import pandas as pd

import random

data = pd.read\_csv("loan.csv")

#sample with replacement

sample = data.sample(5 , replace = True)

sample

#sample without replacement

sample = data.sample(5 , replace = False)

sample

systematic\_sample = data.iloc[::4]

systematic\_sample

luster\_sample = data[data["Credit\_Score"] >= 750]

cluster\_sample

cluster\_sample = data[(data["Credit\_Score"] >= 650) & (data["Credit\_Score"] <= 749)]

cluster\_sample

cluster\_sample = data[data["Credit\_Score"] < 750]

cluster\_sample

from collections import Counter

from imblearn.over\_sampling import RandomOverSampler, SMOTE

from imblearn.under\_sampling import RandomUnderSampler

#check the classs distribution for load Approved column

print("Class Distribution:", Counter(data["Loan\_Approved"]))

Spliting the data into target and feature

X = data.drop(columns=["Loan\_Approved", "ID"])

y = data["Loan\_Approved"]

oversampler = RandomOverSampler(random\_state=42)

X\_over, y\_over = oversampler.fit\_resample(X, y)

print("Random Oversampling:", Counter(y\_over))

undersampler = RandomUnderSampler(random\_state=42)

X\_under, y\_under = undersampler.fit\_resample(X, y)

print("Random Undersampling:", Counter(y\_under))

smote = SMOTE(random\_state=42)

X\_smote, y\_smote = smote.fit\_resample(X, y)

print("SMOTE:", Counter(y\_smote))