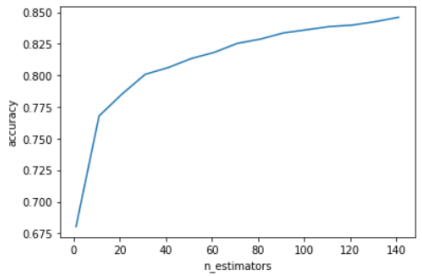
In [108]:

```
# Plot the scores corresponding to number of estimators to find the best possible number of estima
tor
plt.plot(estimators, adaboost_scores)
plt.xlabel('n_estimators')
plt.ylabel('accuracy')
plt.show()
```



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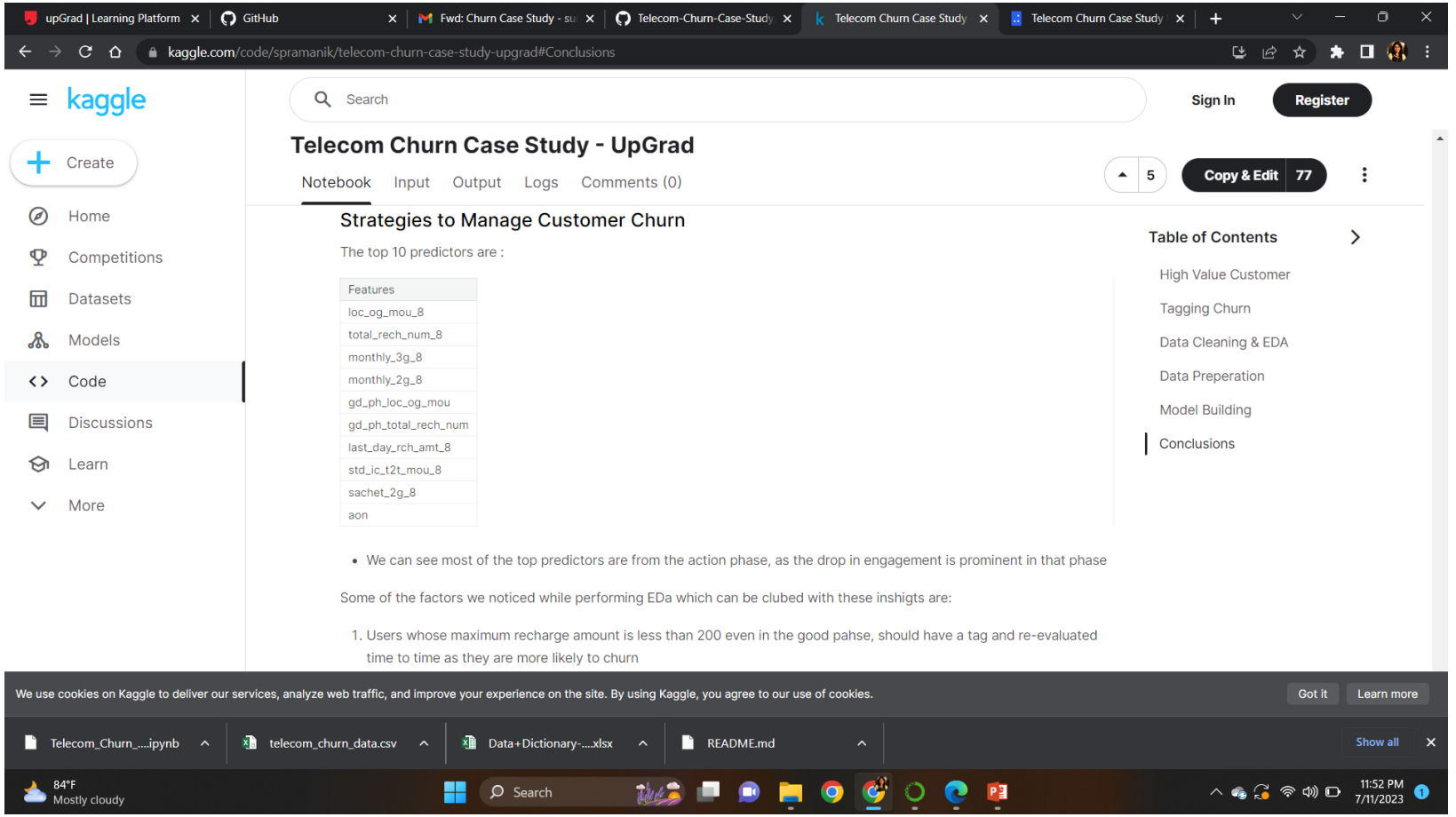
Conclusion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Strategies to Manage Customer Churn
The top 10 predictors are :
Features
loc_og_mou_8
total_rech_num_8
monthly_3g_8
monthly_2g_8
gd_ph_loc_og_mou
gd_ph_total_rech_num
last_day_rch_amt_8
std_ic_t2t_mou_8
sachet_2g_8
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We can see most of the top predictors are from the action phase, as the drop in engagement is prominent in that phase
Some of the factors we noticed while performing EDa which can be clubed with these inshigts are:
1. Users whose maximum recharge amount is less than 200 even in the good pahse, should have a tag and re-evaluated time to time as they are more likely to churn
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