

NOAA

November 12, 2018

```
In [1]: from source.util import utils as u
        from source import metrics, plots
        from source import handshake2, scargc, hs
        import sys
        import time
        import os
        import psutil
        import resource
```

```
In [2]: poolsize = 150
        clusters = 2
        n_components = 2
        epsilon = 0.1
        percent = 30
```

```
In [3]: base = '/home/localuser/Documentos/procopio/tcc/datasets/NOAA.txt'
        dataset, data_labeled, dataset_train, l_train, stream, l_stream, n_features = u.criar_da
```

Handshake

```
In [4]: start = time.time()

        predicted, updt = handshake2.handshake2(dataset, data_labeled, dataset_train, l_train, s

        end = time.time()
        mem = resource.getrusage(resource.RUSAGE_SELF).ru_maxrss
        tempo = end - start
```

SCARGC

```
In [5]: startScargc = time.time()

        predictedS, updtS = scargc.scargc_1NN(dataset, data_labeled, dataset_train, l_train, str

        endScargc = time.time()
        memS = resource.getrusage(resource.RUSAGE_SELF).ru_maxrss
        tempoS = endScargc - startScargc
```

```
/home/localuser/anaconda3/lib/python3.6/site-packages/sklearn/cluster/k_means_.py:896: RuntimeWarning:
  return_n_iter=True)
```

```
In [6]: acc_percent, f1_per, mcc_per = metrics.makeBatches(l_stream, predicted, len(stream))
        score, f1, mcc, std = metrics.metrics(acc_percent, l_stream, predicted, f1_type = 'macro')

        acc_percentScargc, f1_S, mcc_S = metrics.makeBatches(l_stream, predictedS, len(stream))
        scoreS, f1S, mccS, stdS = metrics.metrics(acc_percentScargc, l_stream, predictedS, f1_type = 'macro')

/home/localuser/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.py:1135: Un
  'precision', 'predicted', average, warn_for)
/home/localuser/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.py:538: Run
  mcc = cov_ytyp / np.sqrt(cov_ytyp * cov_ypyp)
```

```
In [7]: print('Tempo de Execução: ', tempo)
        print('memory peak: ', mem)
        print('Acc: ', score)
        print('Macro-F1: ', f1)
        print('MCC: ', mcc)
        print('Desvio Padrão: ', std)
        print('Numero de atualizações: ', updt)
        plots.plotAcc(acc_percent, 100, 'NOAA_Handshake')
        plots.plotF1(f1_per, 100, 'NOAA_Handshake')

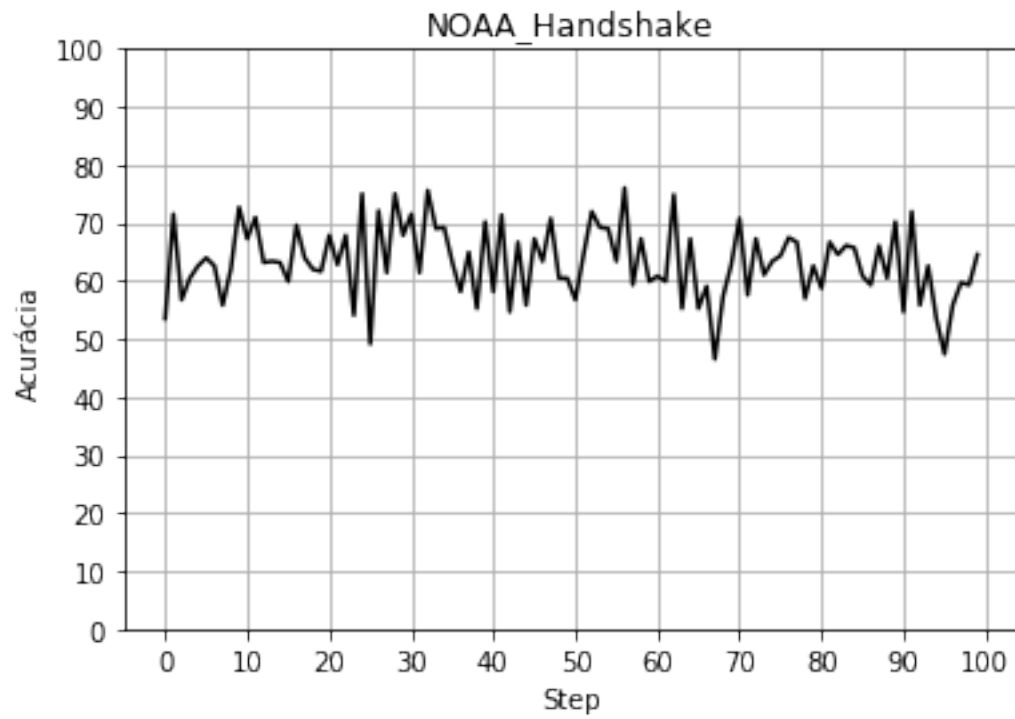
        print('Tempo de Execução: ', tempoS)
        print('memory peak: ', memS)
        print('Acc: ', scoreS)
        print('Macro-F1: ', f1S)
        print('MCC: ', mccS)
        print('Desvio Padrão: ', stdS)
        print('Numero de atualizações: ', updtS)
        plots.plotAcc(acc_percentScargc, 100, 'NOAA_SCARGC')
        plots.plotF1(f1_S, 100, 'NOAA_SCARGC')

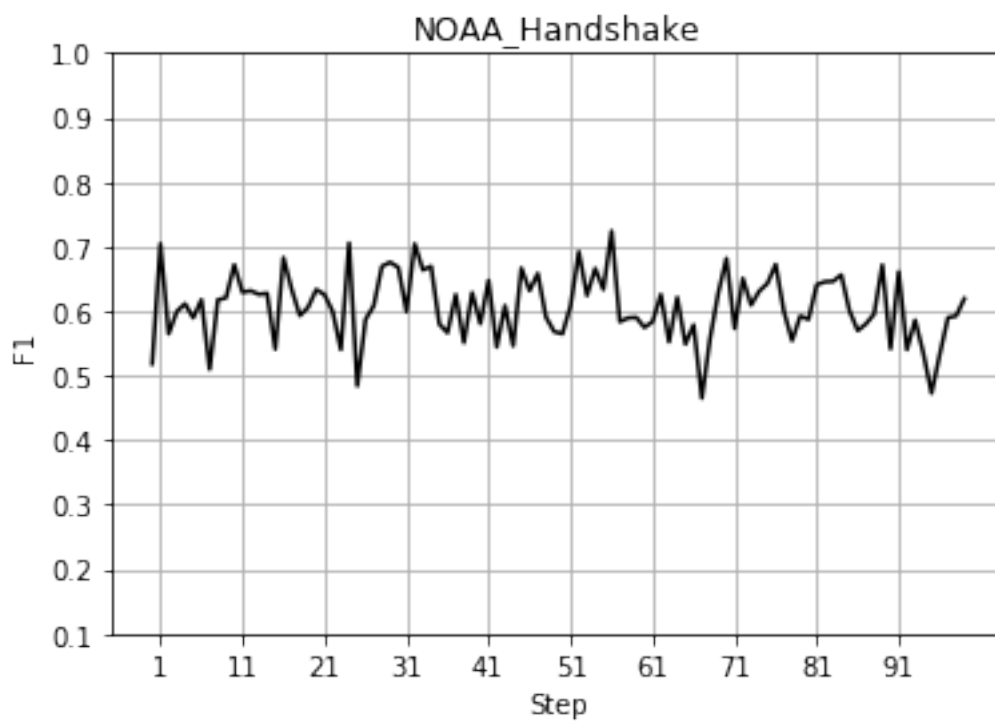
        listTime = [tempo, tempoS]
        listAcc = [score, scoreS]
        listMethod = ['Handshake', 'SCARGC']
        matrixAcc = [acc_percent[0], acc_percentScargc[0]]
        matrixF1 = [f1_per[0], f1_S[0]]

        plots.plotTime(listTime, listMethod)
        plots.plotAverageAcc(listAcc, listMethod)
        plots.plotAccuracyCurves(matrixAcc, listMethod)
        plots.plotBoxplot('acc', matrixAcc, listMethod)
        plots.plotBoxplot('f1', matrixF1, listMethod)
```

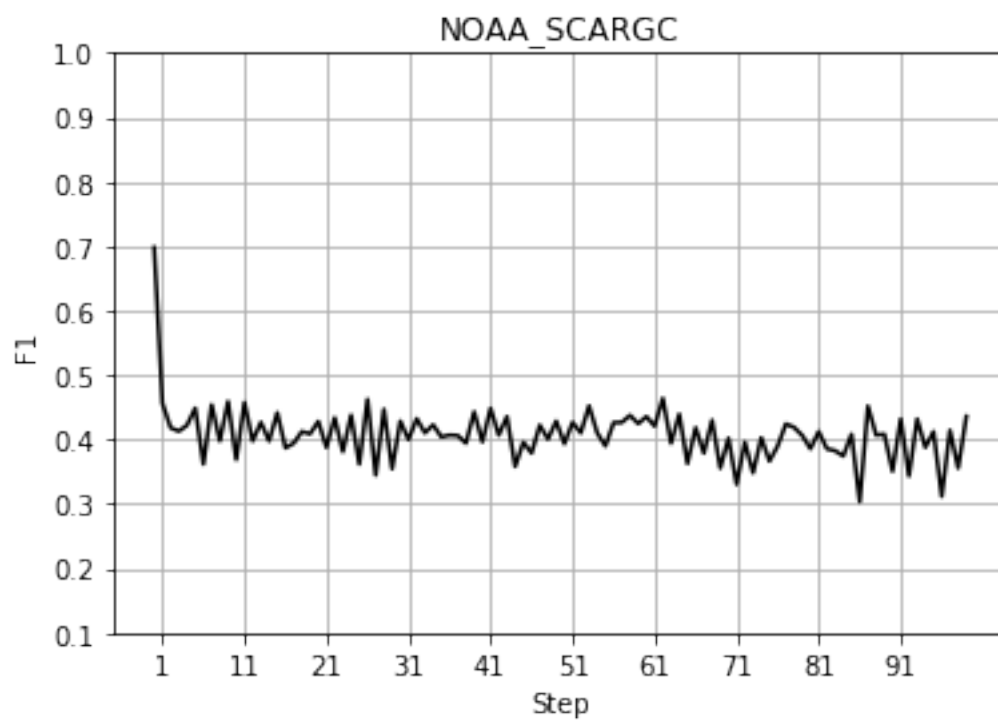
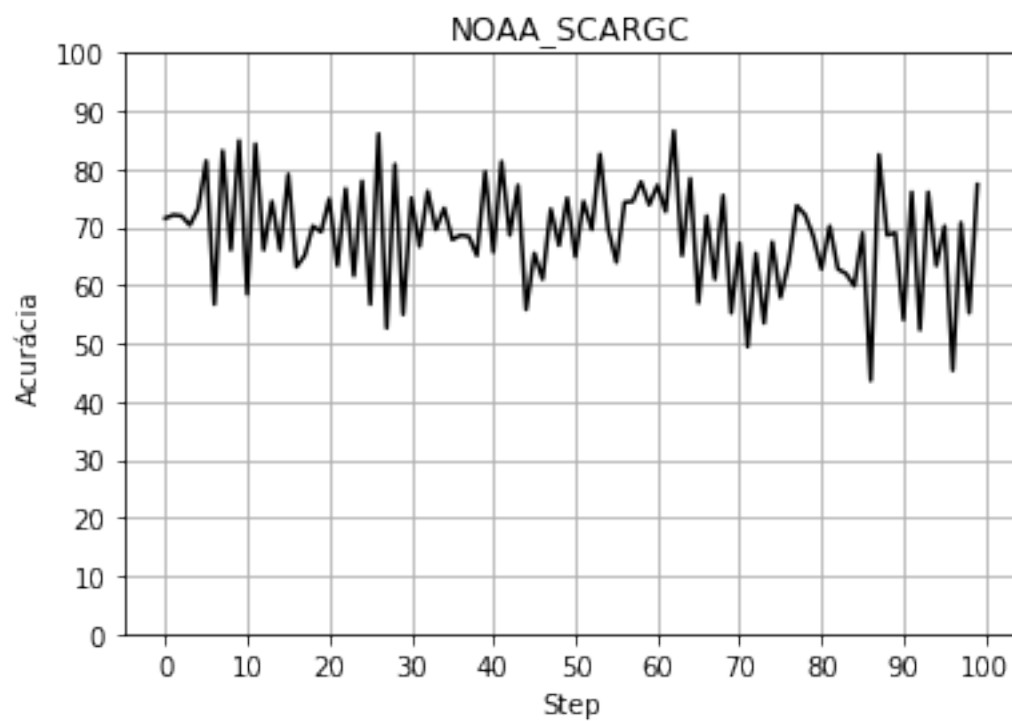
```
Tempo de Execução: 19.935127019882202
memory peak: 140660
```

Acc: 0.6324714402284782
Macro-F1: 0.6213067917091305
MCC: 0.2956897007801811
Desvio Padrão: 0.06265459421980109
Numero de atualizações: 70

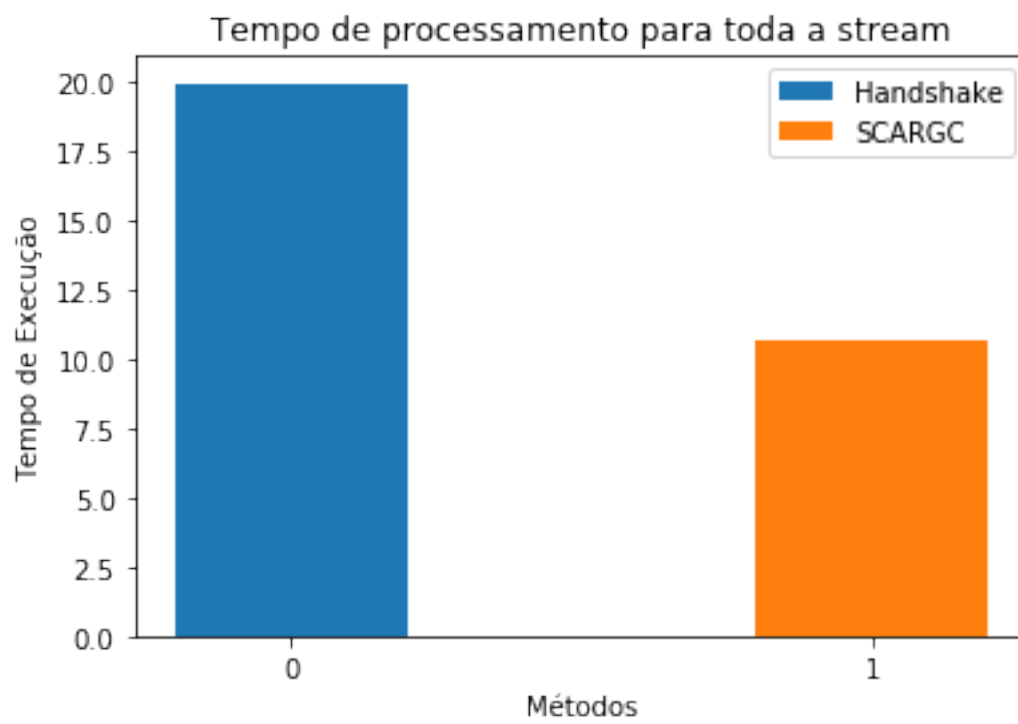


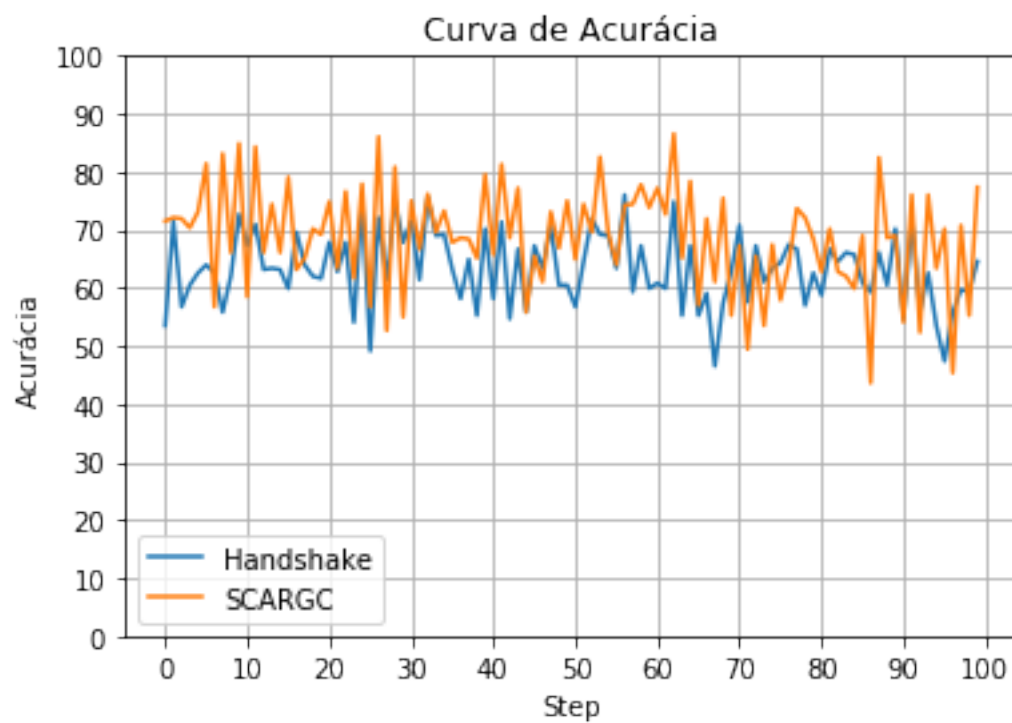
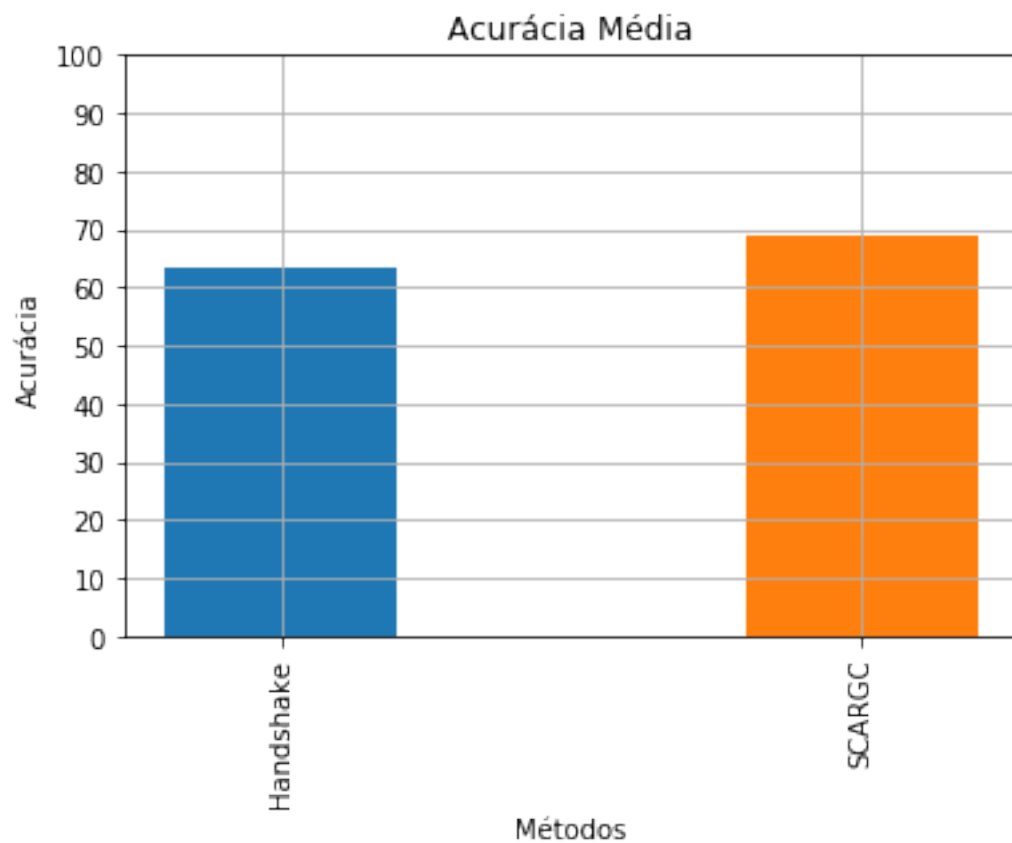


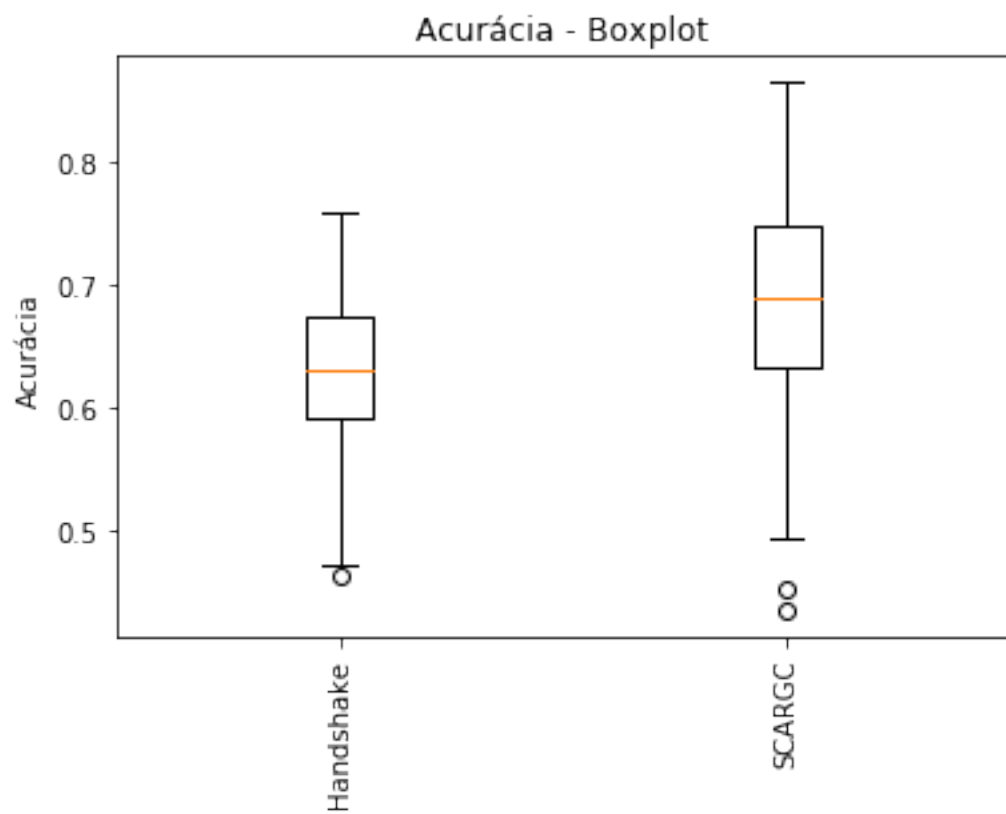
Tempo de Execução: 10.643974781036377
memory peak: 146484
Acc: 0.6869073847409222
Macro-F1: 0.4147705712931528
MCC: 0.04129842271706247
Desvio Padrão: 0.0899201515777724
Numero de atualizações: 2

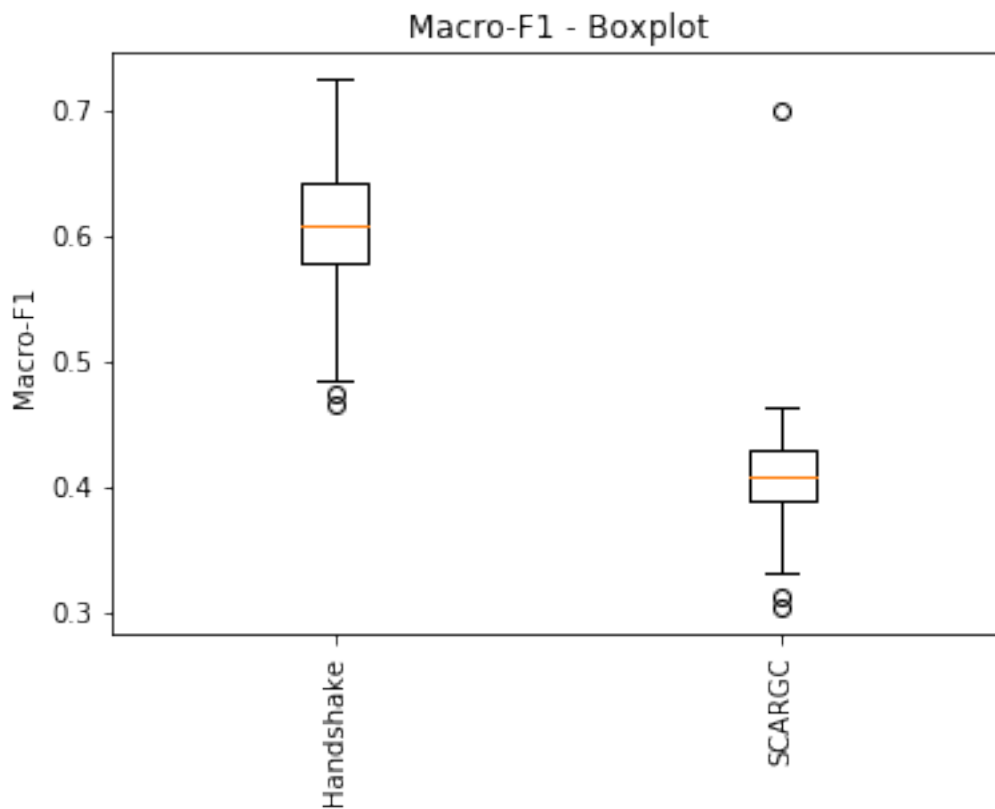


```
/home/localuser/anaconda3/lib/python3.6/site-packages/matplotlib/cbook/deprecation.py:106: MatplotlibDeprecationWarning: The 'warn' method is deprecated, use 'warning' instead.  
warnings.warn(message, mplDeprecation, stacklevel=1)
```

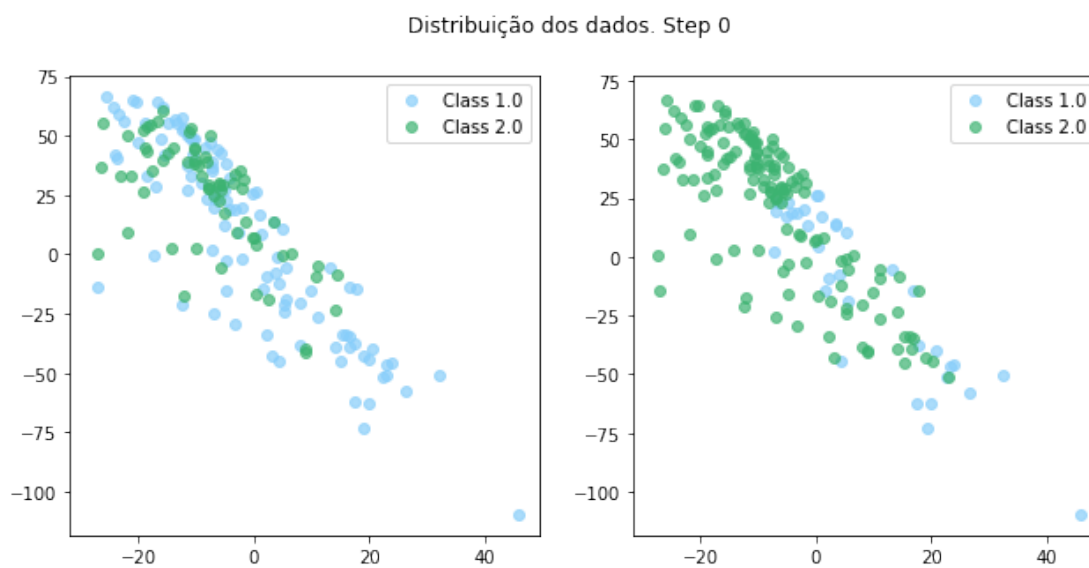




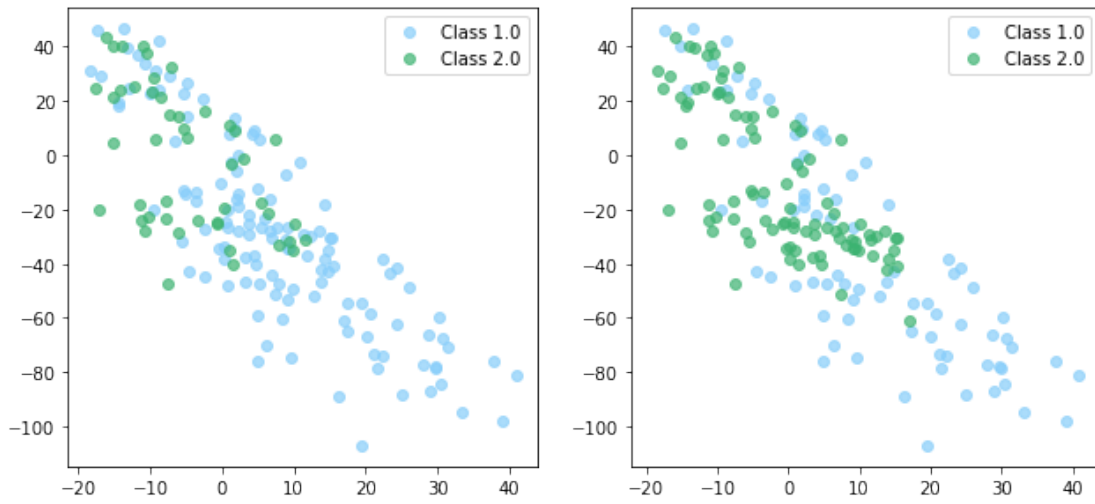




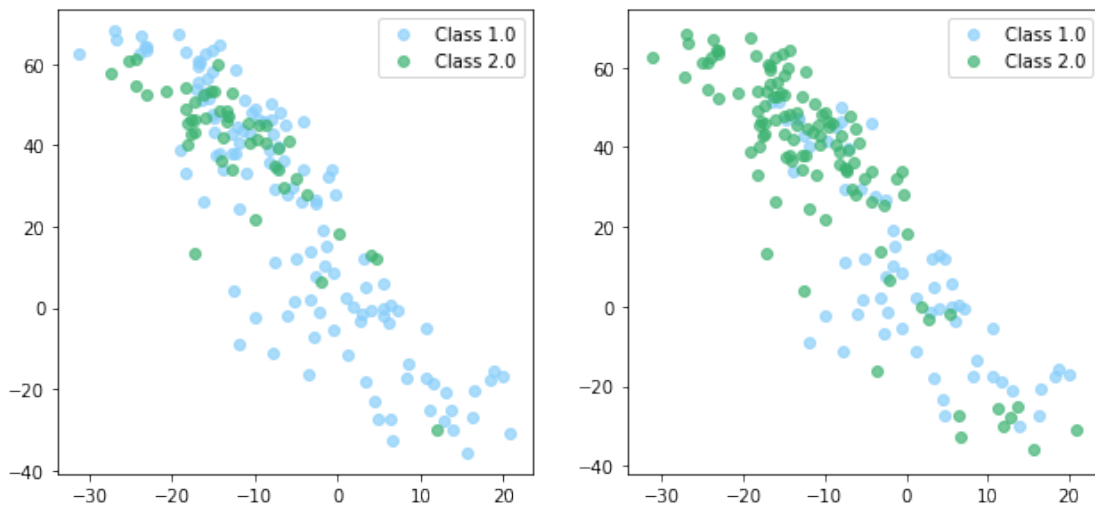
```
In [8]: plots.plotPerBatches(stream, predicted, l_stream, len(stream))
```



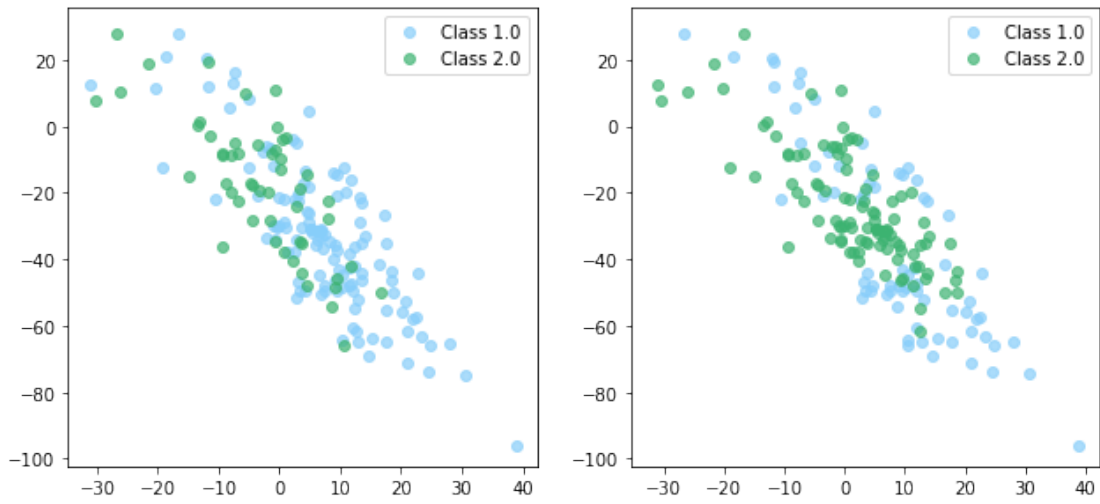
Distribuição dos dados. Step 1



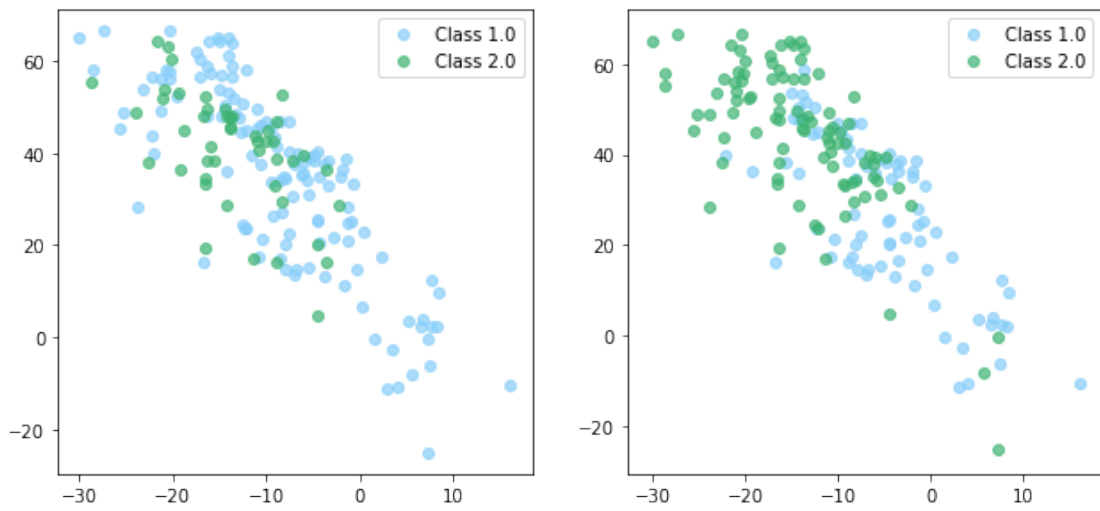
Distribuição dos dados. Step 2



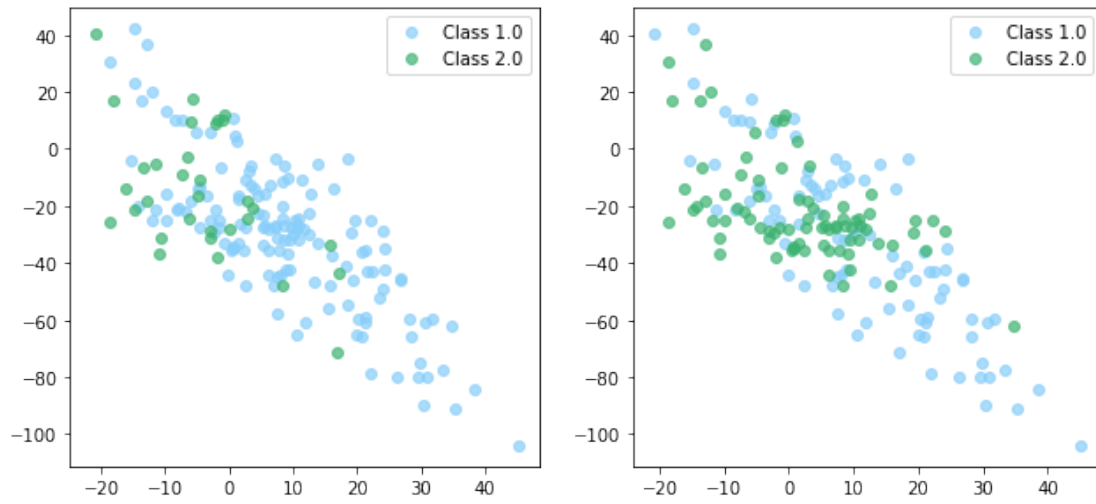
Distribuição dos dados. Step 3



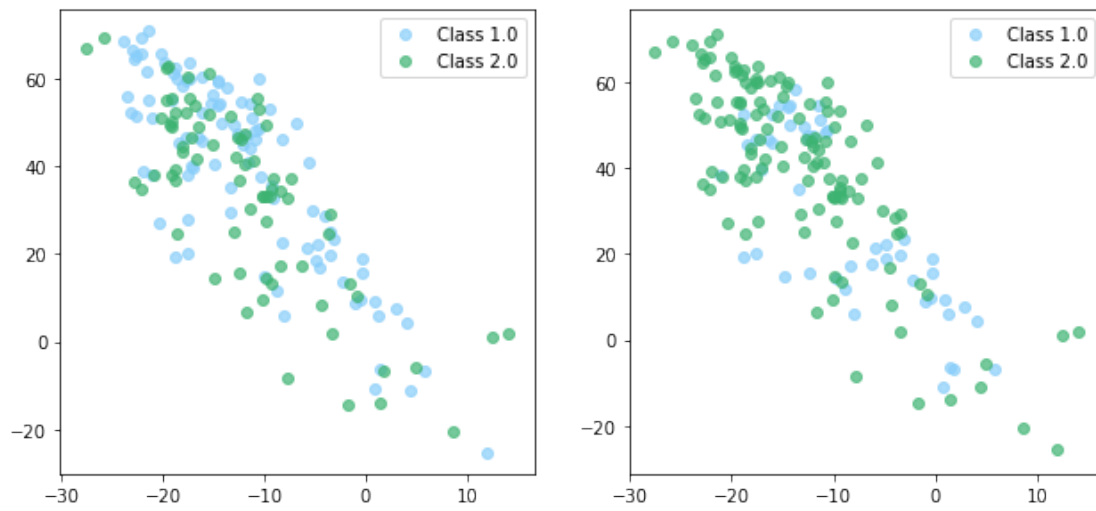
Distribuição dos dados. Step 4



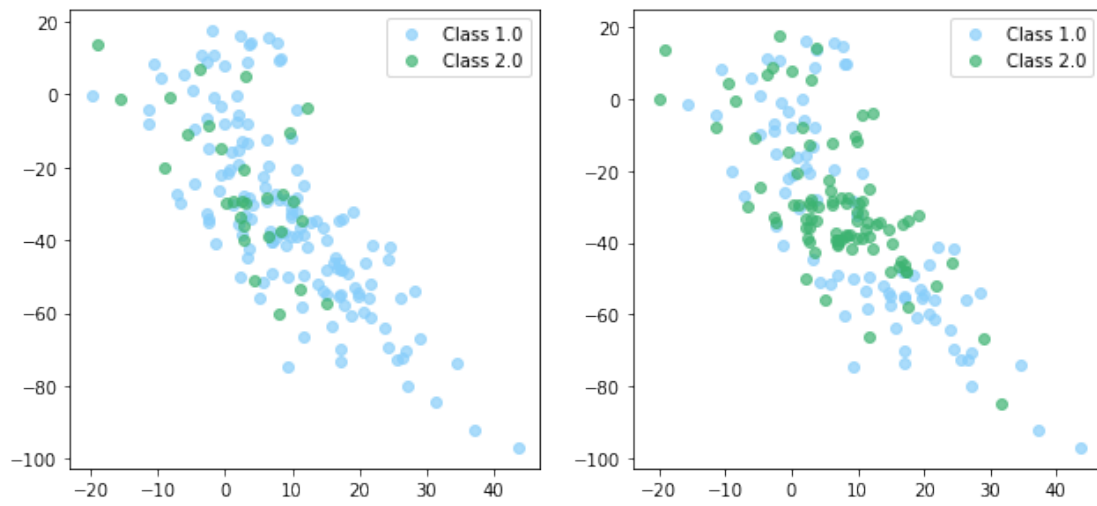
Distribuição dos dados. Step 5



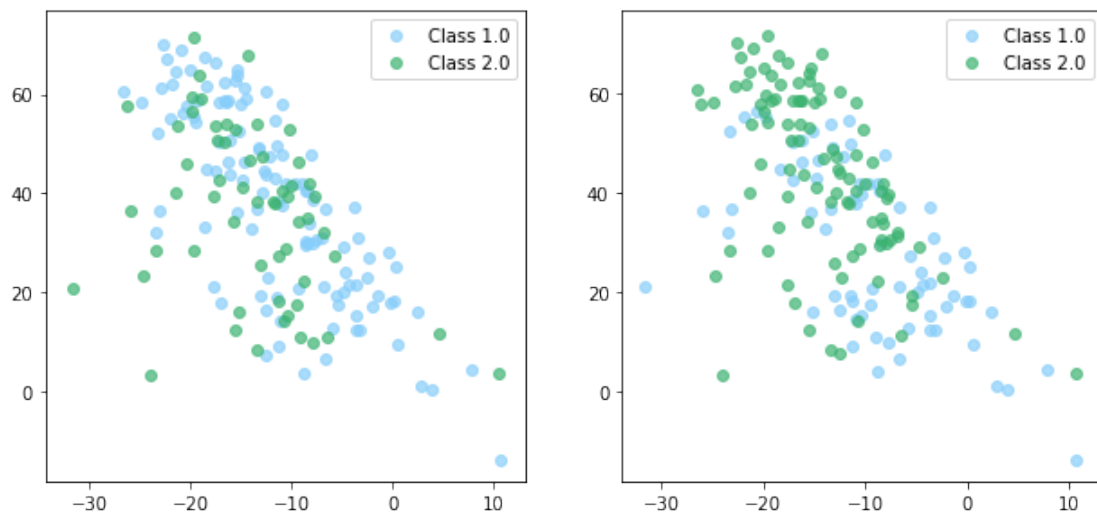
Distribuição dos dados. Step 6



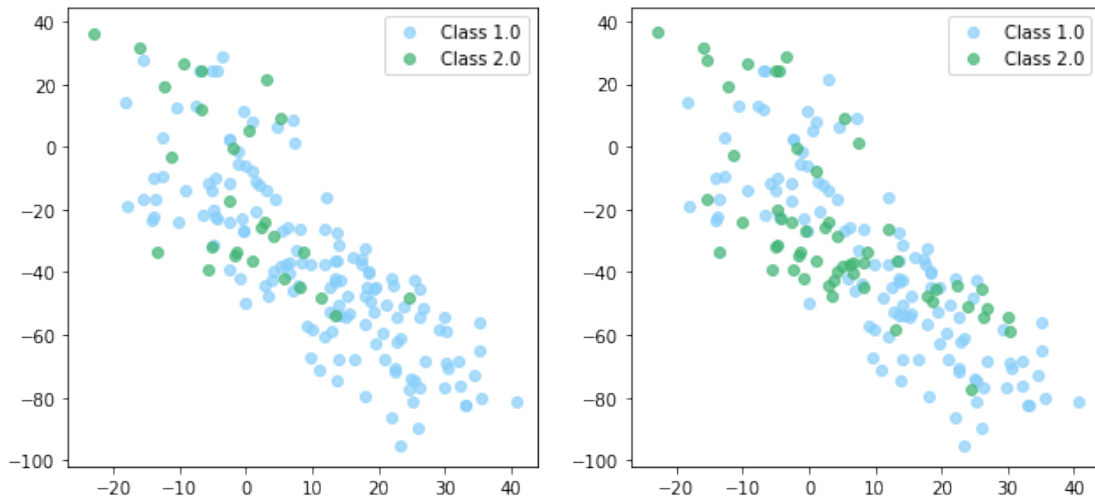
Distribuição dos dados. Step 7



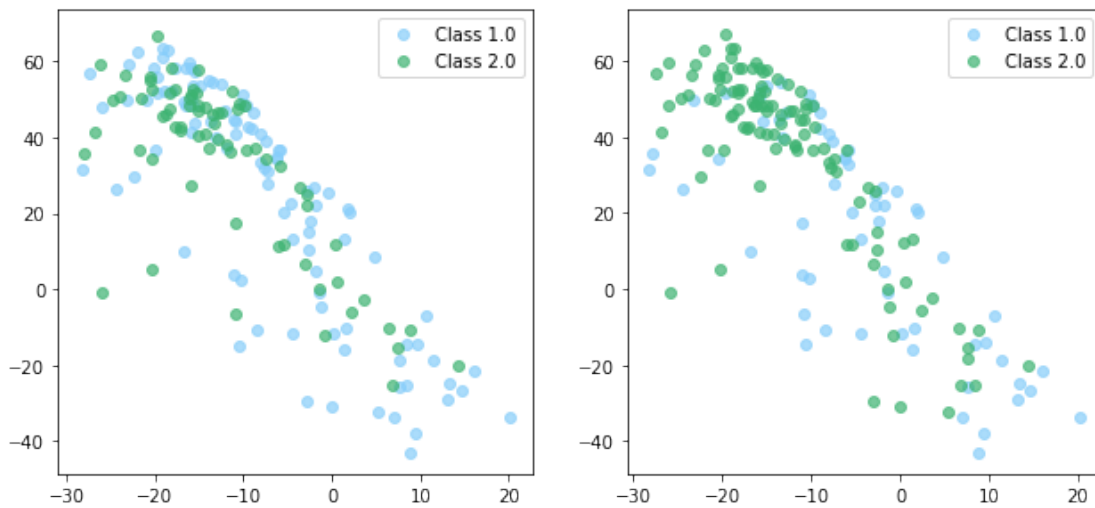
Distribuição dos dados. Step 8



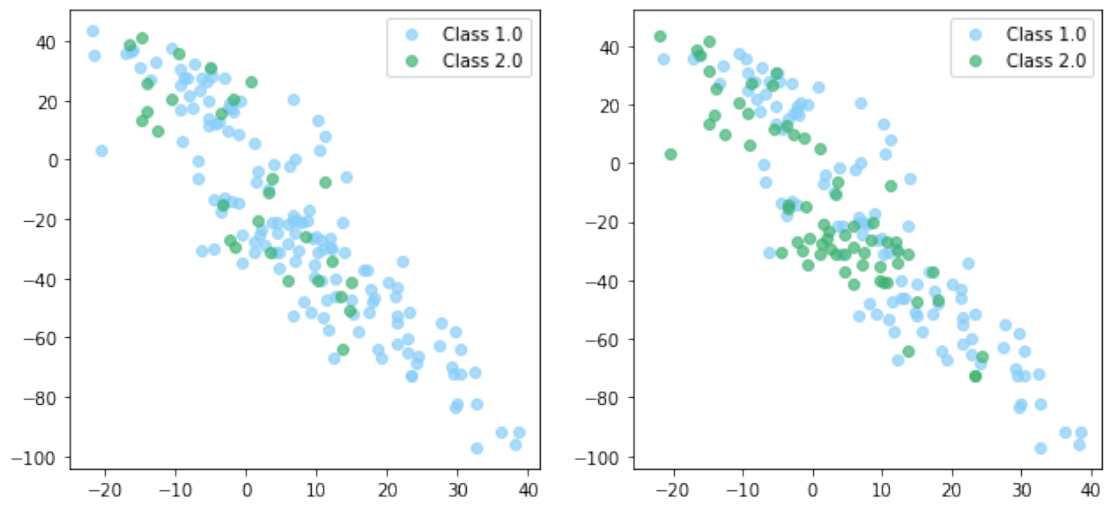
Distribuição dos dados. Step 9



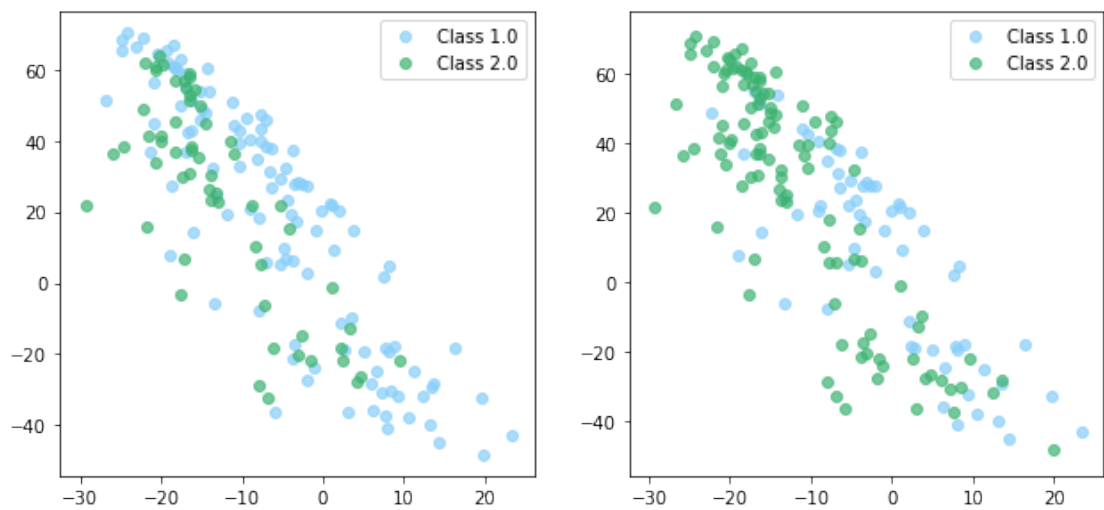
Distribuição dos dados. Step 10



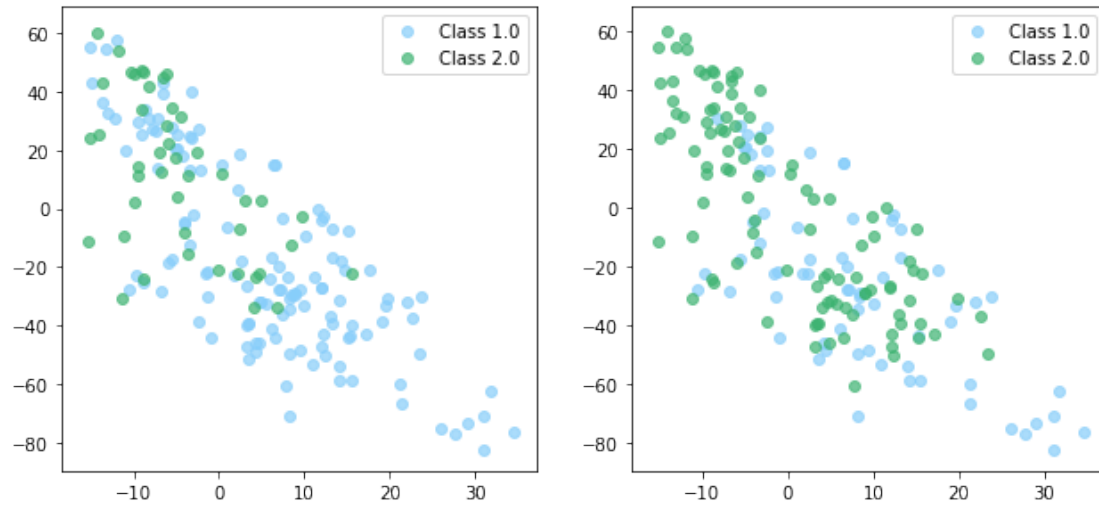
Distribuição dos dados. Step 11



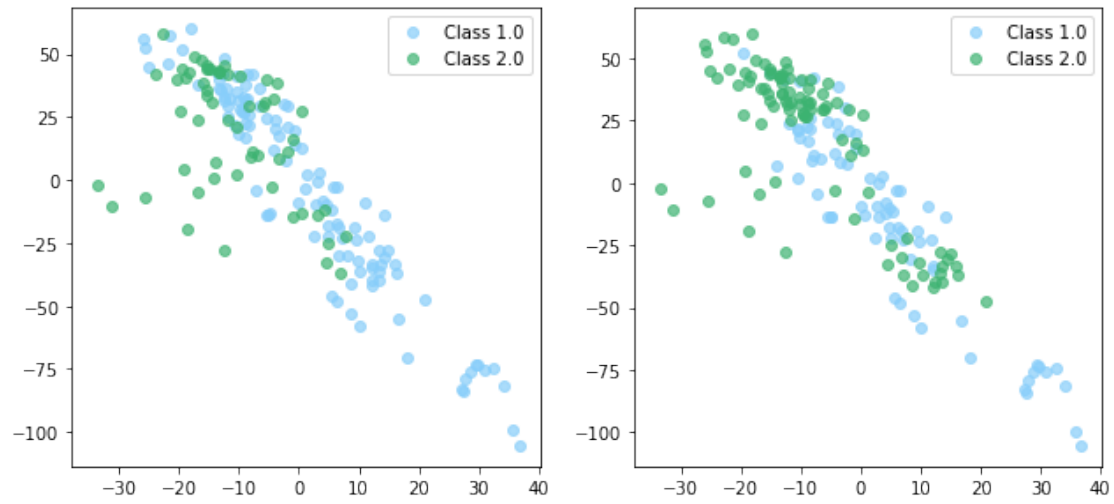
Distribuição dos dados. Step 12



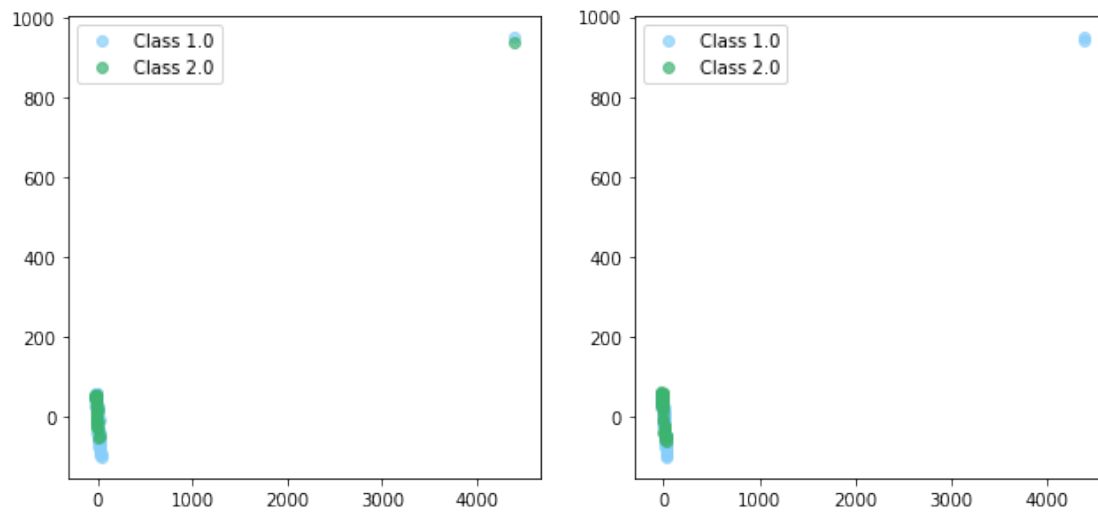
Distribuição dos dados. Step 13



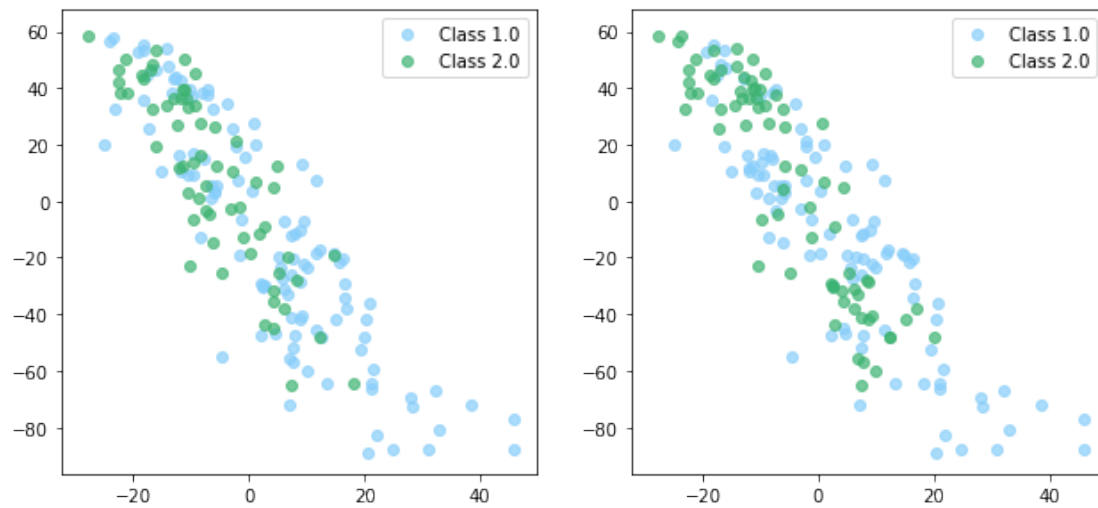
Distribuição dos dados. Step 14



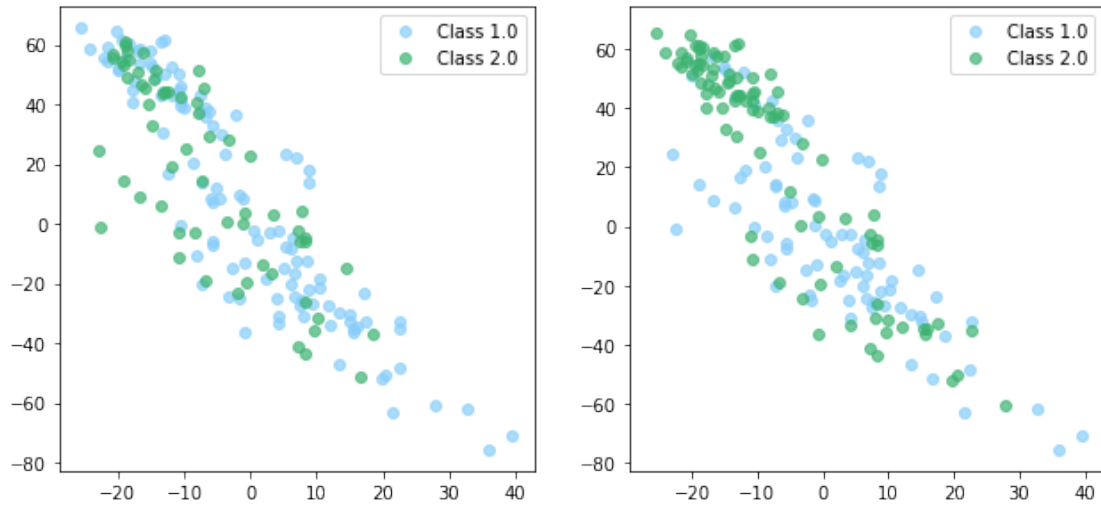
Distribuição dos dados. Step 15



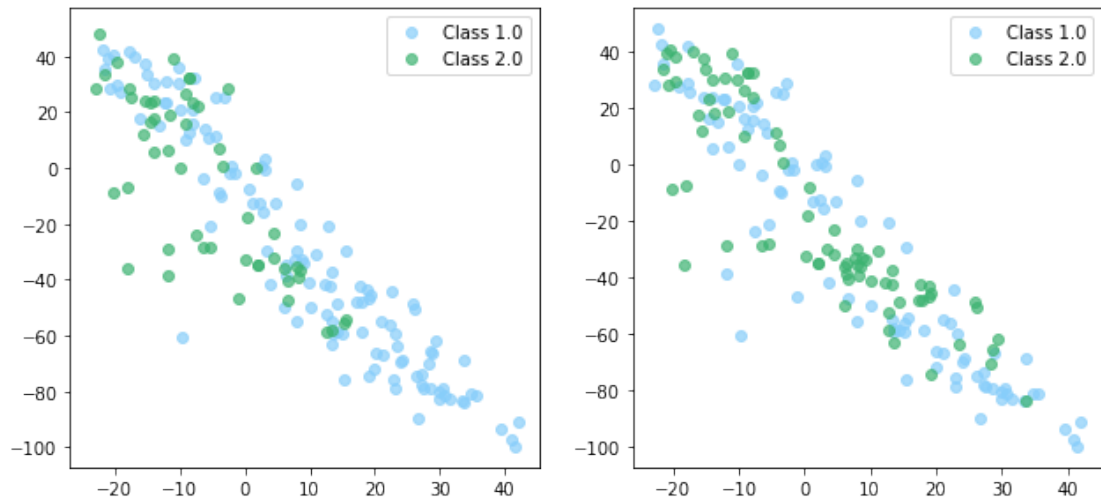
Distribuição dos dados. Step 16



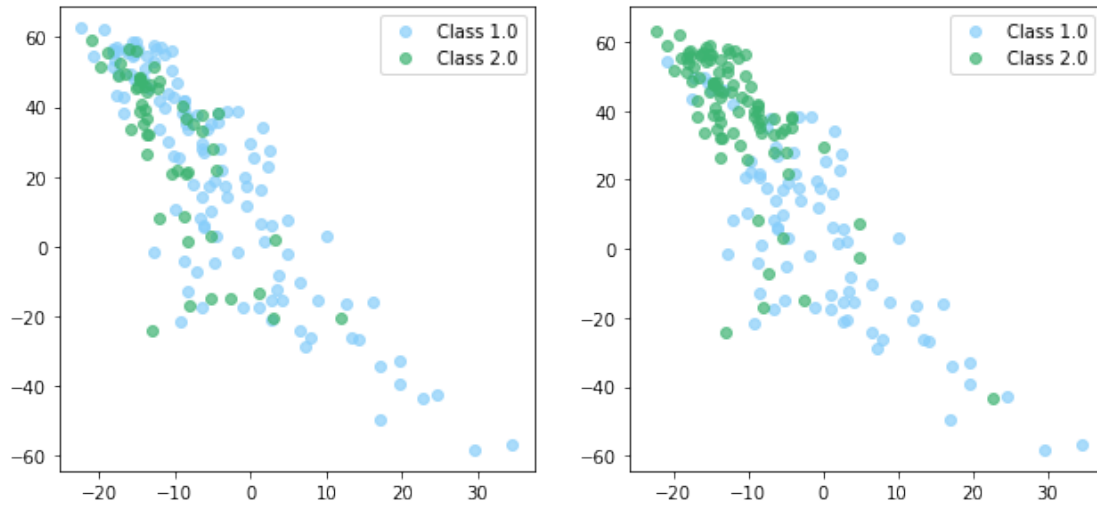
Distribuição dos dados. Step 17



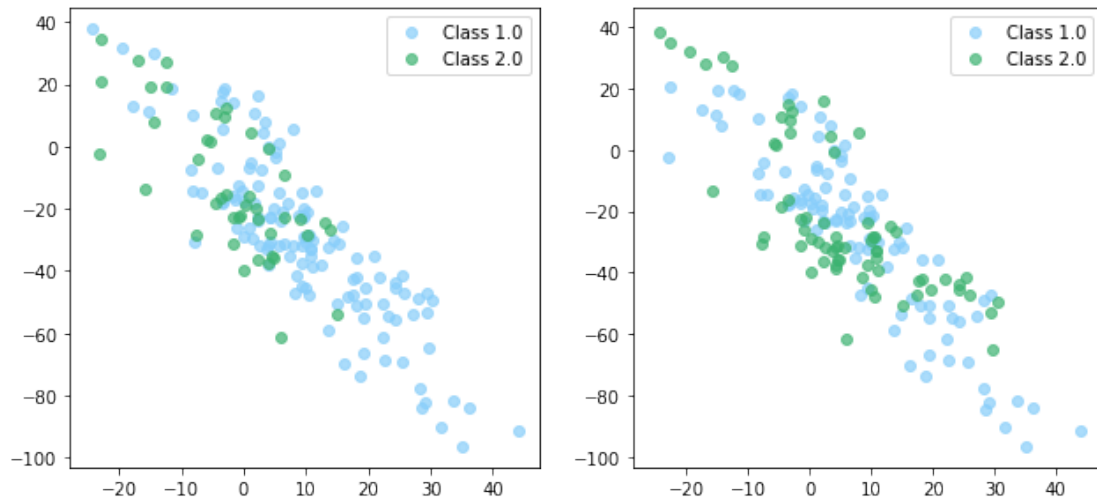
Distribuição dos dados. Step 18



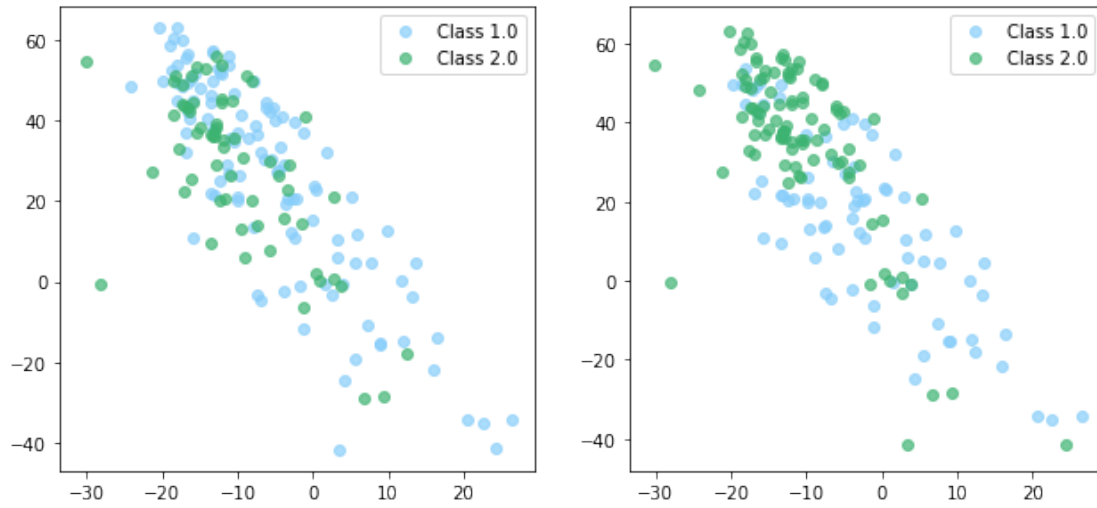
Distribuição dos dados. Step 19



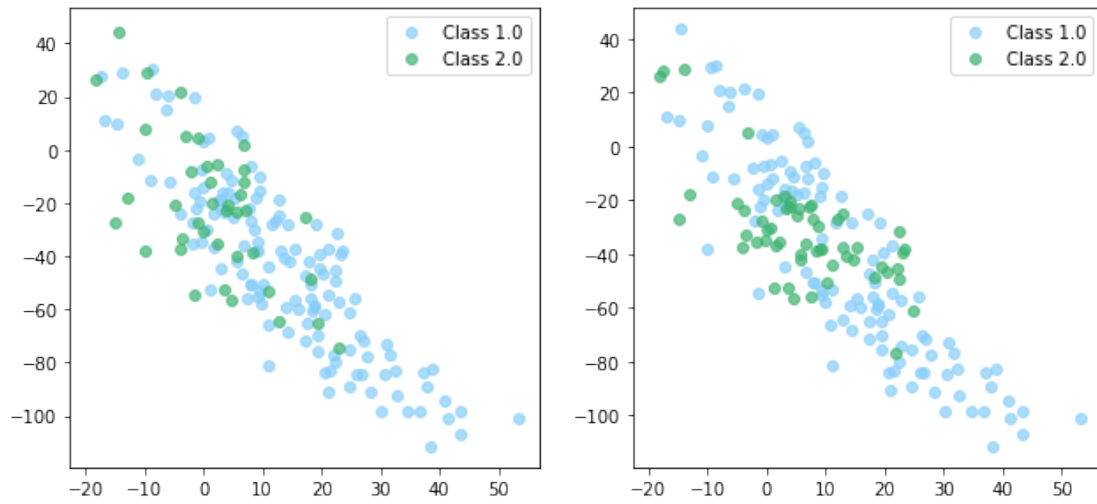
Distribuição dos dados. Step 20



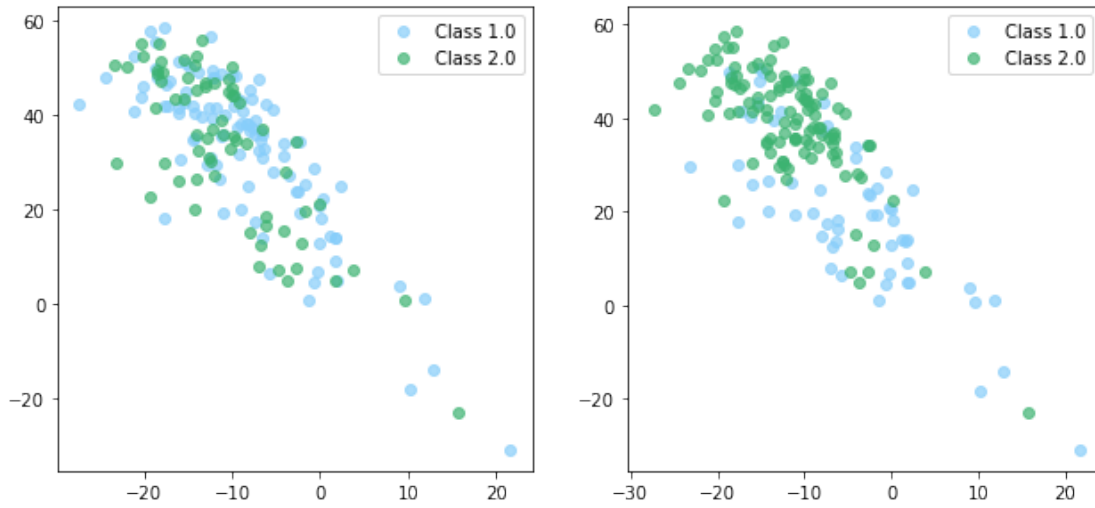
Distribuição dos dados. Step 21



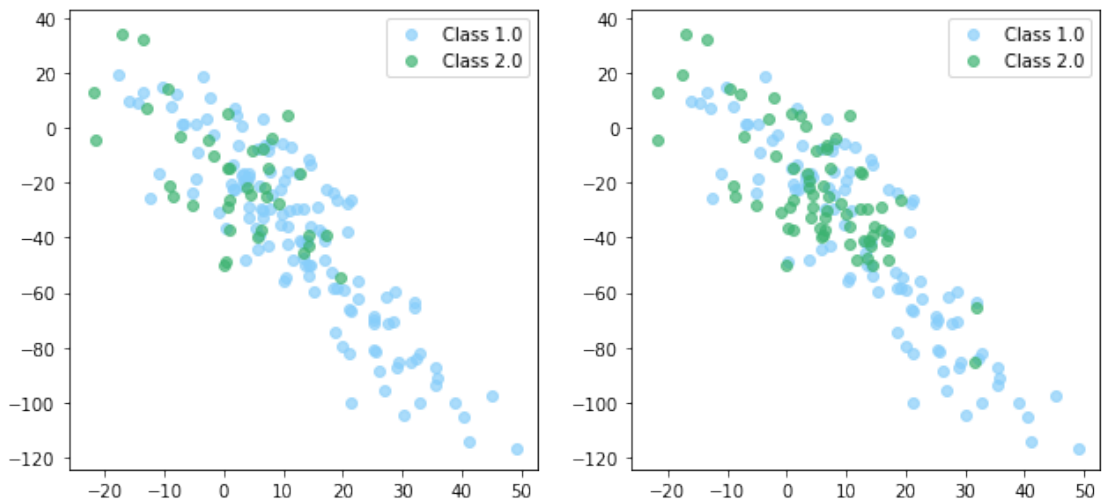
Distribuição dos dados. Step 22



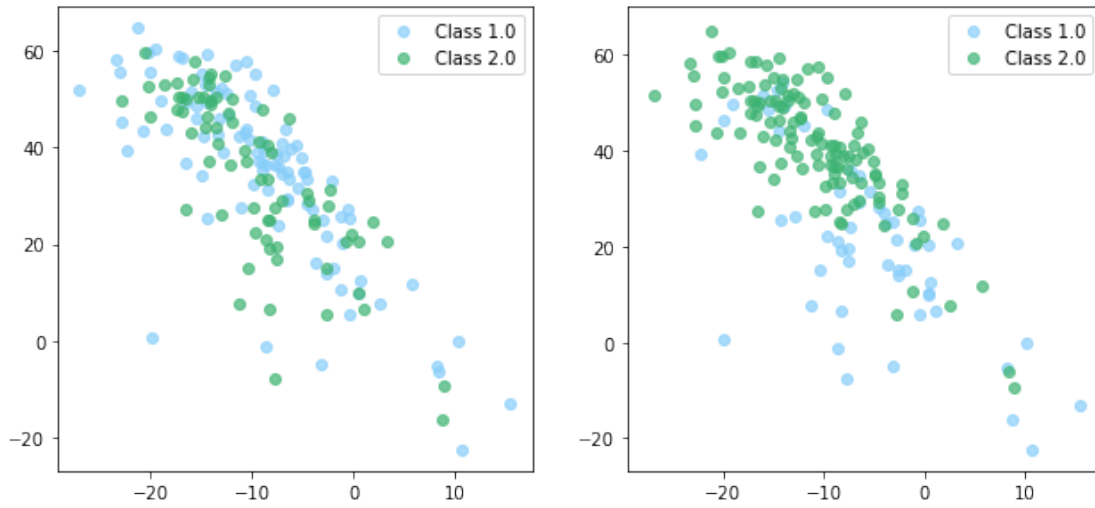
Distribuição dos dados. Step 23



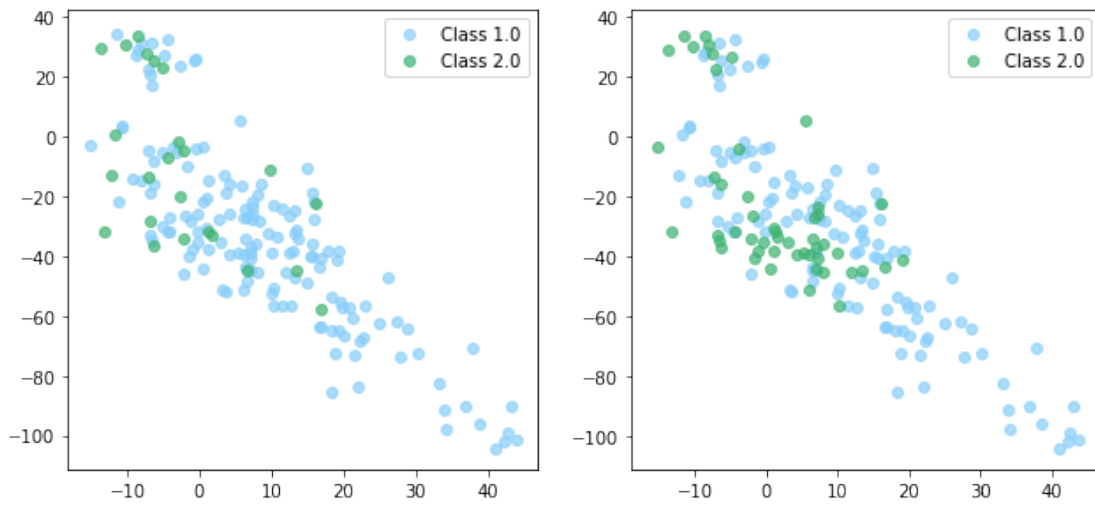
Distribuição dos dados. Step 24



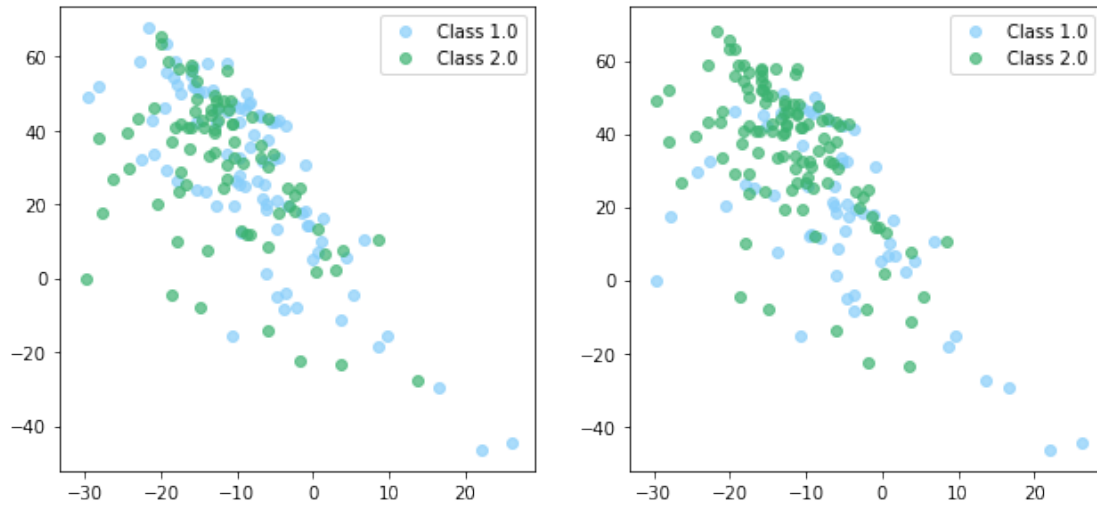
Distribuição dos dados. Step 25



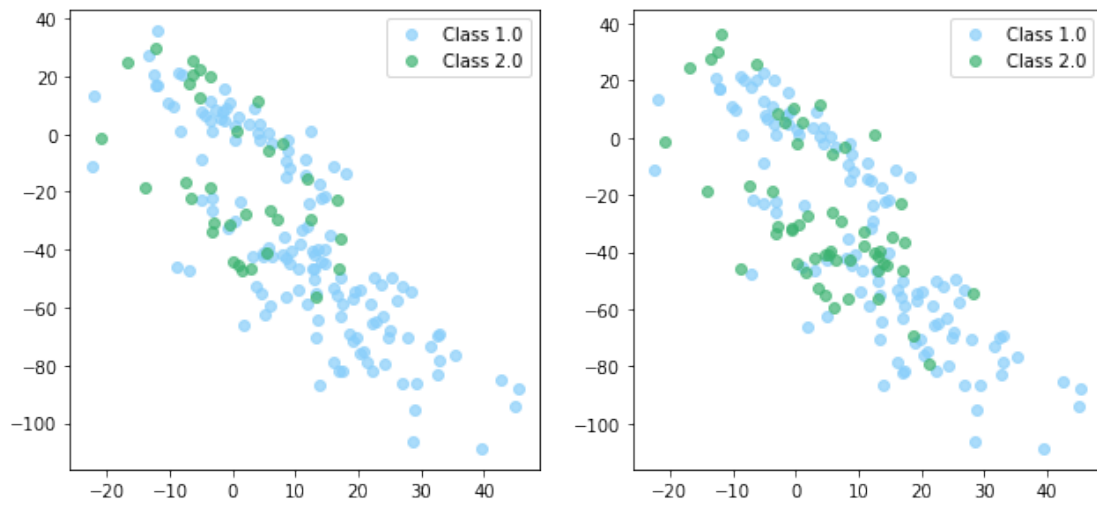
Distribuição dos dados. Step 26



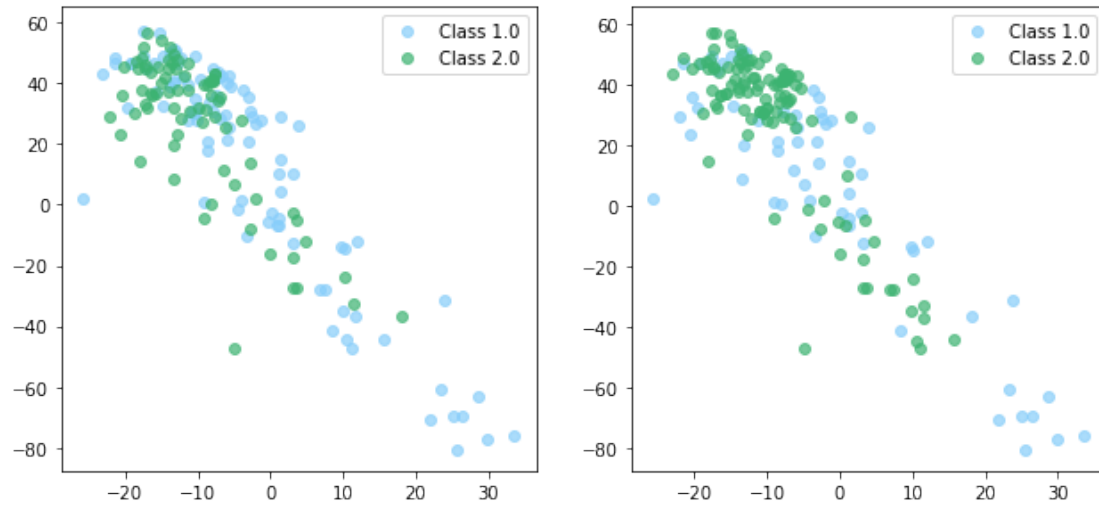
Distribuição dos dados. Step 27



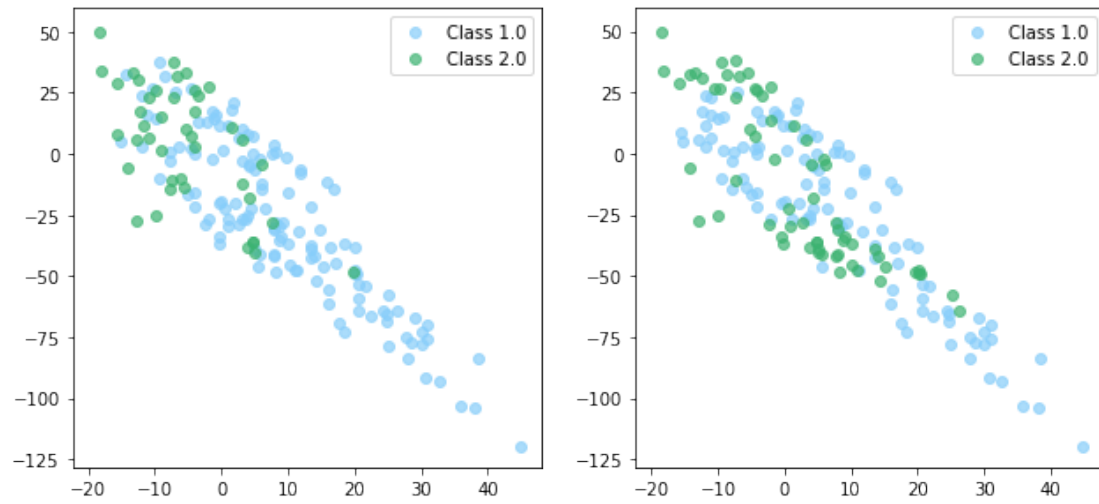
Distribuição dos dados. Step 28



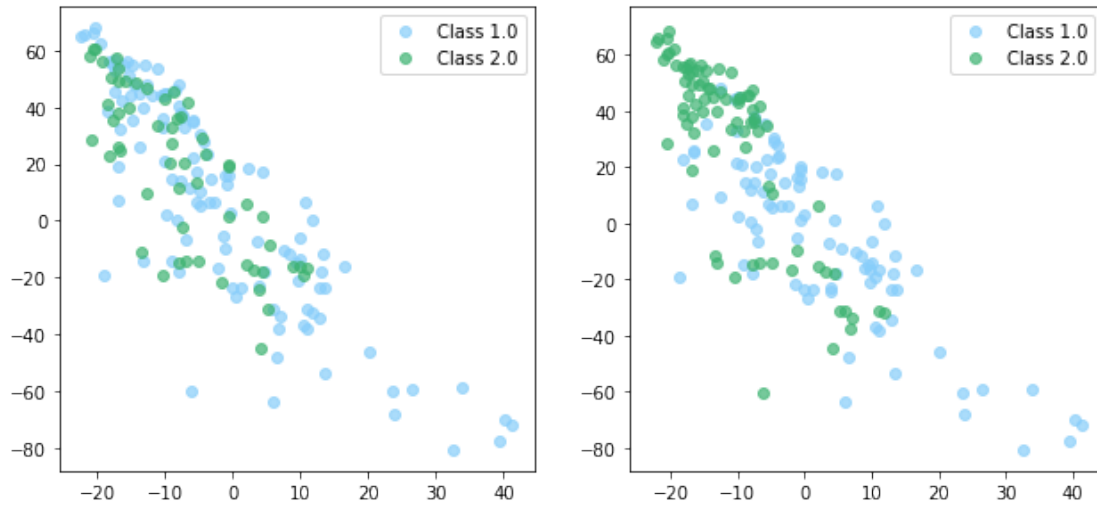
Distribuição dos dados. Step 29



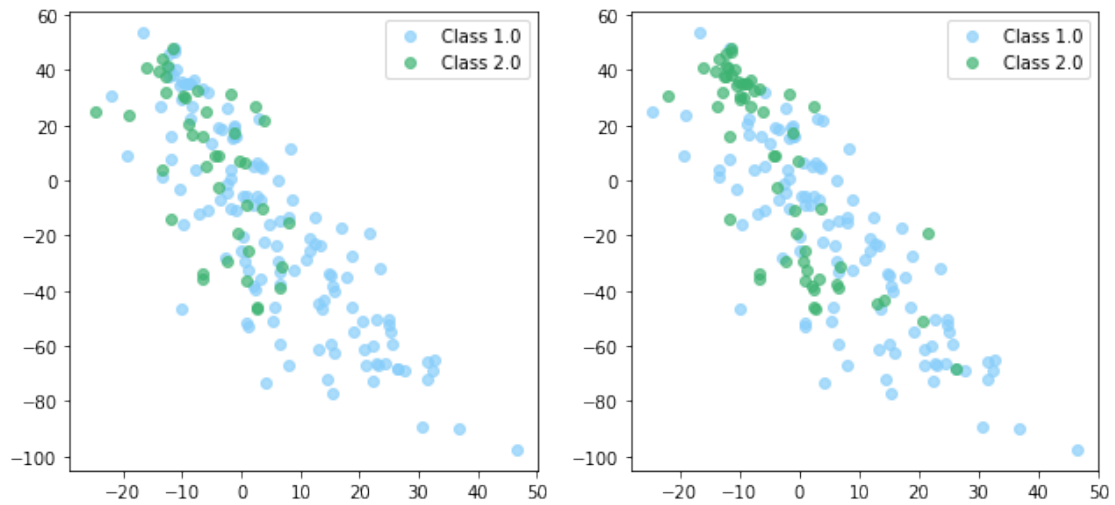
Distribuição dos dados. Step 30



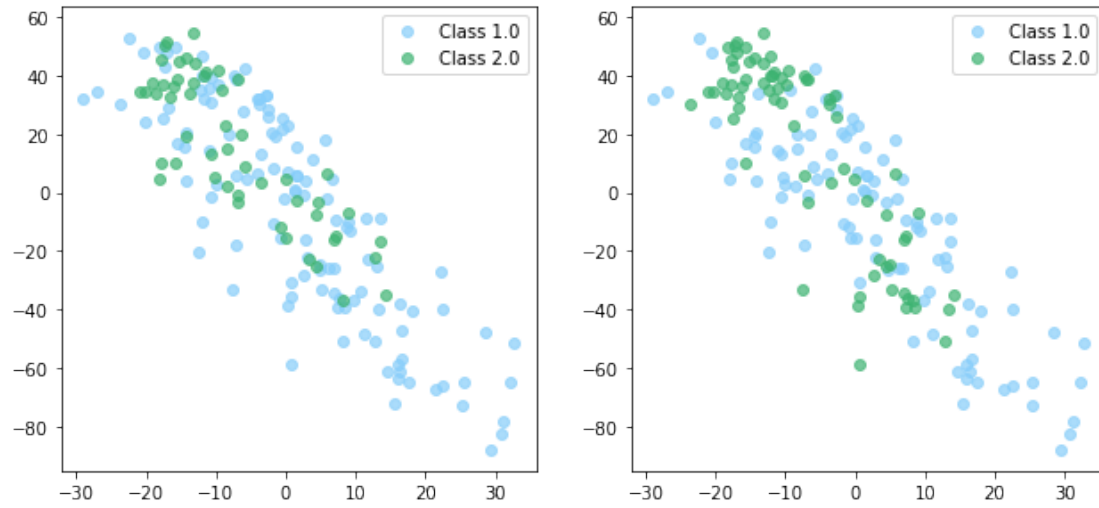
Distribuição dos dados. Step 31



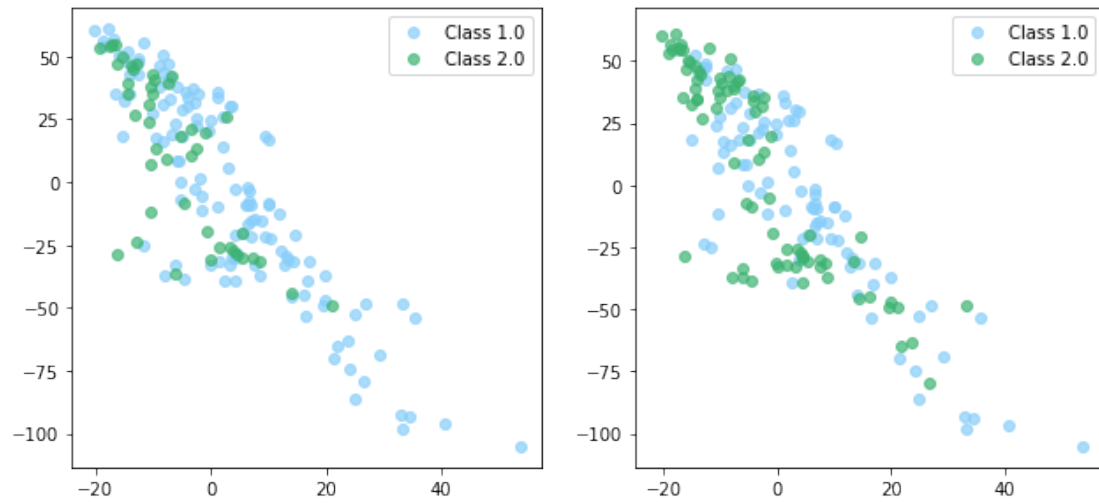
Distribuição dos dados. Step 32



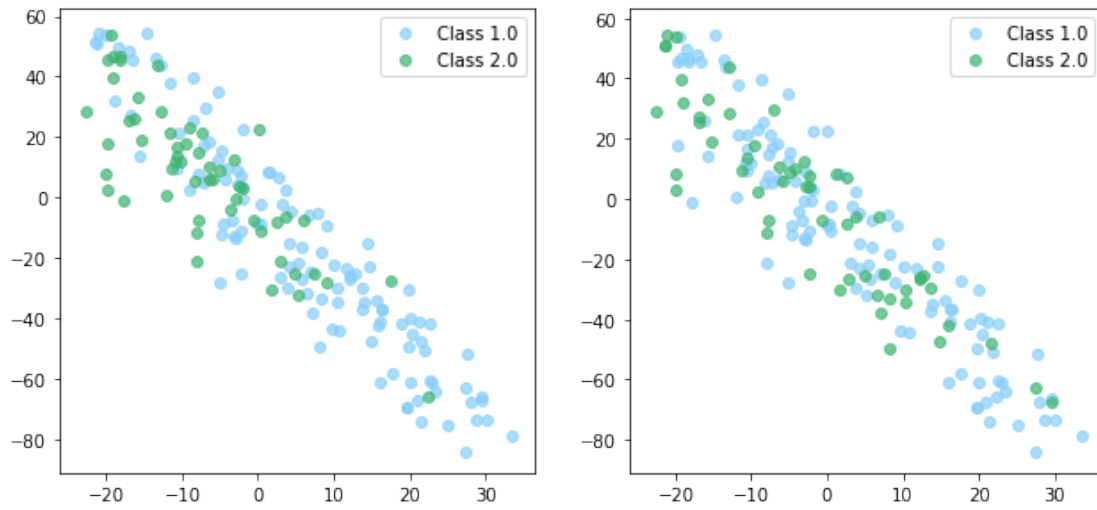
Distribuição dos dados. Step 33



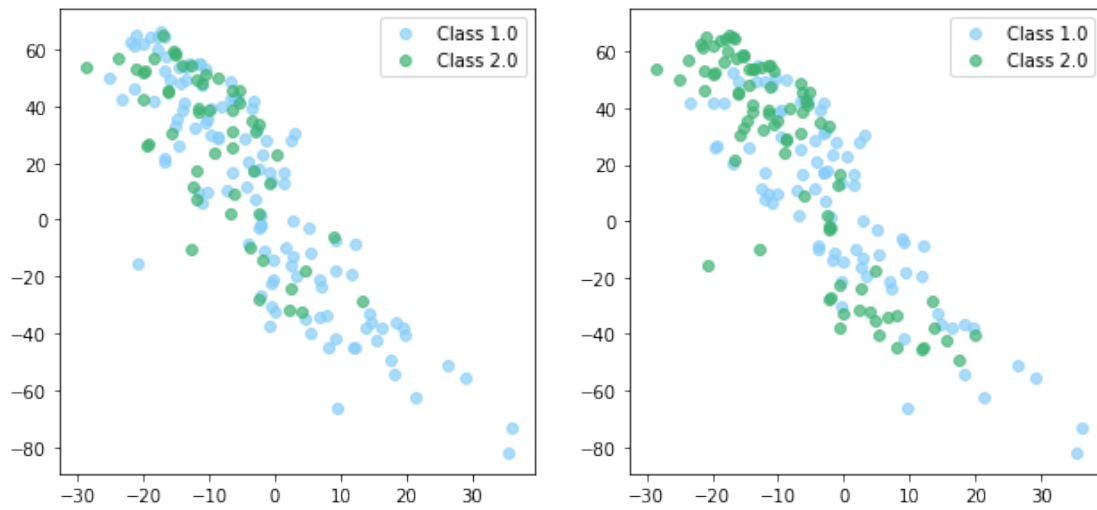
Distribuição dos dados. Step 34



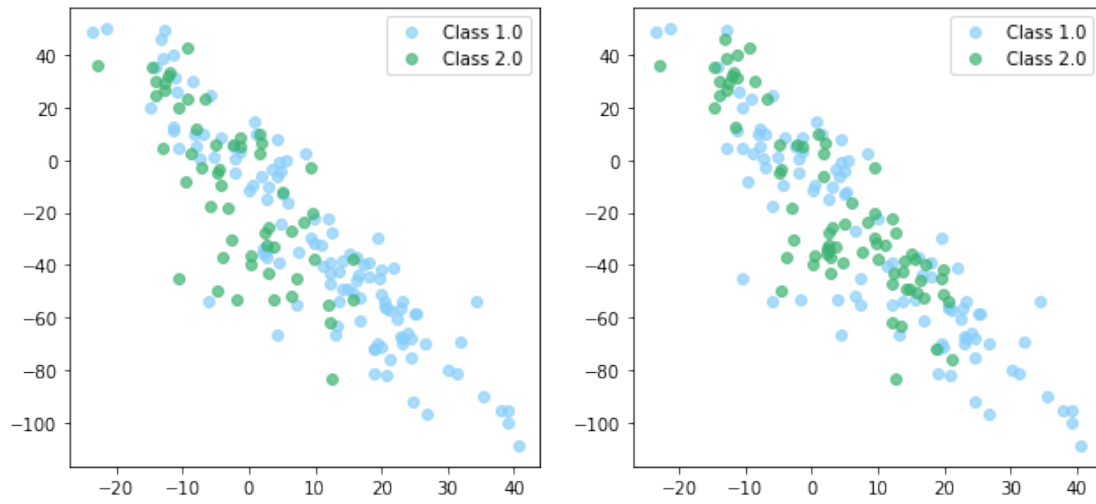
Distribuição dos dados. Step 35



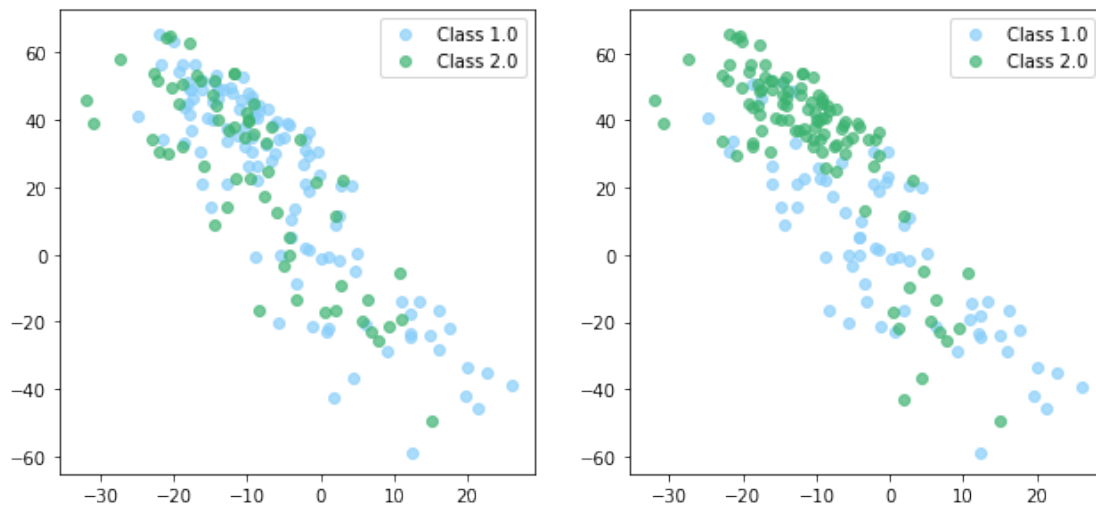
Distribuição dos dados. Step 36



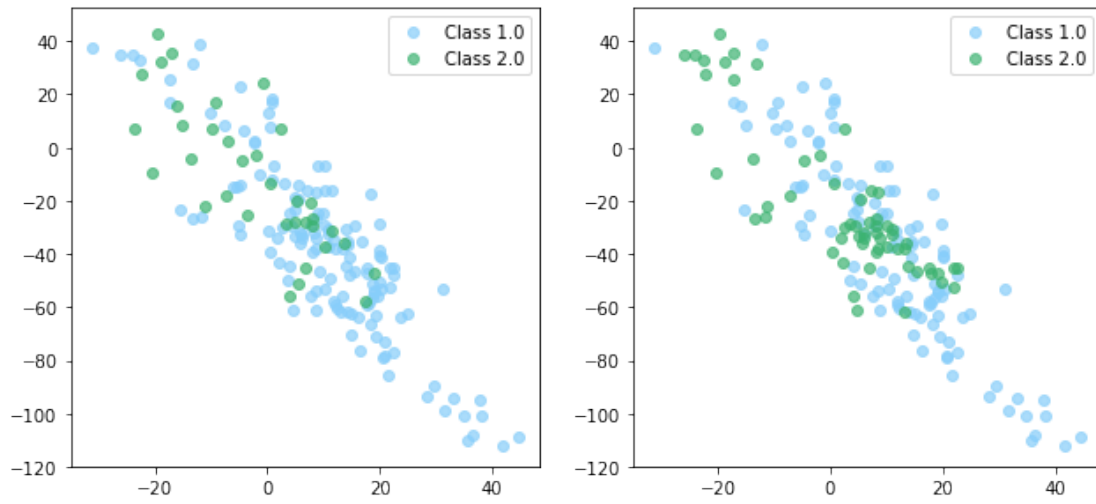
Distribuição dos dados. Step 37



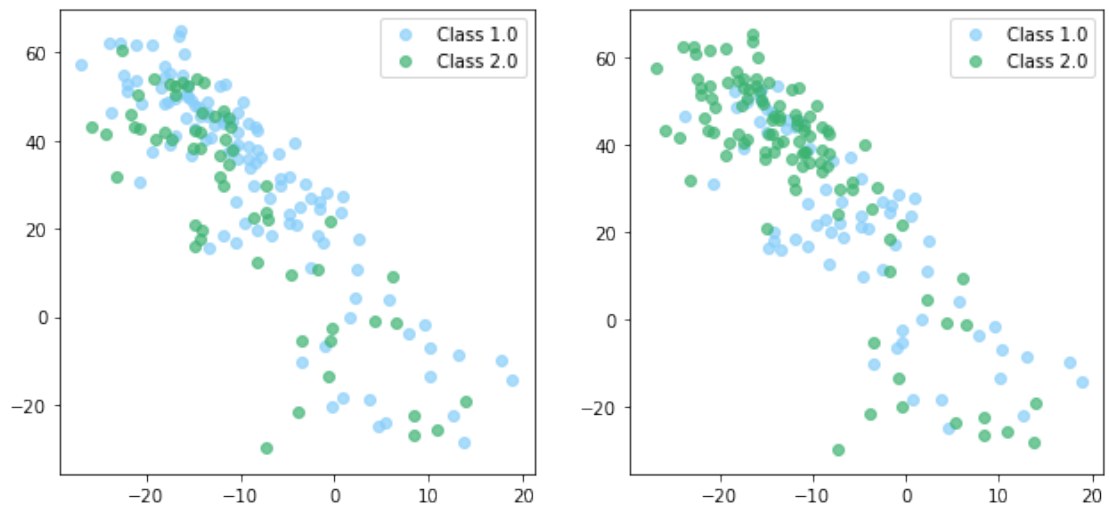
Distribuição dos dados. Step 38



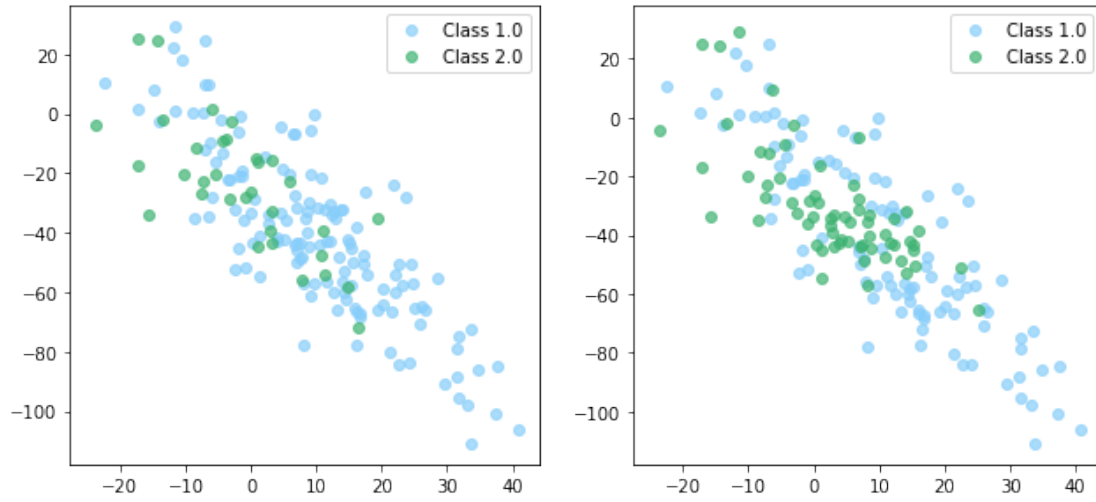
Distribuição dos dados. Step 39



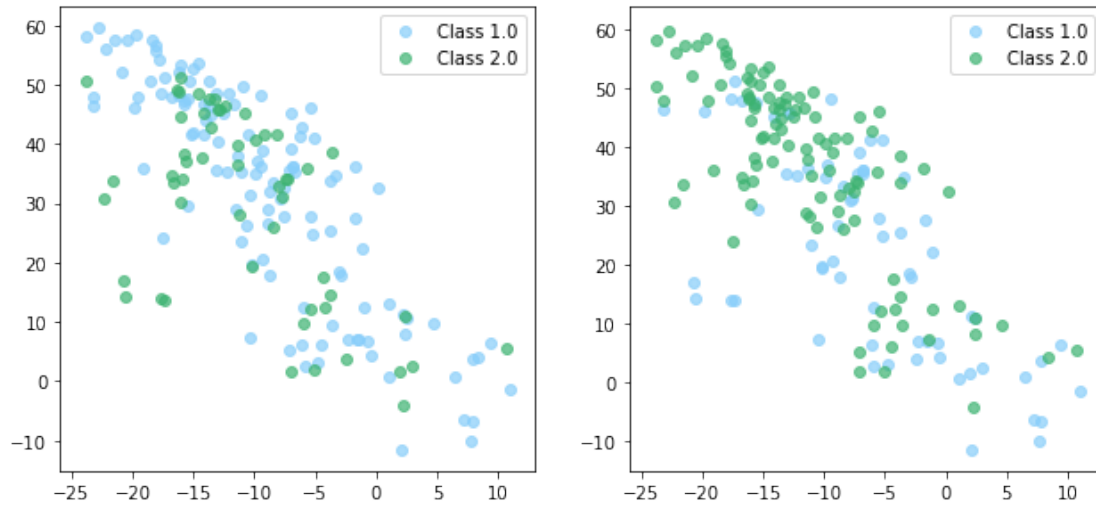
Distribuição dos dados. Step 40



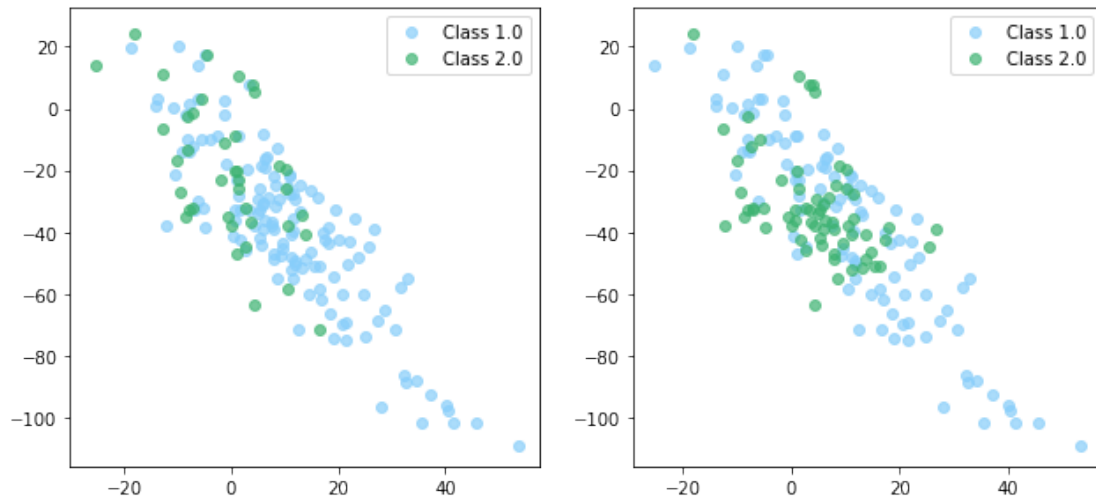
Distribuição dos dados. Step 41



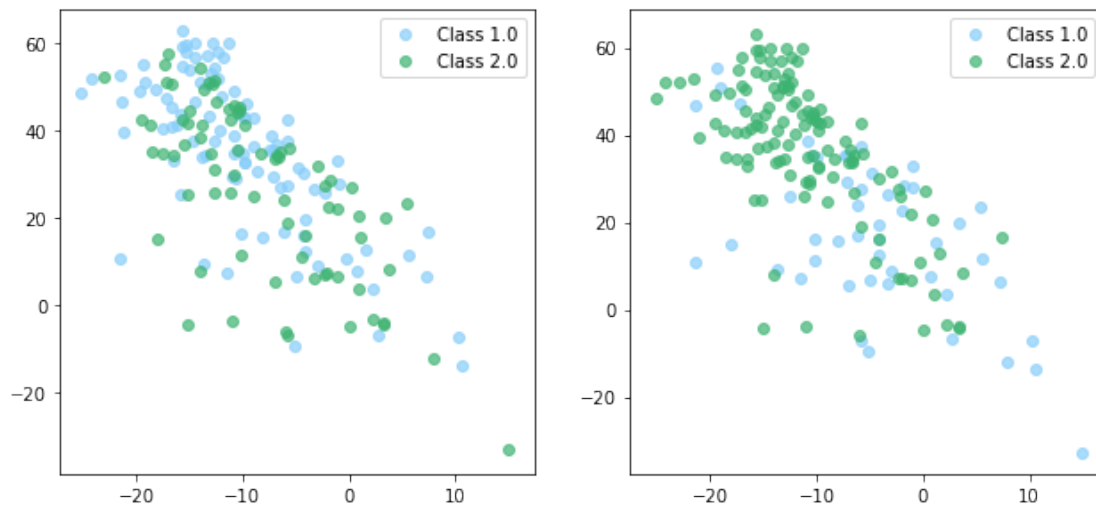
Distribuição dos dados. Step 42



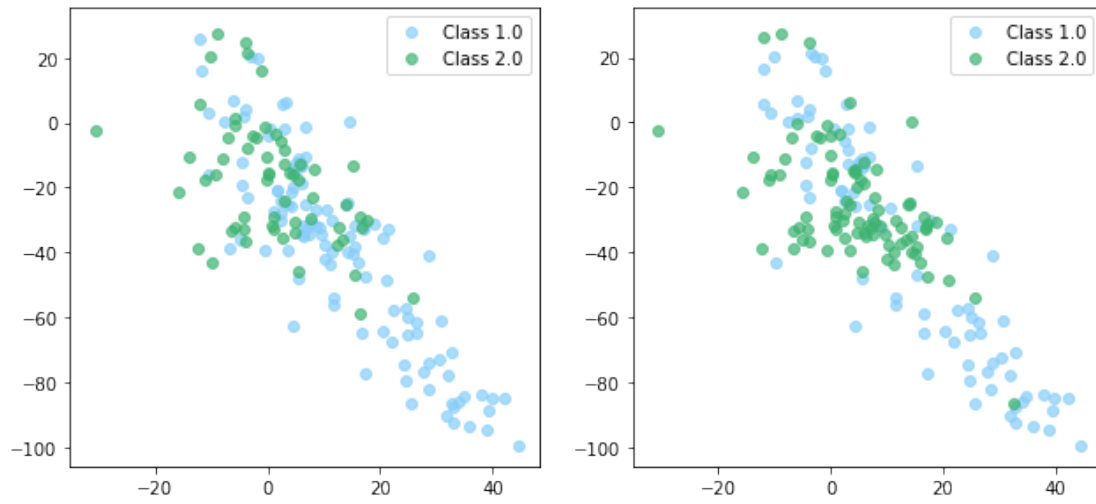
Distribuição dos dados. Step 43



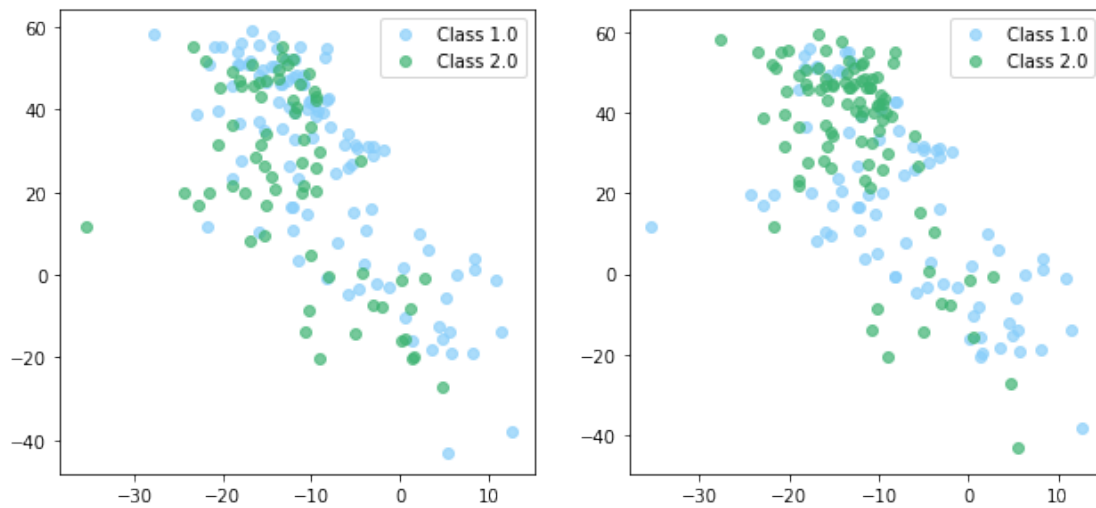
Distribuição dos dados. Step 44



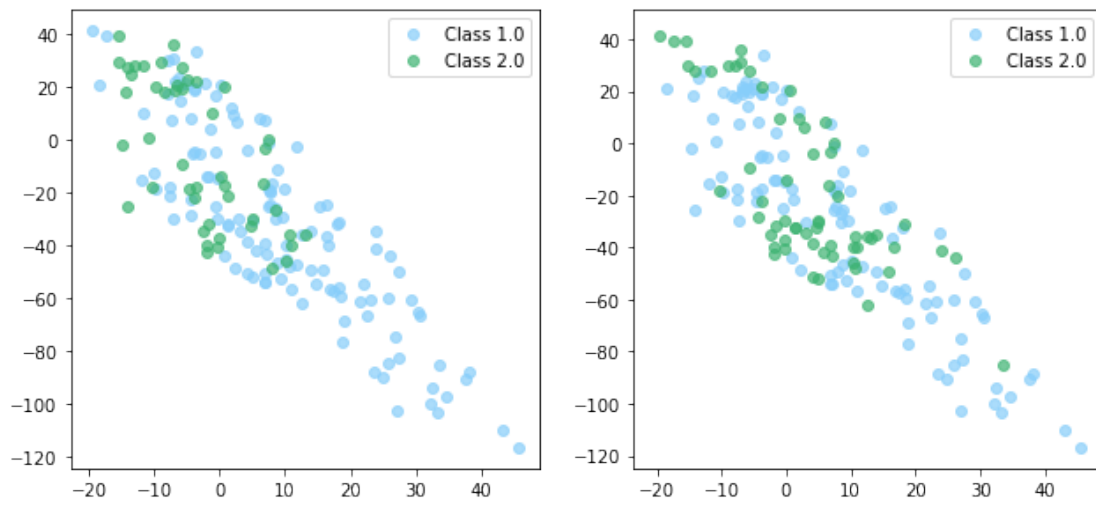
Distribuição dos dados. Step 45



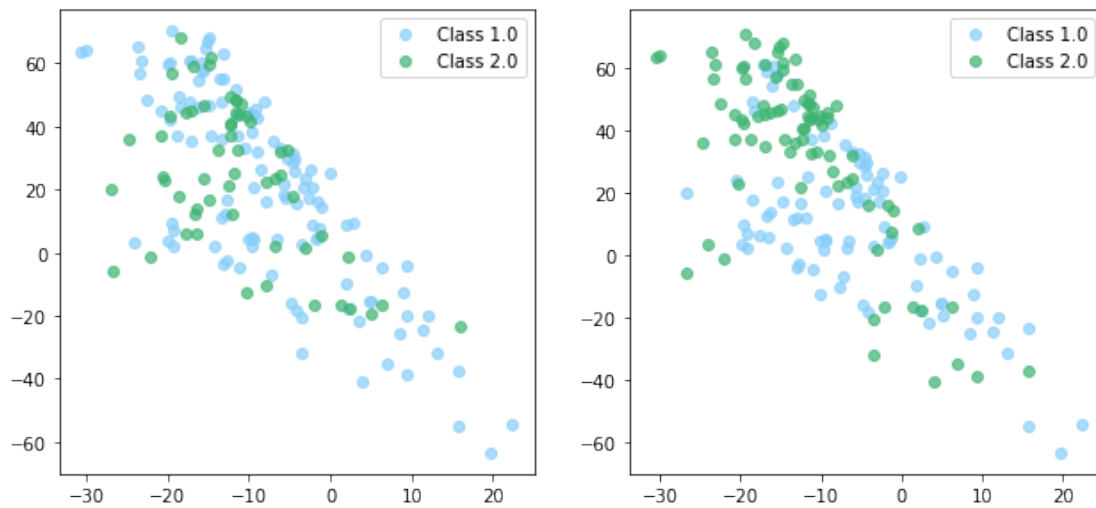
Distribuição dos dados. Step 46



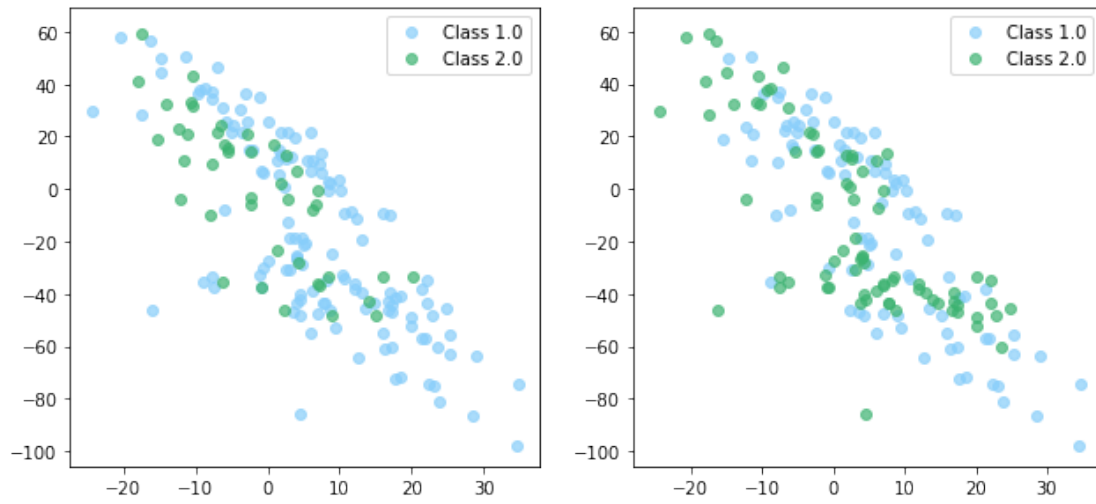
Distribuição dos dados. Step 47



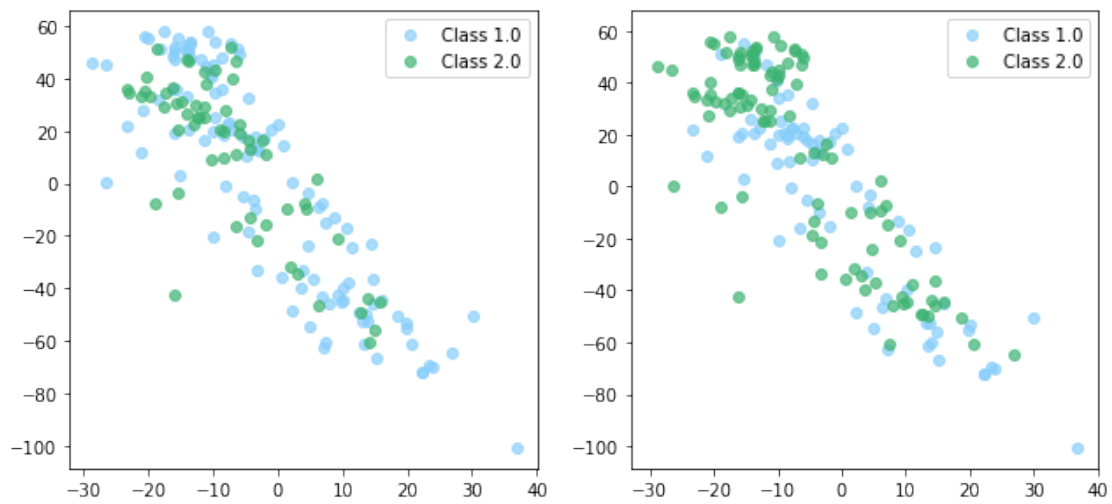
Distribuição dos dados. Step 48



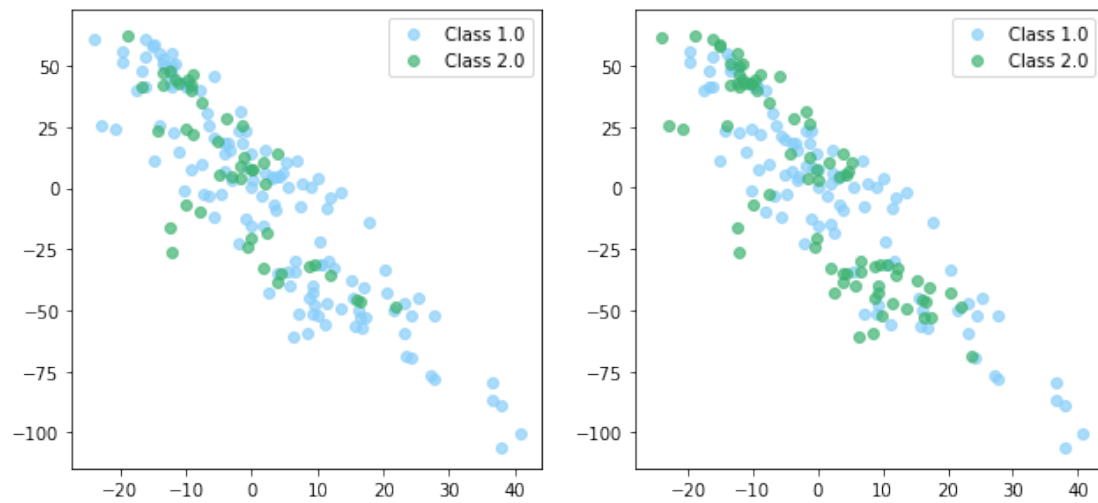
Distribuição dos dados. Step 49



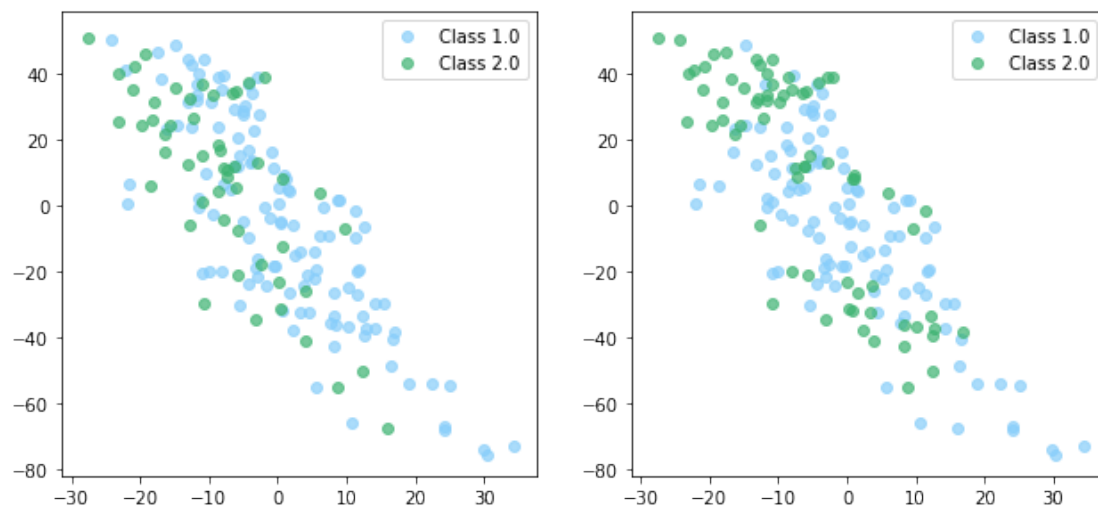
Distribuição dos dados. Step 50



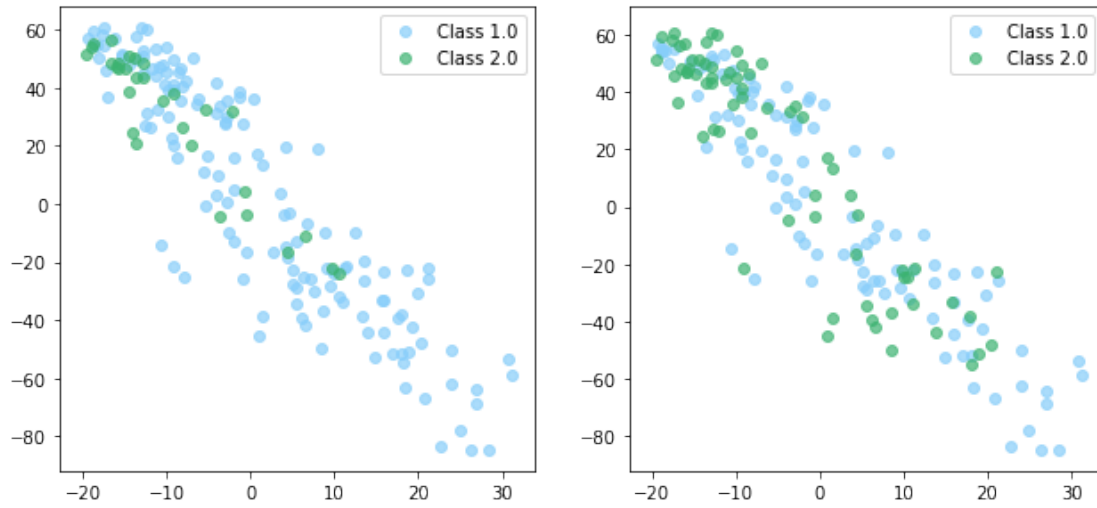
Distribuição dos dados. Step 51



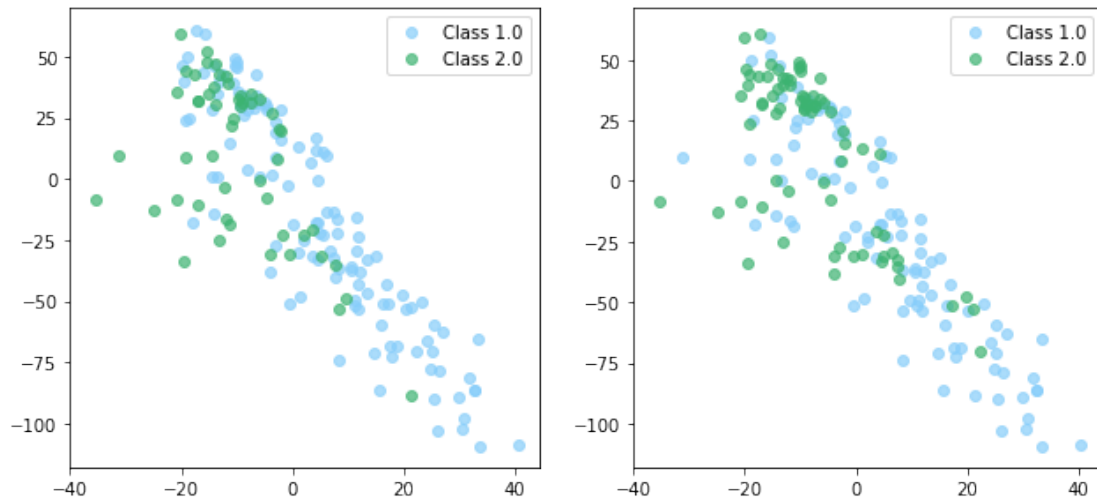
Distribuição dos dados. Step 52



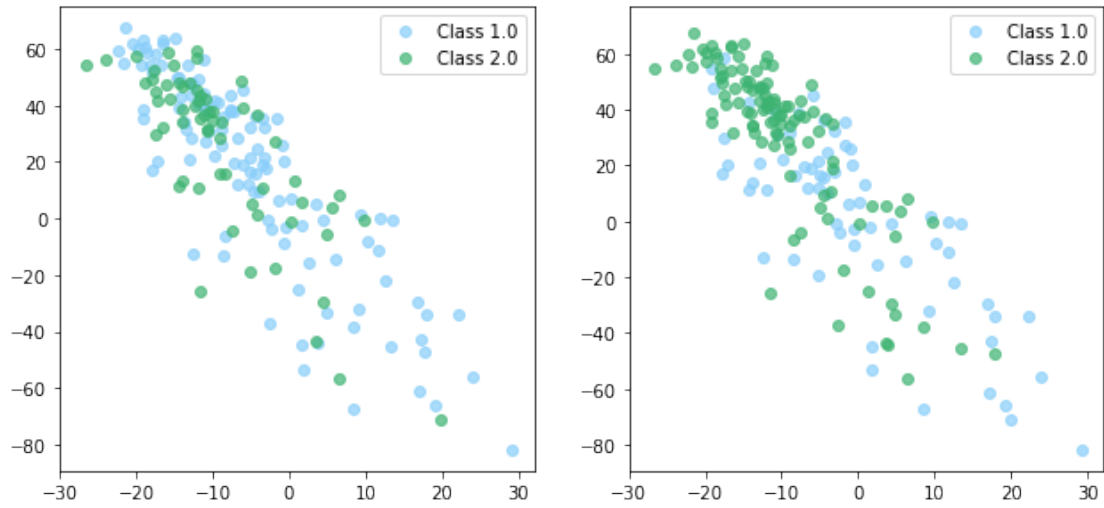
Distribuição dos dados. Step 53



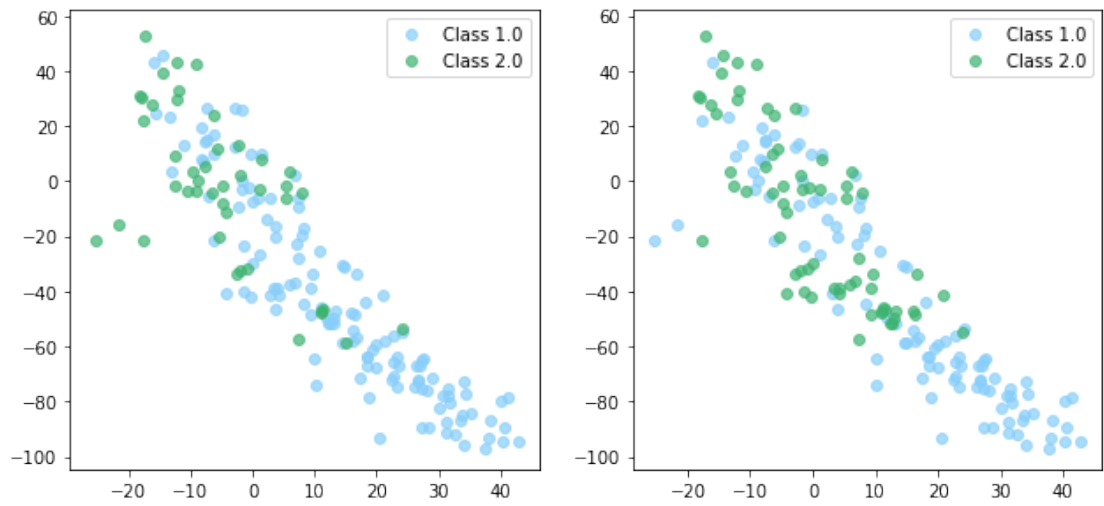
Distribuição dos dados. Step 54



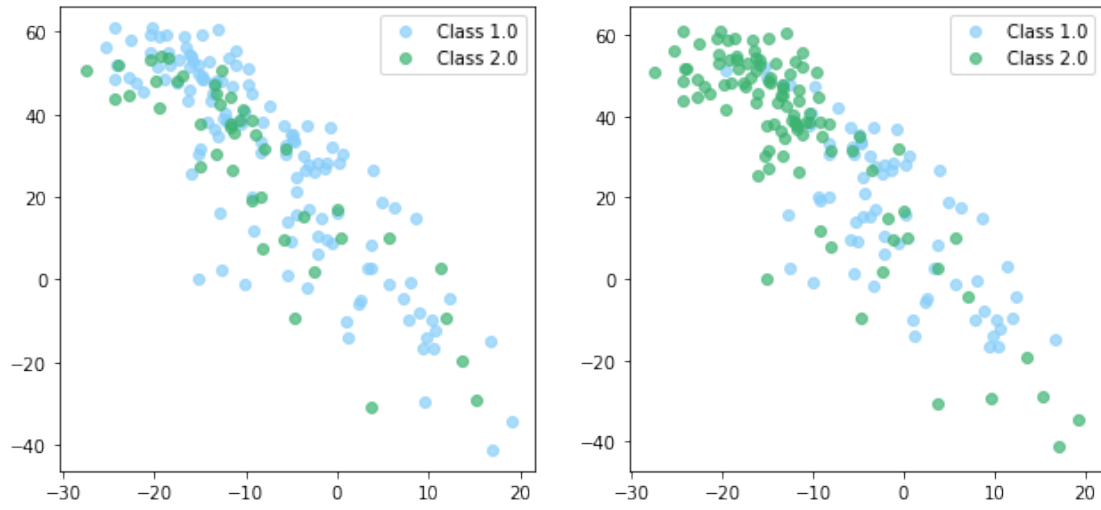
Distribuição dos dados. Step 55



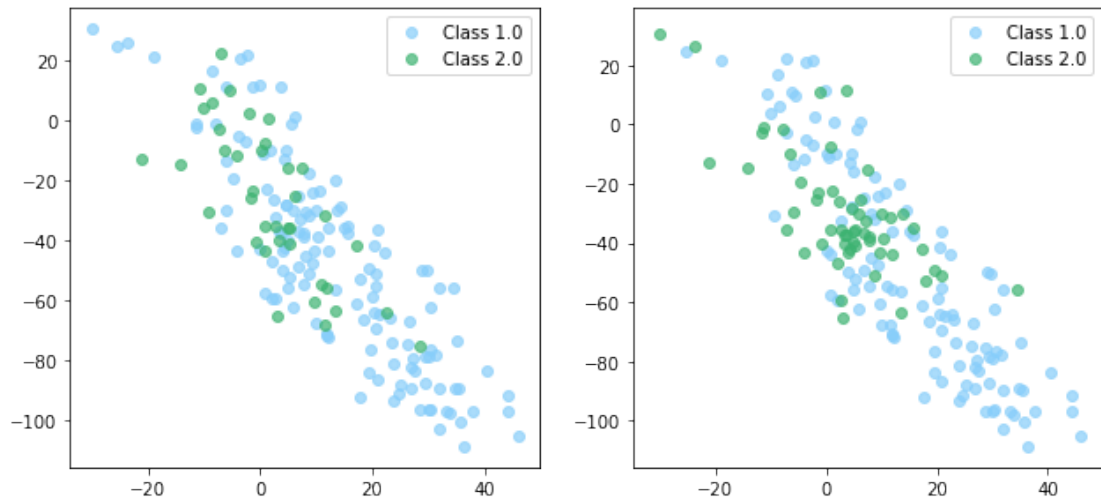
Distribuição dos dados. Step 56



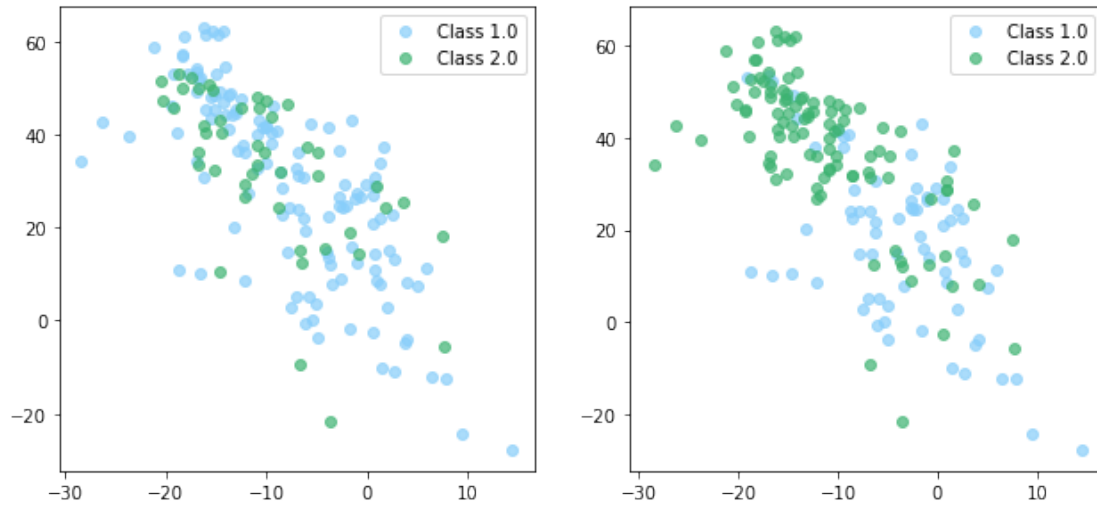
Distribuição dos dados. Step 57



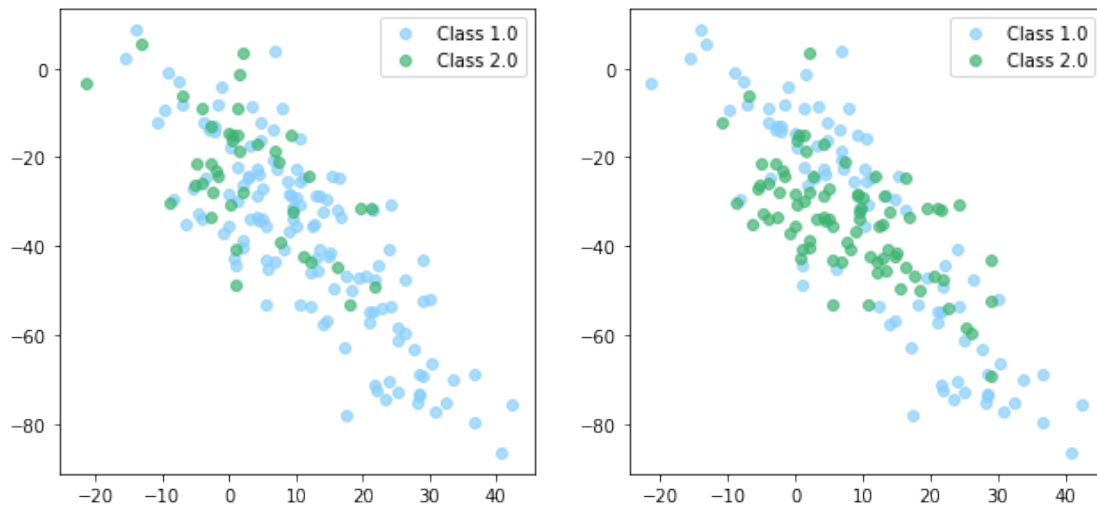
Distribuição dos dados. Step 58



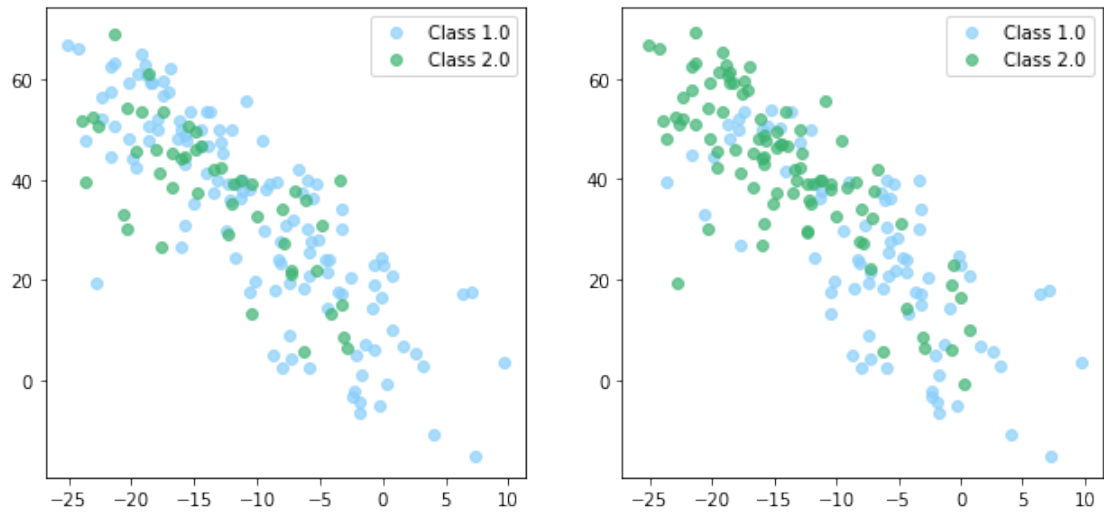
Distribuição dos dados. Step 59



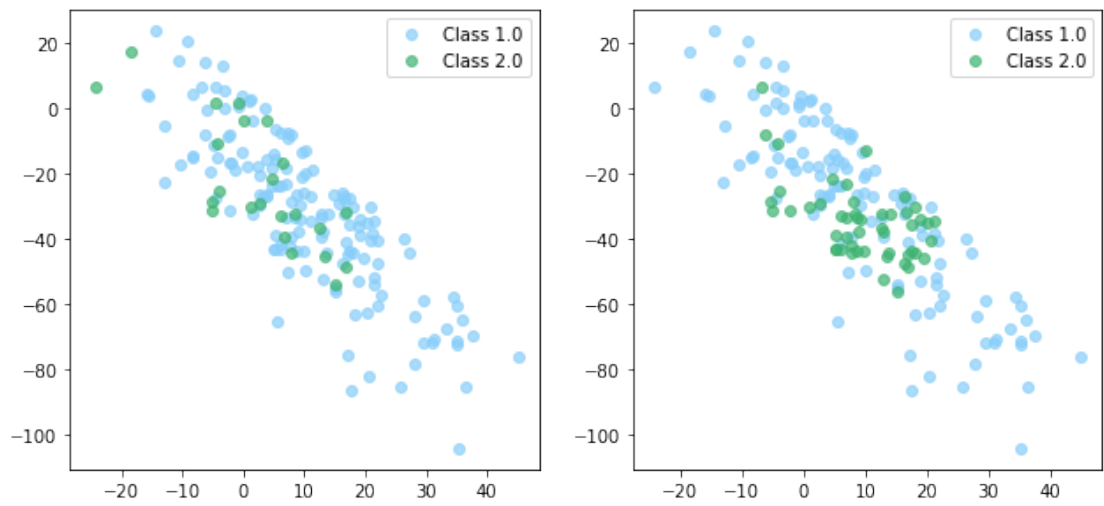
Distribuição dos dados. Step 60



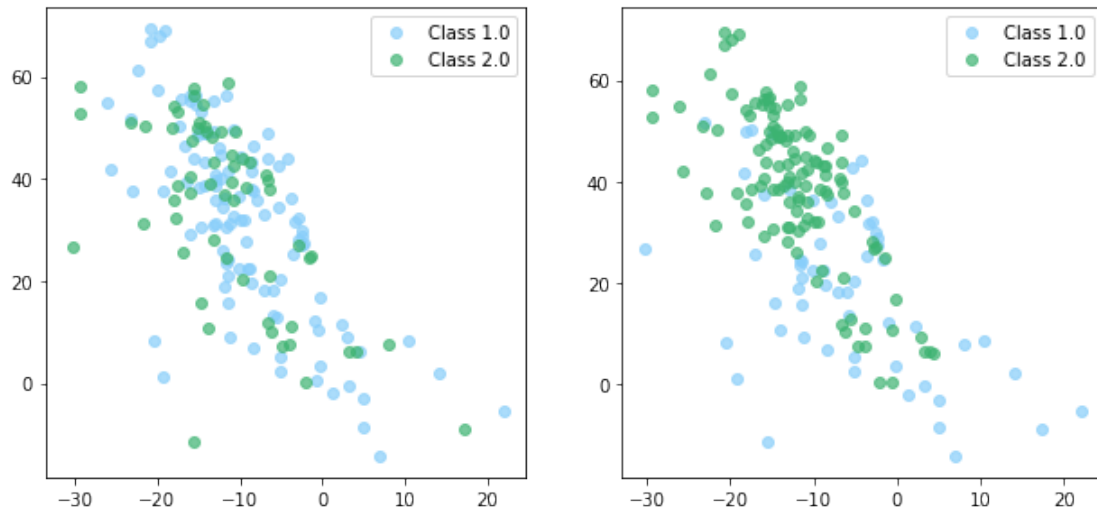
Distribuição dos dados. Step 61



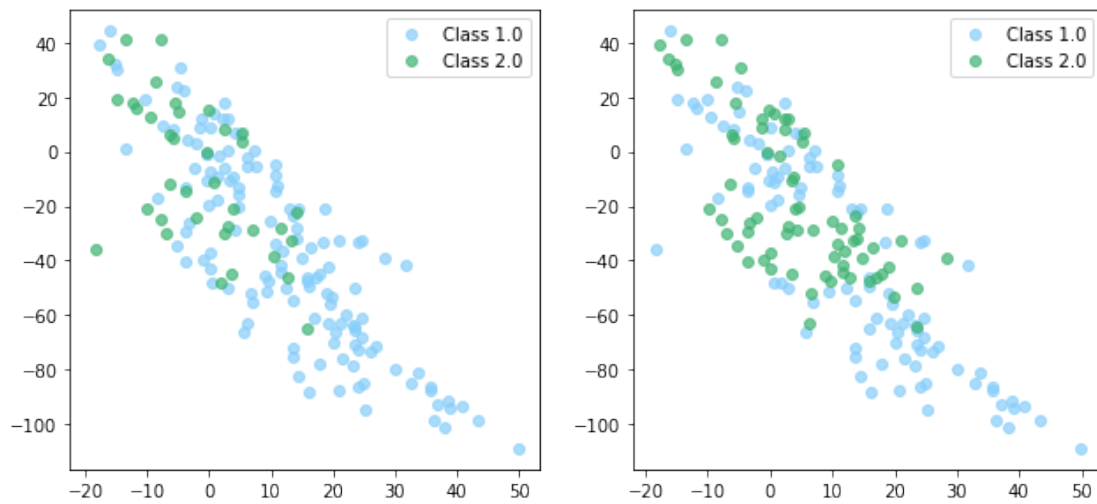
Distribuição dos dados. Step 62



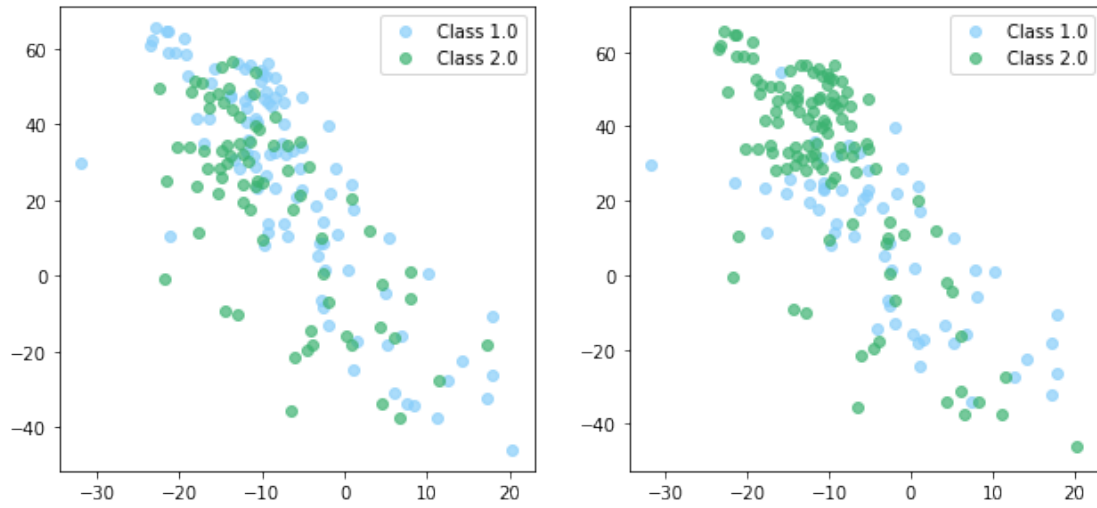
Distribuição dos dados. Step 63



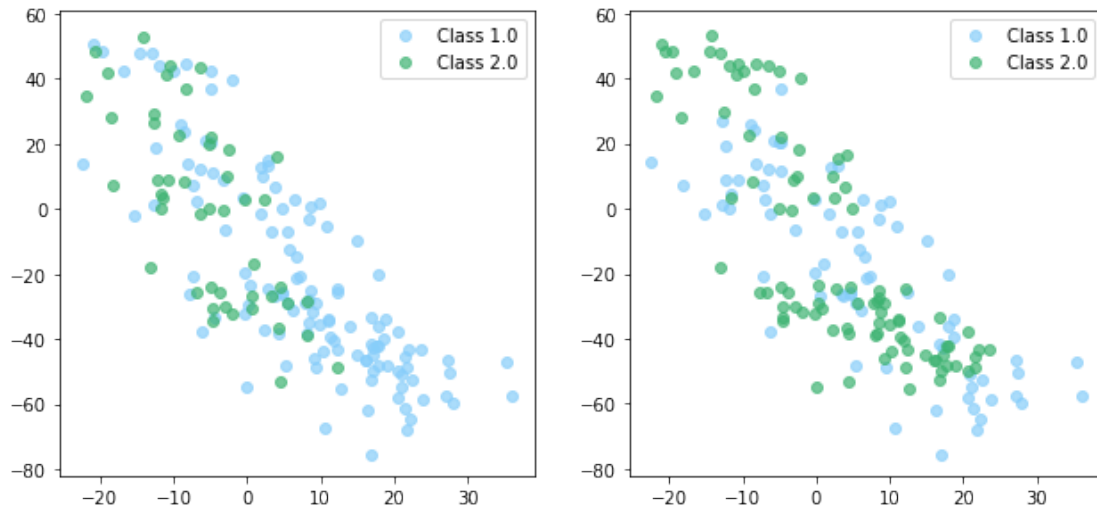
Distribuição dos dados. Step 64



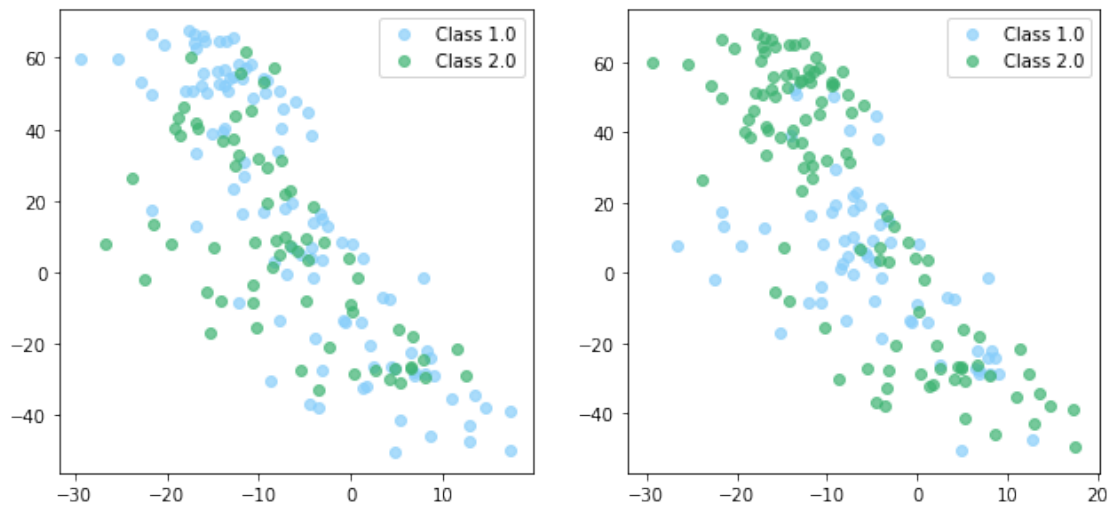
Distribuição dos dados. Step 65



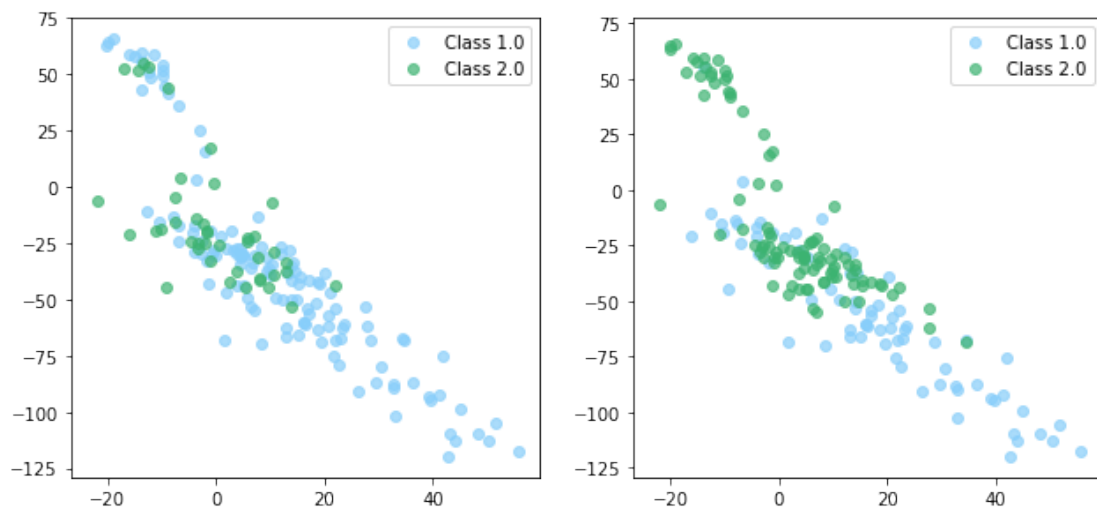
Distribuição dos dados. Step 66



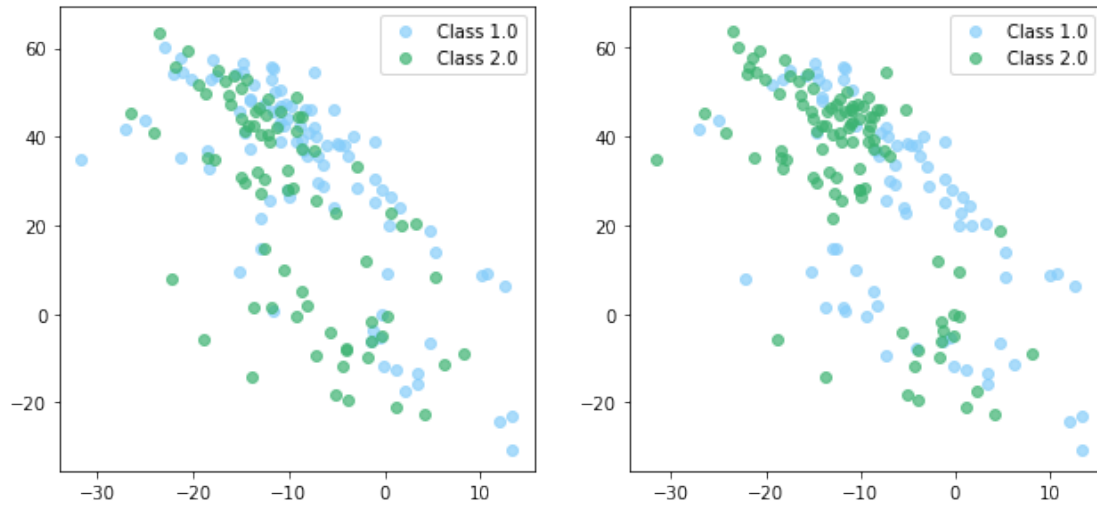
Distribuição dos dados. Step 67



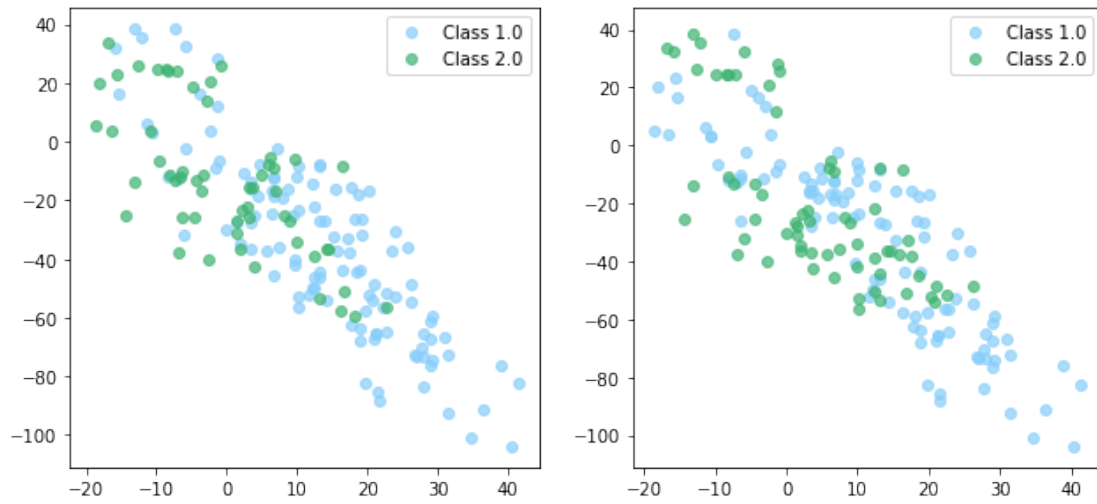
Distribuição dos dados. Step 68



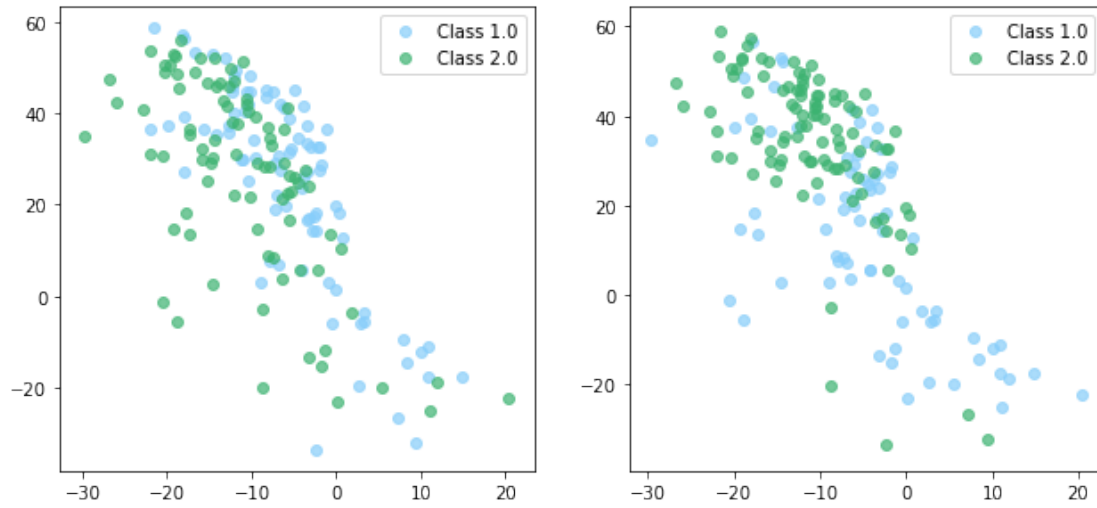
Distribuição dos dados. Step 69



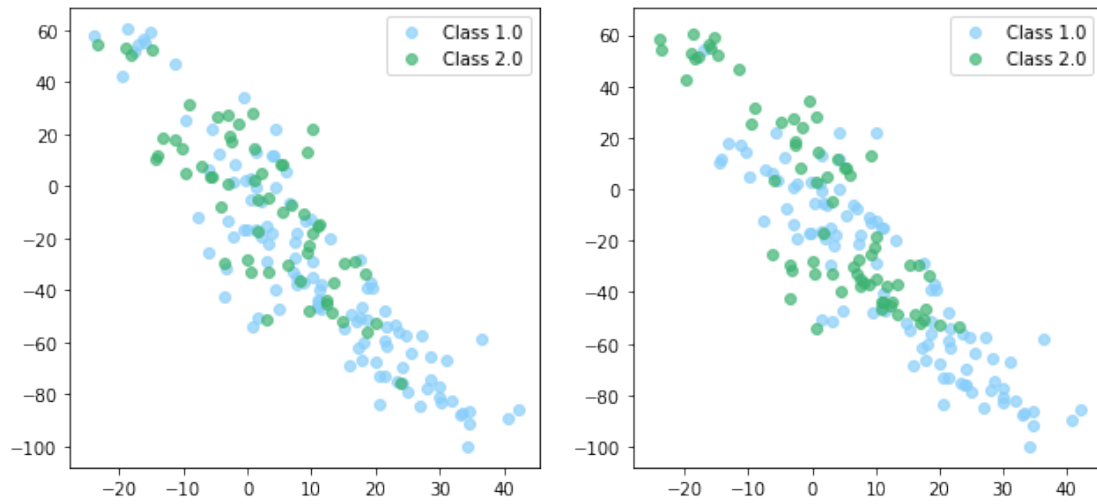
Distribuição dos dados. Step 70



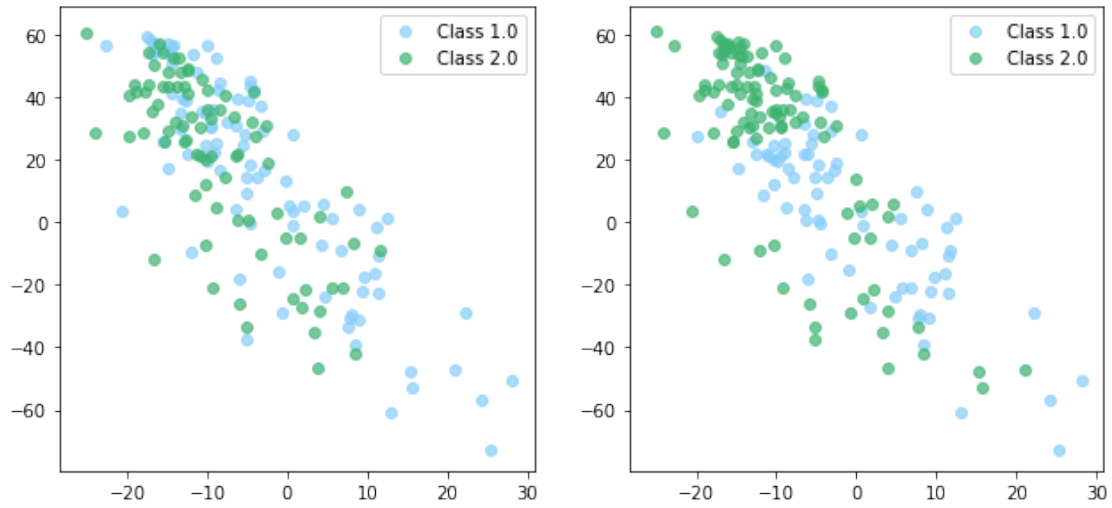
Distribuição dos dados. Step 71



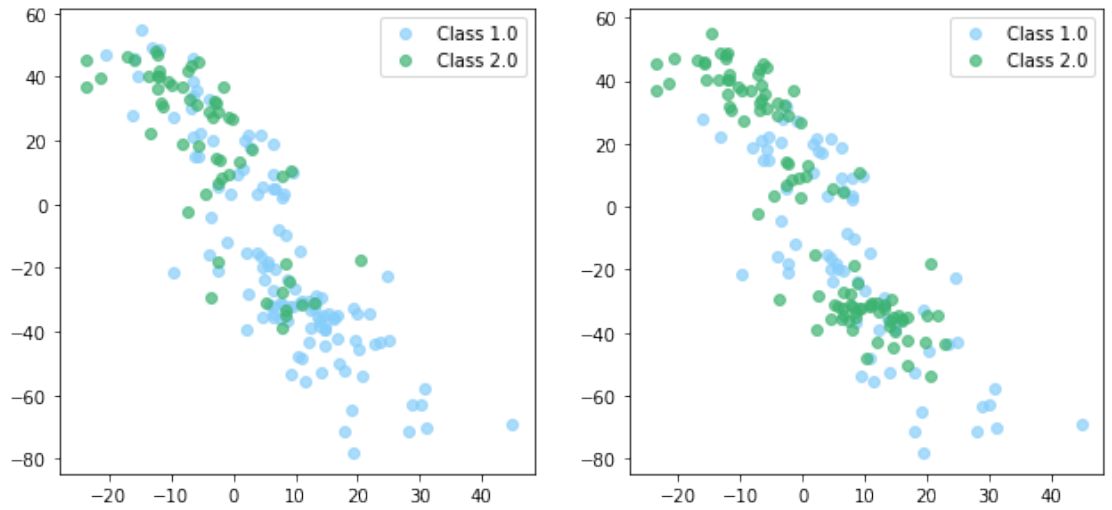
Distribuição dos dados. Step 72



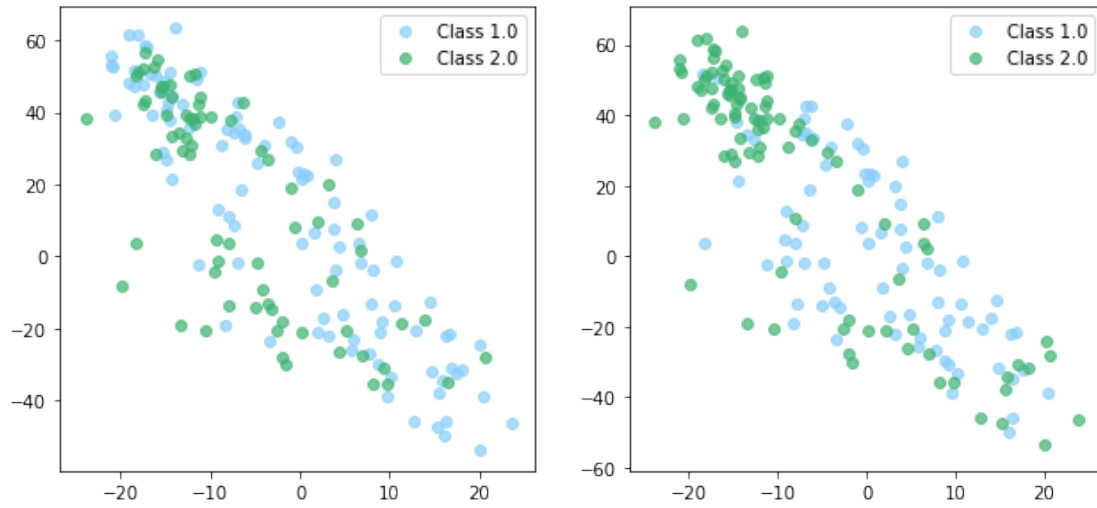
Distribuição dos dados. Step 73



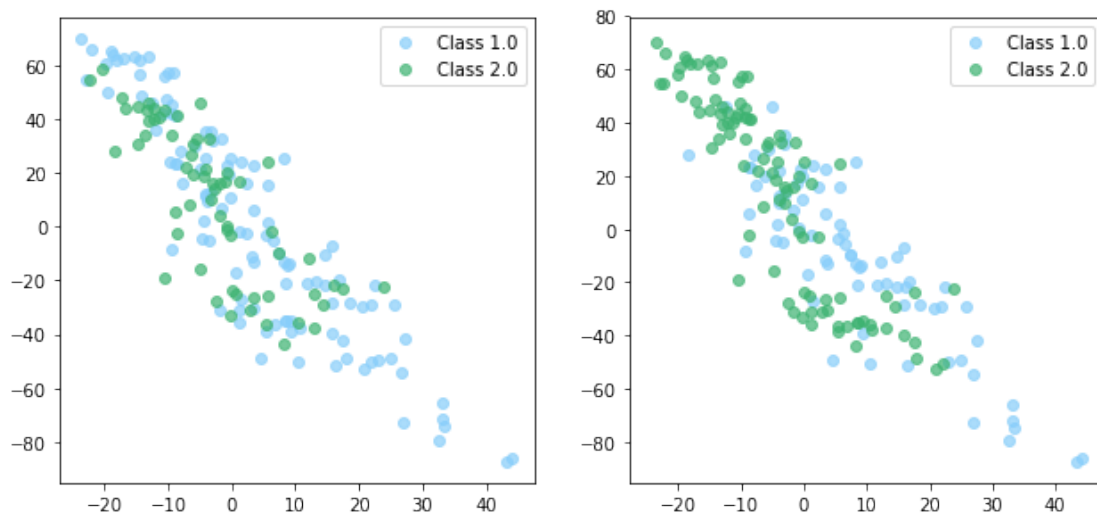
Distribuição dos dados. Step 74



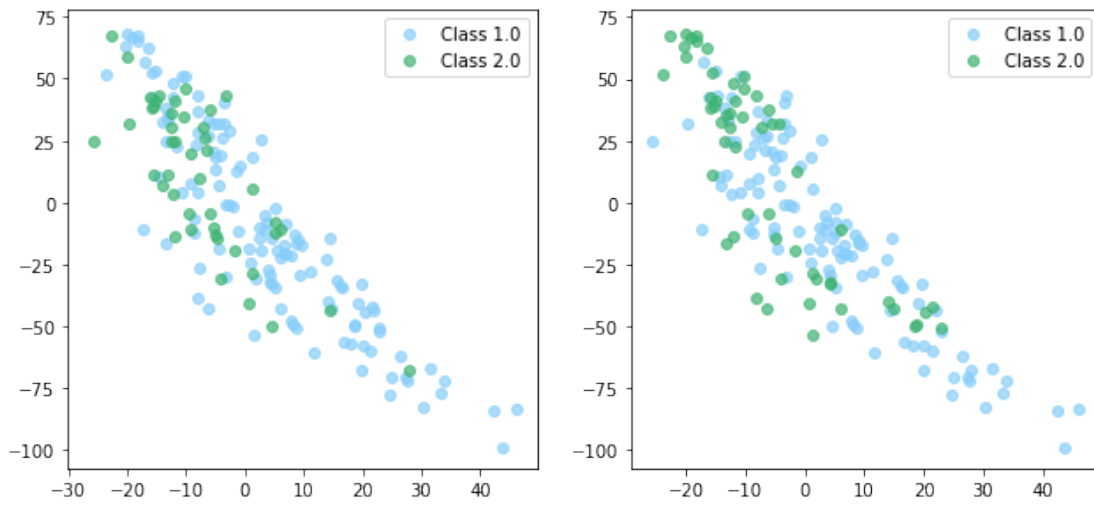
Distribuição dos dados. Step 75



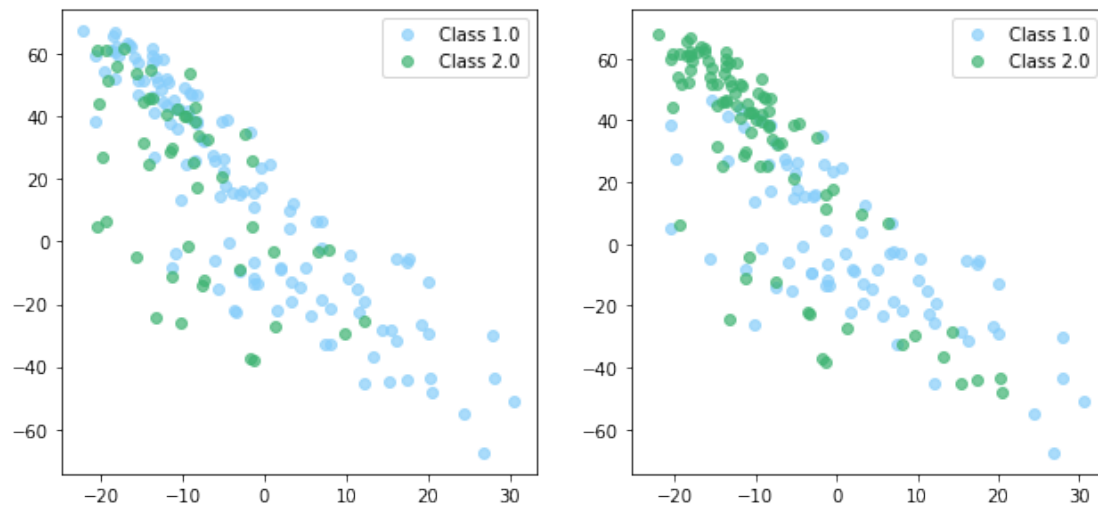
Distribuição dos dados. Step 76



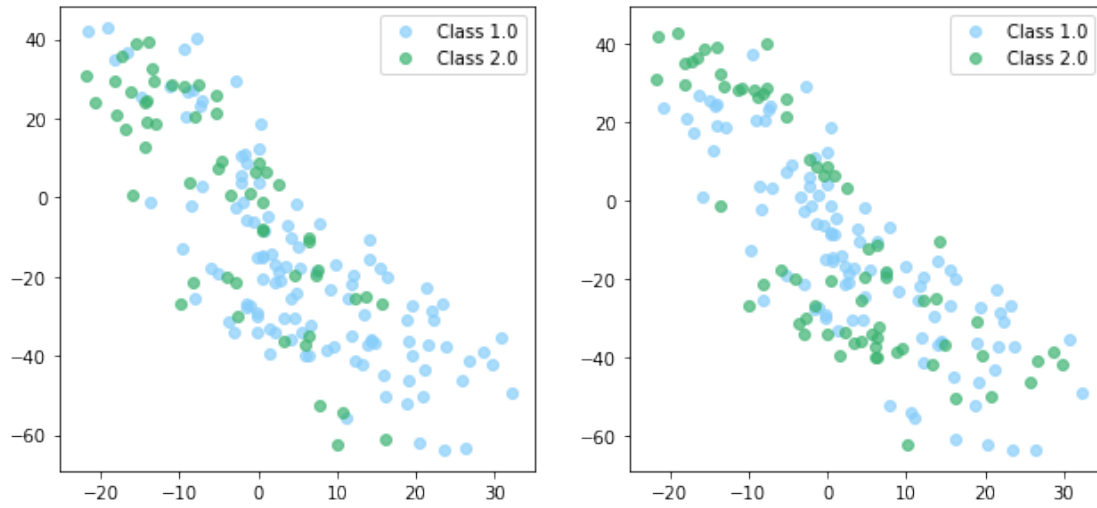
Distribuição dos dados. Step 77



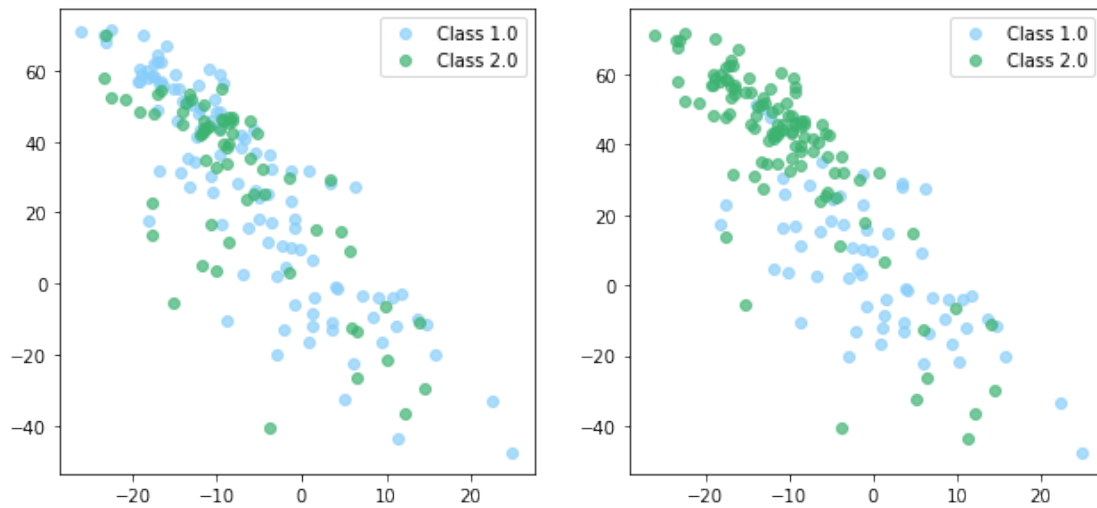
Distribuição dos dados. Step 78



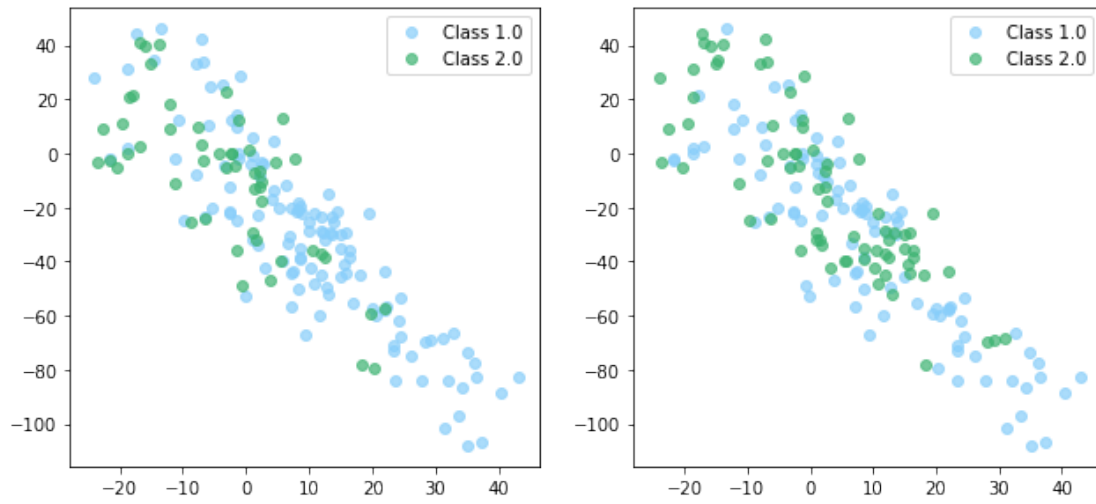
Distribuição dos dados. Step 79



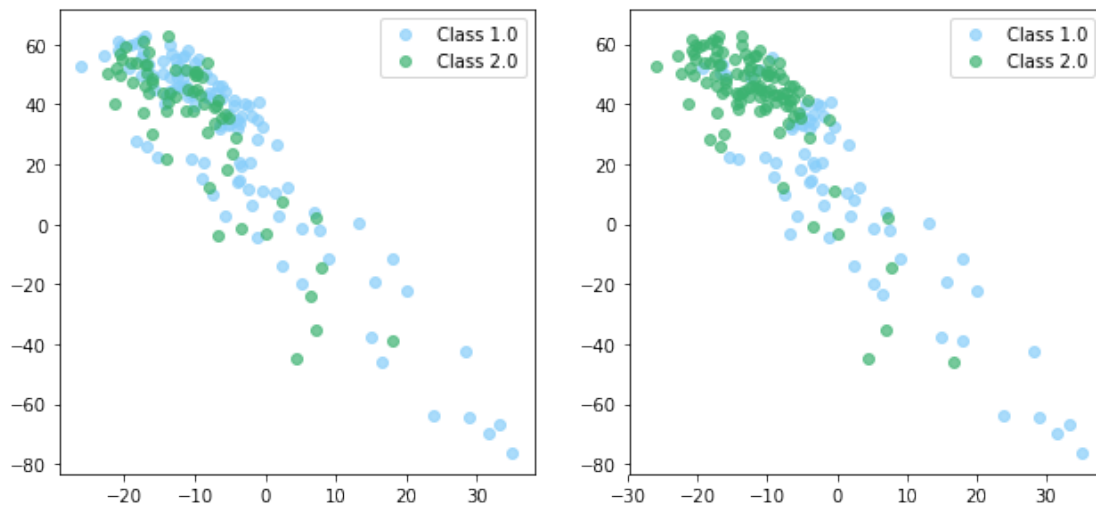
Distribuição dos dados. Step 80



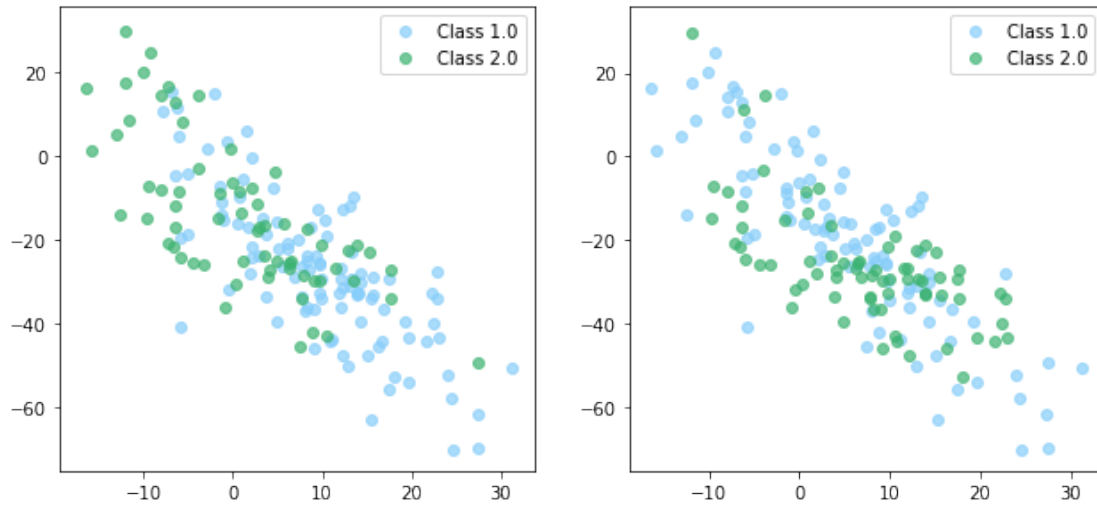
Distribuição dos dados. Step 81



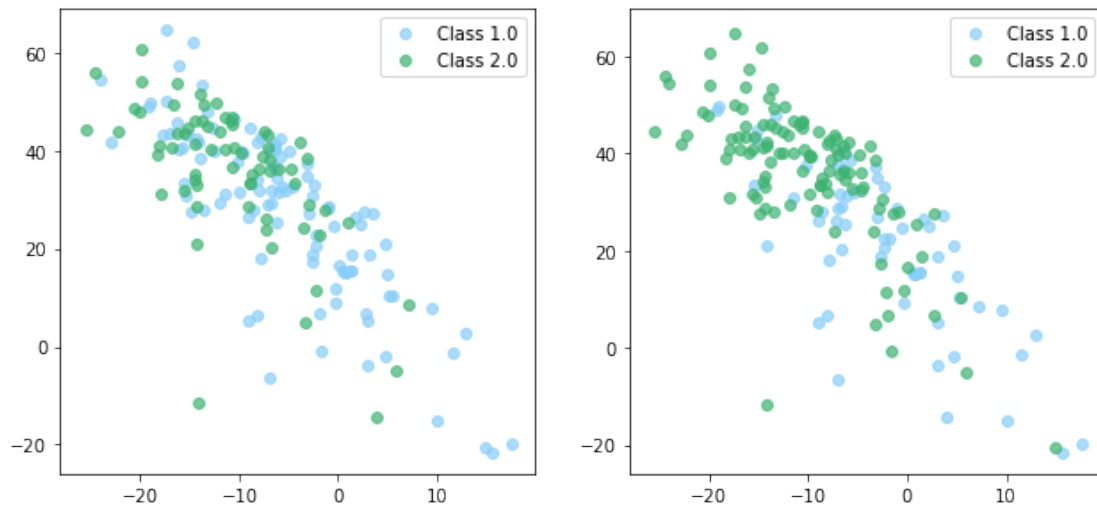
Distribuição dos dados. Step 82



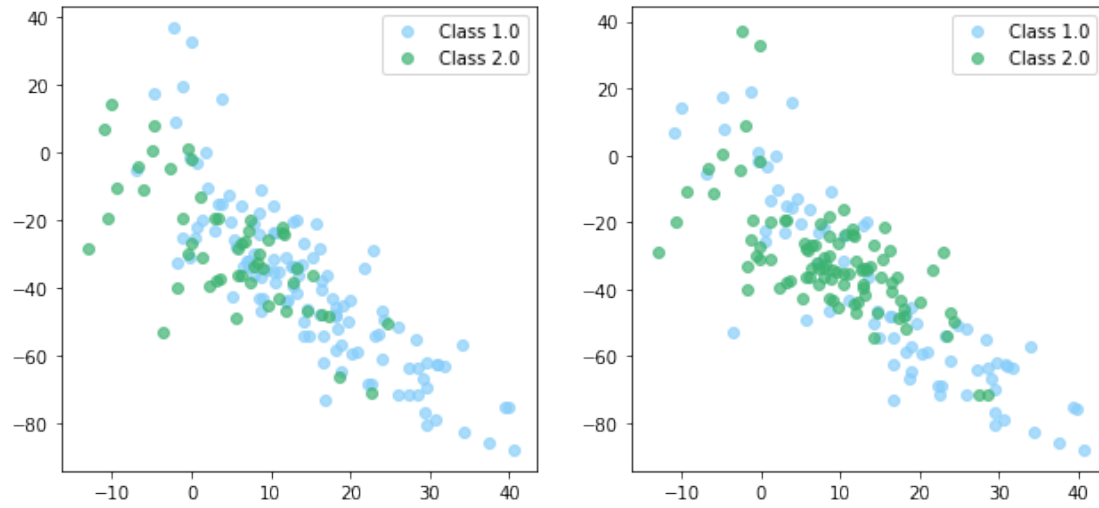
Distribuição dos dados. Step 83



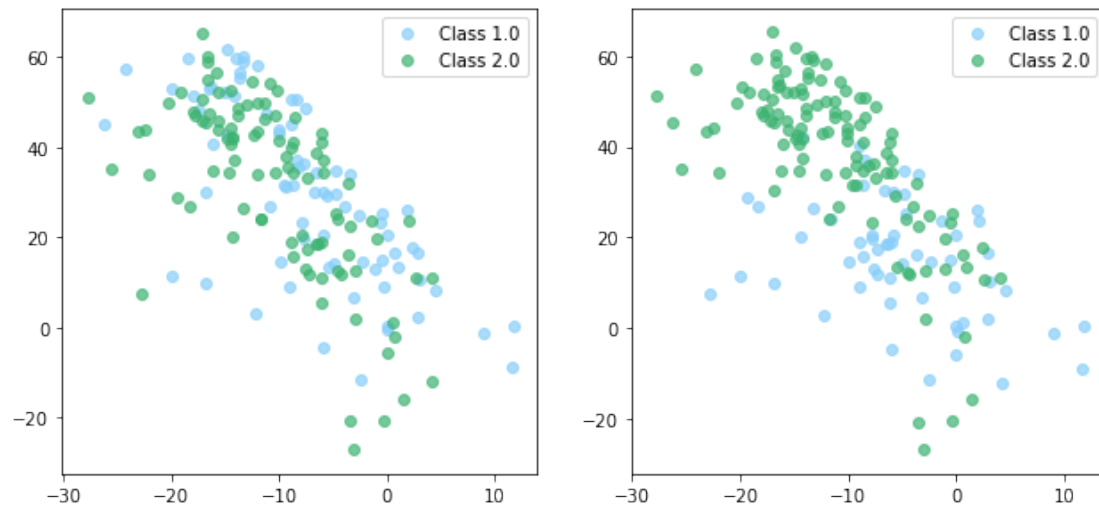
Distribuição dos dados. Step 84



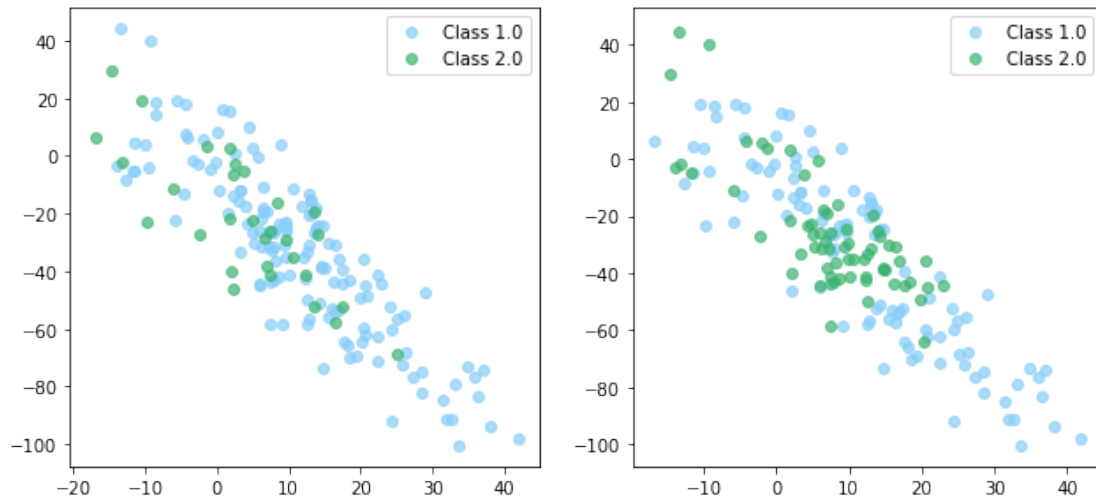
Distribuição dos dados. Step 85



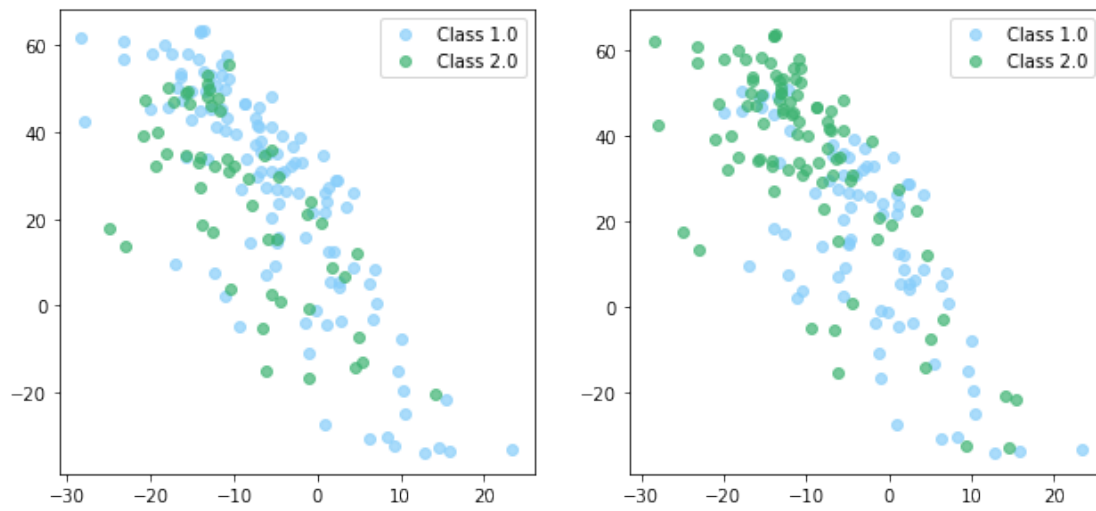
Distribuição dos dados. Step 86



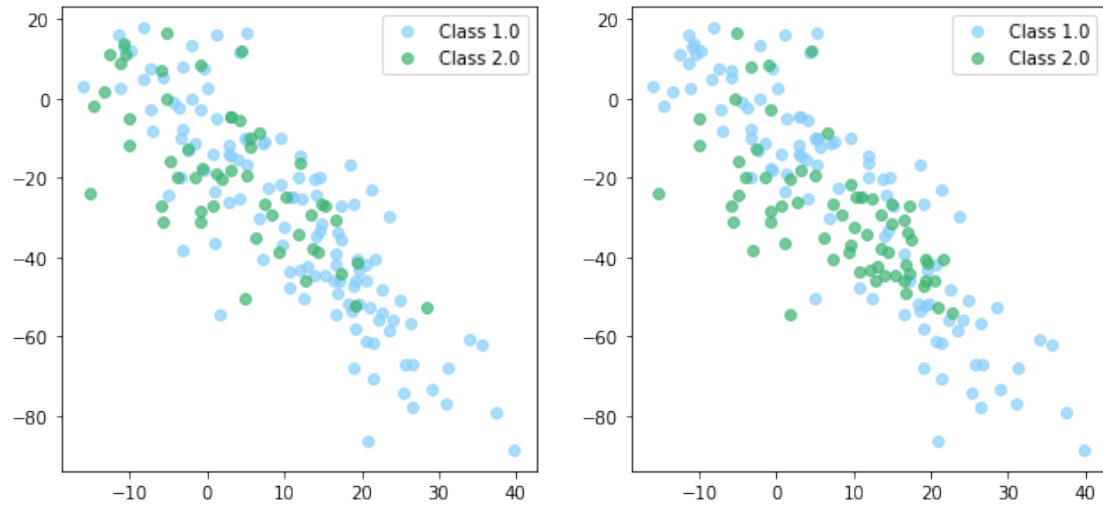
Distribuição dos dados. Step 87



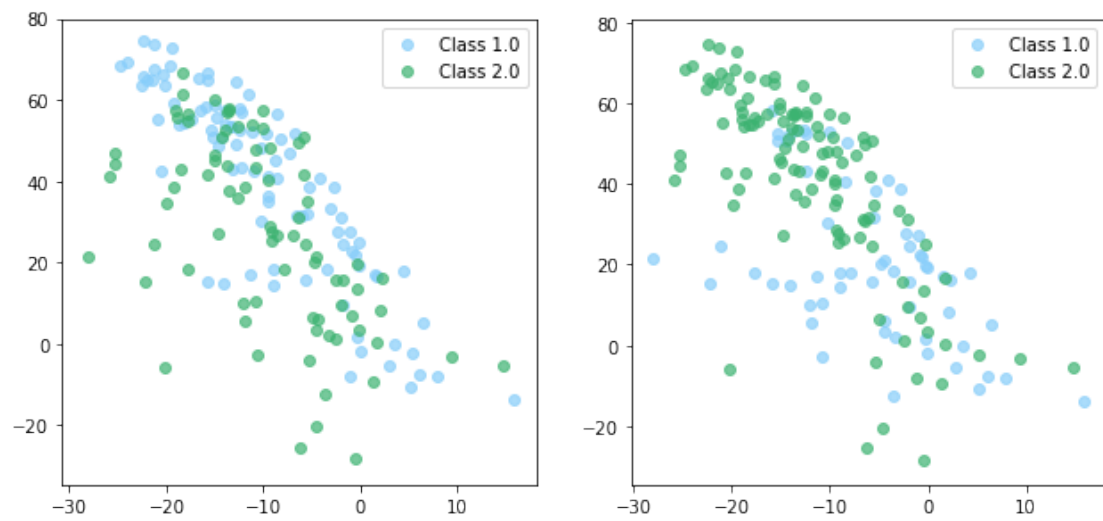
Distribuição dos dados. Step 88



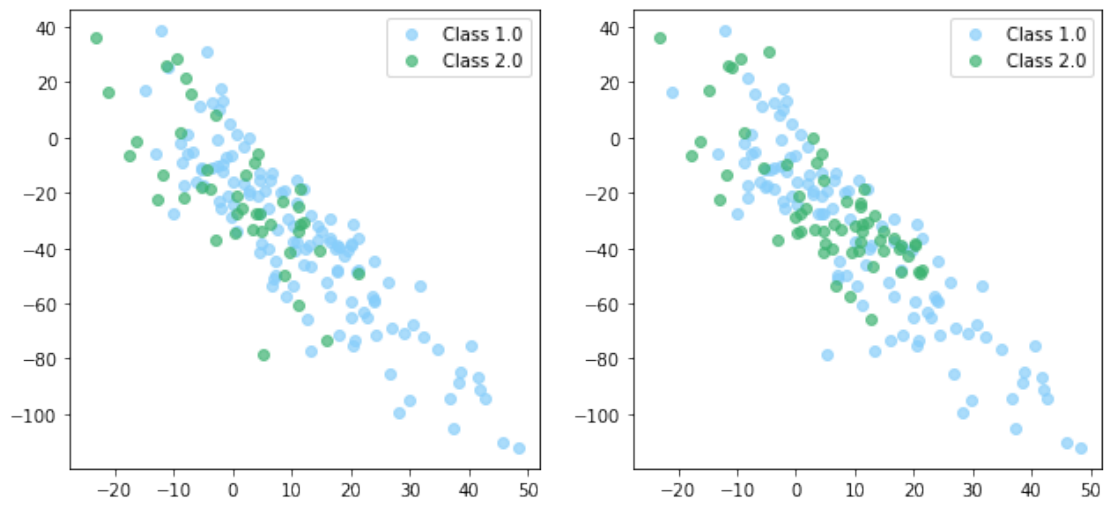
Distribuição dos dados. Step 89



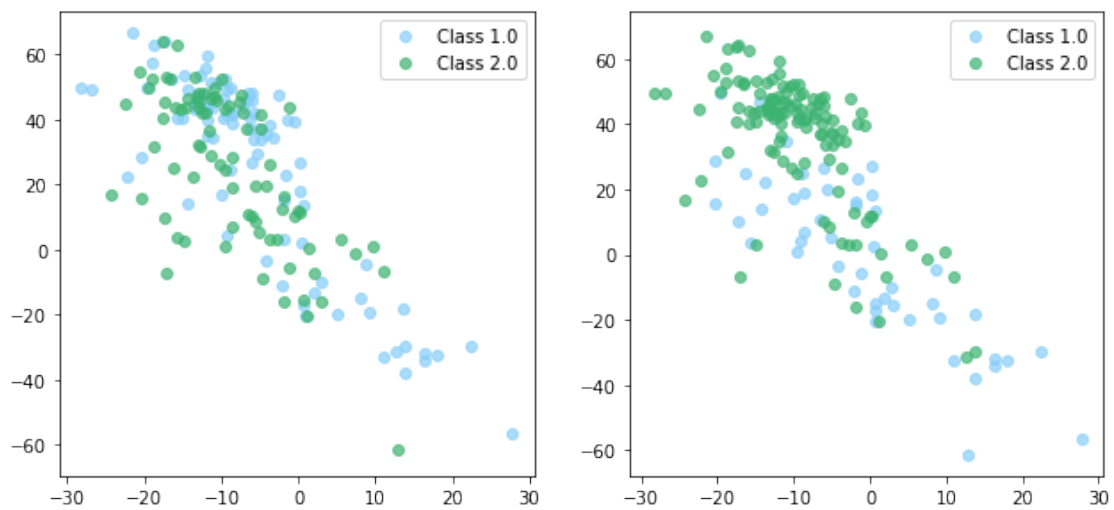
Distribuição dos dados. Step 90



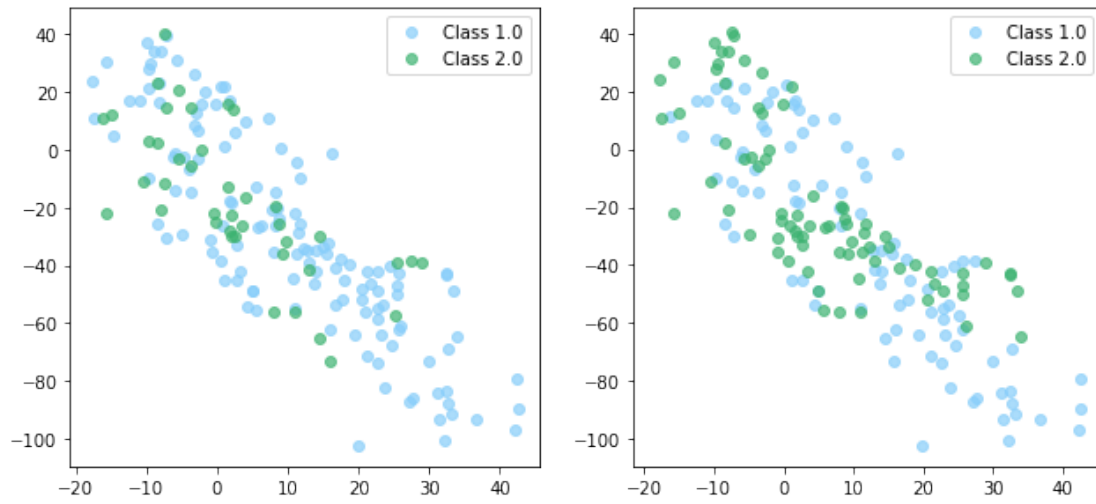
Distribuição dos dados. Step 91



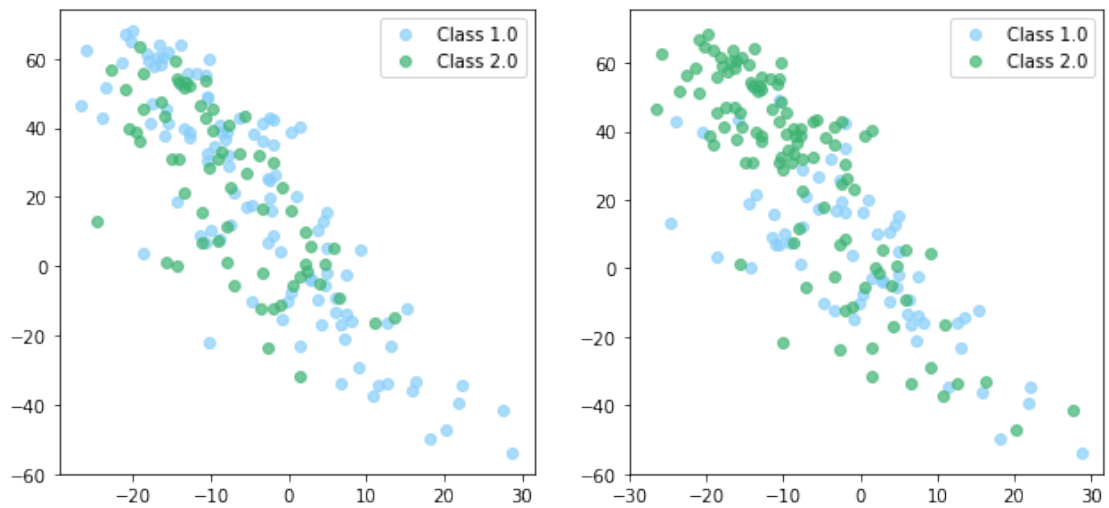
Distribuição dos dados. Step 92



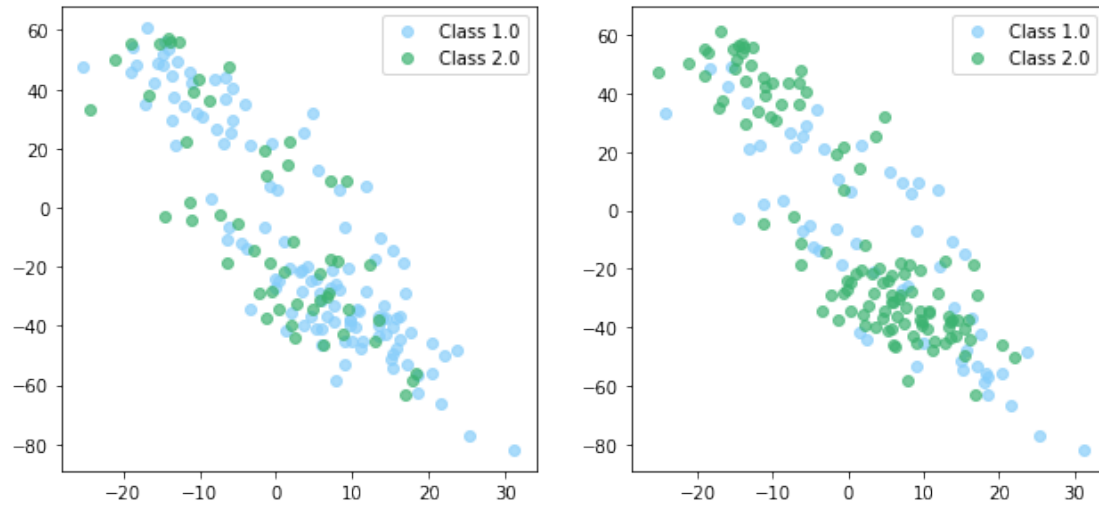
Distribuição dos dados. Step 93



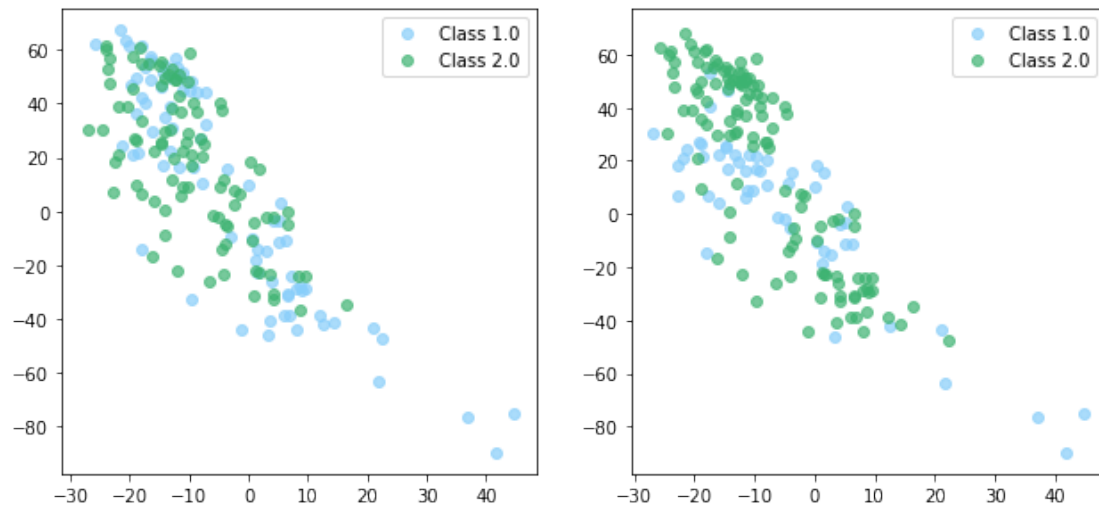
Distribuição dos dados. Step 94



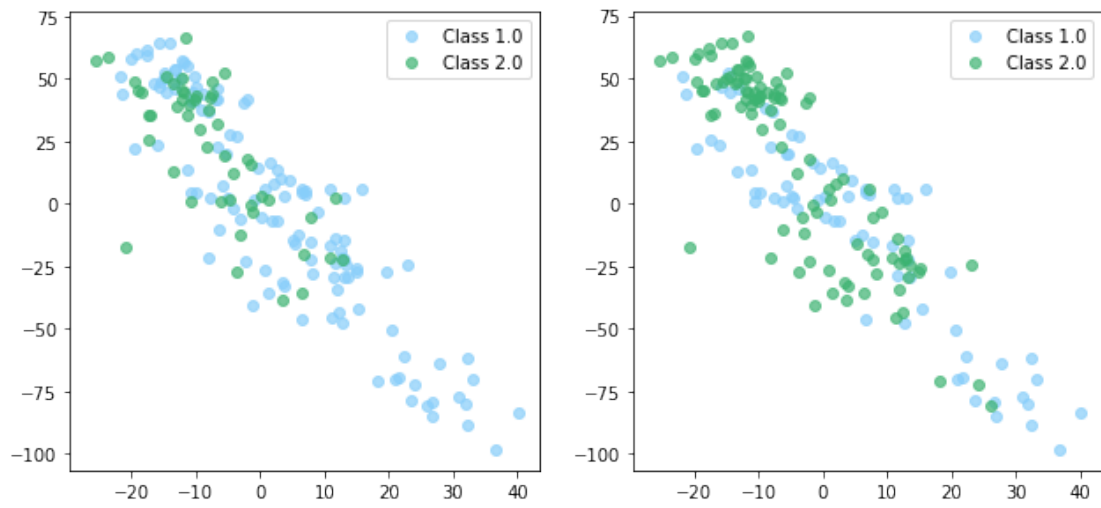
Distribuição dos dados. Step 95



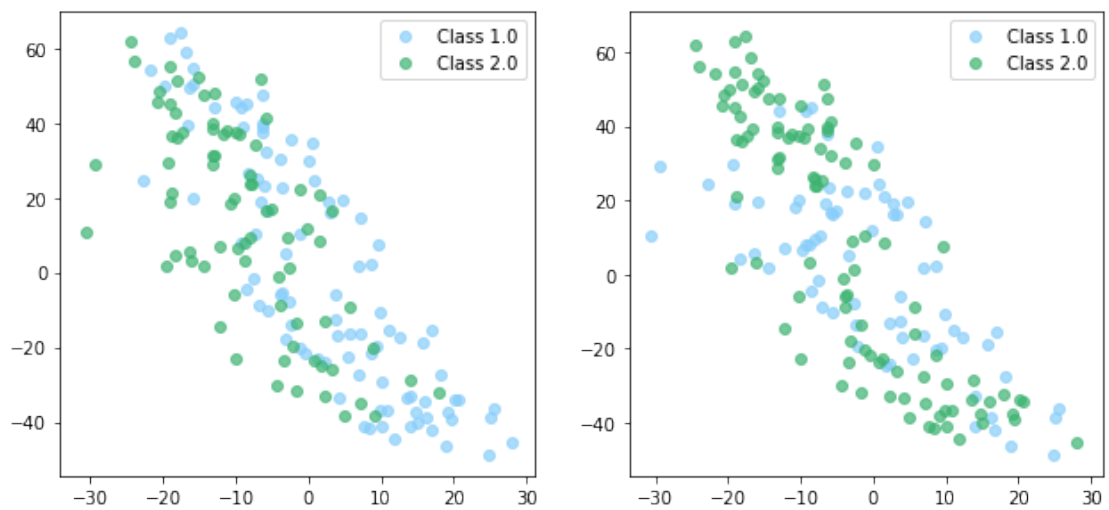
Distribuição dos dados. Step 96



Distribuição dos dados. Step 97



Distribuição dos dados. Step 98



Distribuição dos dados. Step 99

