data = pd.read\_csv('FinalResults.csv',header=0)

df = pd.DataFrame(data, columns=data.columns)

df['target'] = data.target

X = df.drop(['target'], axis=1)

y = df['target']

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.7)

estimator = linear\_model.LogisticRegression(solver="liblinear", multi\_class="ovr")

model = GeneticSelectionCV(

estimator, cv=5, verbose=0,

scoring="accuracy", max\_features=90,

n\_population=450, crossover\_proba=0.5,

mutation\_proba=0.2, n\_generations=100,

crossover\_independent\_proba=0.5,

mutation\_independent\_proba=0.04,

tournament\_size=3, n\_gen\_no\_change=10,

caching=True, n\_jobs=-1)

model = model.fit(X, y)

print('Features:', X.columns[model.support\_])

from sklearn.metrics import accuracy\_score

y\_predicy\_ga = model.predict(X\_test)

accuracy\_score(y\_test,y\_predicy\_ga)

Features: Index(['audspecRasta\_lengthL1norm\_sma\_lpc1',

'audspec\_lengthL1norm\_sma\_de\_quartile3',

'audspec\_lengthL1norm\_sma\_de\_skewness',

'audspec\_lengthL1norm\_sma\_de\_lpc1',

'audSpec\_Rfilt\_sma[1]\_upleveltime25', 'audSpec\_Rfilt\_sma[8]\_lpc1',

'audSpec\_Rfilt\_sma[12]\_iqr1-3', 'audSpec\_Rfilt\_sma[14]\_iqr1-3',

'audSpec\_Rfilt\_sma[15]\_iqr2-3', 'audSpec\_Rfilt\_sma[17]\_iqr2-3',

'audSpec\_Rfilt\_sma[17]\_skewness', 'audSpec\_Rfilt\_sma[18]\_maxSegLen',

'pcm\_fftMag\_spectralRollOff25.0\_sma\_maxSegLen',

'pcm\_fftMag\_spectralRollOff50.0\_sma\_upleveltime75',

'pcm\_fftMag\_spectralVariance\_sma\_risetime',

'pcm\_fftMag\_spectralKurtosis\_sma\_lpc0',

'pcm\_fftMag\_spectralSlope\_sma\_iqr1-2',

'pcm\_fftMag\_psySharpness\_sma\_lpc3', 'mfcc\_sma[2]\_range',

'mfcc\_sma[4]\_lpc2', 'mfcc\_sma[6]\_skewness', 'mfcc\_sma[7]\_quartile2',

'mfcc\_sma[7]\_quartile3', 'mfcc\_sma[7]\_iqr2-3',

'mfcc\_sma[9]\_pctlrange0-1', 'mfcc\_sma[11]\_range',

'mfcc\_sma[12]\_percentile1.0', 'mfcc\_sma[14]\_quartile1',

'audSpec\_Rfilt\_sma\_de[0]\_quartile3',

'audSpec\_Rfilt\_sma\_de[3]\_meanSegLen',

'audSpec\_Rfilt\_sma\_de[8]\_pctlrange0-1',

'audSpec\_Rfilt\_sma\_de[9]\_minPos',

'audSpec\_Rfilt\_sma\_de[13]\_percentile99.0',

'audSpec\_Rfilt\_sma\_de[17]\_pctlrange0-1',

'audSpec\_Rfilt\_sma\_de[19]\_percentile1.0',

'audSpec\_Rfilt\_sma\_de[19]\_segLenStddev',

'audSpec\_Rfilt\_sma\_de[24]\_lpc3', 'audSpec\_Rfilt\_sma\_de[25]\_skewness',

'audSpec\_Rfilt\_sma\_de[25]\_lpc3',

'pcm\_fftMag\_spectralRollOff25.0\_sma\_de\_lpc4',

'pcm\_fftMag\_spectralFlux\_sma\_de\_stddev',

'pcm\_fftMag\_spectralSkewness\_sma\_de\_pctlrange0-1',

'mfcc\_sma\_de[1]\_percentile1.0', 'mfcc\_sma\_de[4]\_meanSegLen',

'mfcc\_sma\_de[4]\_upleveltime25', 'mfcc\_sma\_de[5]\_skewness',

'mfcc\_sma\_de[6]\_upleveltime50', 'mfcc\_sma\_de[13]\_percentile1.0',

'mfcc\_sma\_de[14]\_kurtosis', 'F0final\_sma\_upleveltime75',

'jitterDDP\_sma\_flatness', 'voicingFinalUnclipped\_sma\_de\_lpc2',

'jitterLocal\_sma\_de\_lpc1', 'logHNR\_sma\_de\_lpc0',

'audspec\_lengthL1norm\_sma\_linregc1',

'audSpec\_Rfilt\_sma[2]\_stddevFallingSlope',

'audSpec\_Rfilt\_sma[15]\_qregerrQ', 'audSpec\_Rfilt\_sma[18]\_amean',

'audSpec\_Rfilt\_sma[19]\_rqmean',

'pcm\_fftMag\_spectralRollOff50.0\_sma\_qregerrQ',

'pcm\_fftMag\_spectralEntropy\_sma\_flatness',

'pcm\_fftMag\_spectralVariance\_sma\_flatness',

'pcm\_fftMag\_spectralKurtosis\_sma\_peakMeanMeanDist', 'mfcc\_sma[7]\_amean',

'audSpec\_Rfilt\_sma\_de[2]\_flatness',

'audSpec\_Rfilt\_sma\_de[7]\_stddevFallingSlope',

'audSpec\_Rfilt\_sma\_de[12]\_peakMeanRel',

'audSpec\_Rfilt\_sma\_de[12]\_minRangeRel',

'pcm\_fftMag\_spectralSkewness\_sma\_de\_peakMeanAbs',

'mfcc\_sma\_de[3]\_meanRisingSlope'],

dtype='object')

Out[5]:

0.8604651162790697