

# 2CDT

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 = 10
```

```
In [3]: base = '/home/localuser/Documentos/procopio/tcc/datasets/2CDT.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, '2CDT_Handshake')
        plots.plotF1(f1_per, 100, '2CDT_Handshake')

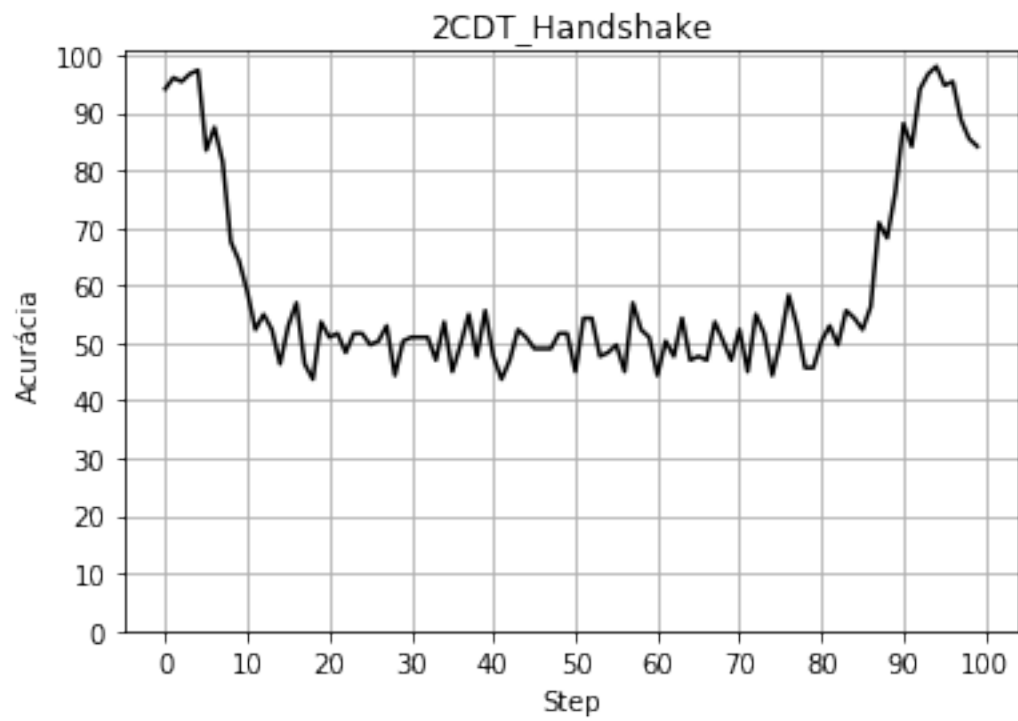
        print('Tempo de Execução: ', tempoS)
        print('memory peak: ', memS)
        print('Acc: ', scoreS)
        print('Macro-F1: ', f1S)
        print('MCC: ', mccS)
        print('Desvio Padrão: ', stdS)
        print('Numero de atualizações: ', updtS)
        plots.plotAcc(acc_percentScargc, 100, '2CDT_SCARGC')
        plots.plotF1(f1_S, 100, '2CDT_SCARGC')

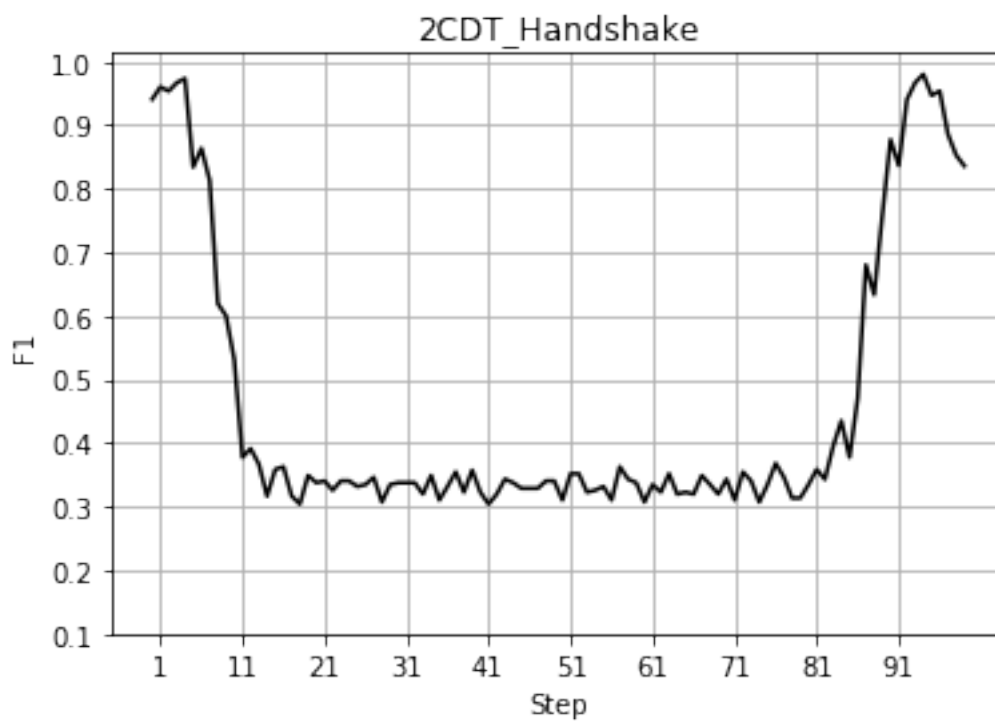
        listTime = [tempo, tempoS]
        listAcc = [score, scoreS]
        listMethod = ['Handshake', 'SCARGC']
        matrixAcc = [acc_percent[0], acc_percentScargc[0]]
        matrixF1 = [f1_per[0], f1_S[0]]

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

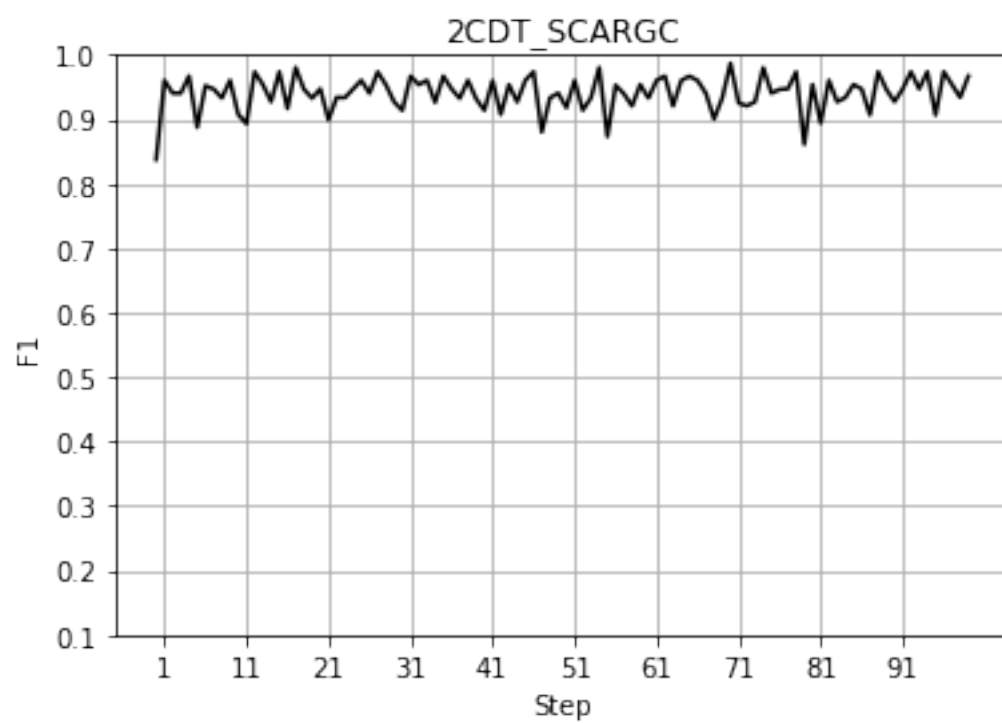
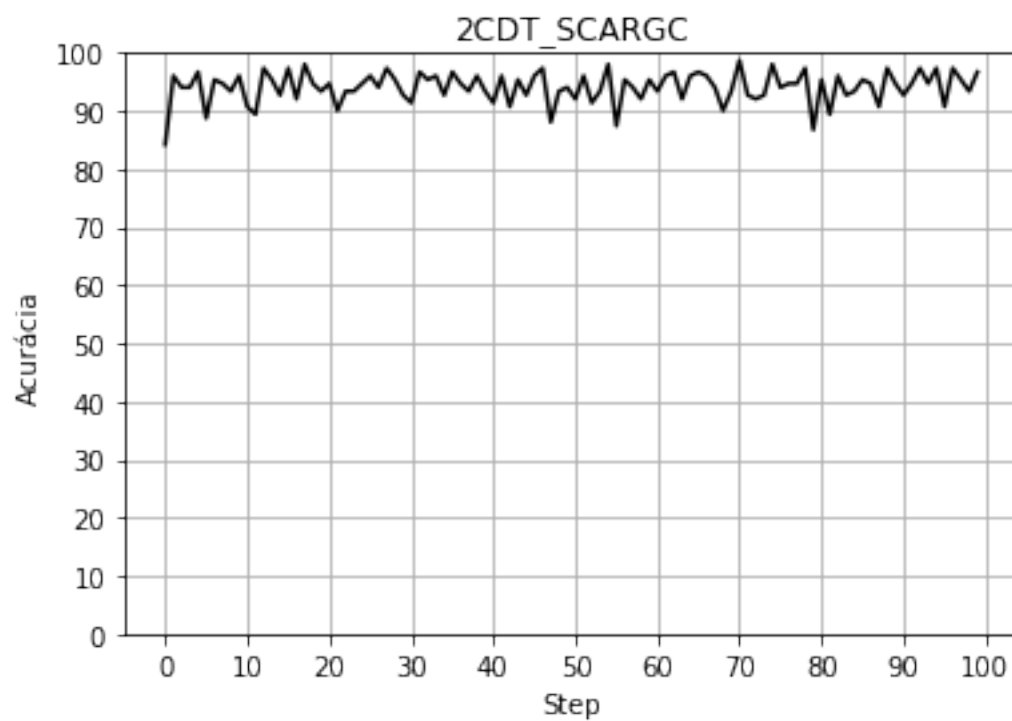
```
Tempo de Execução: 15.039196491241455
memory peak: 138516
```

Acc: 0.5874211397699547  
Macro-F1: 0.5086394230762534  
MCC: 0.29379062372157244  
Desvio Padrão: 0.16255993866172824  
Numero de atualizações: 10

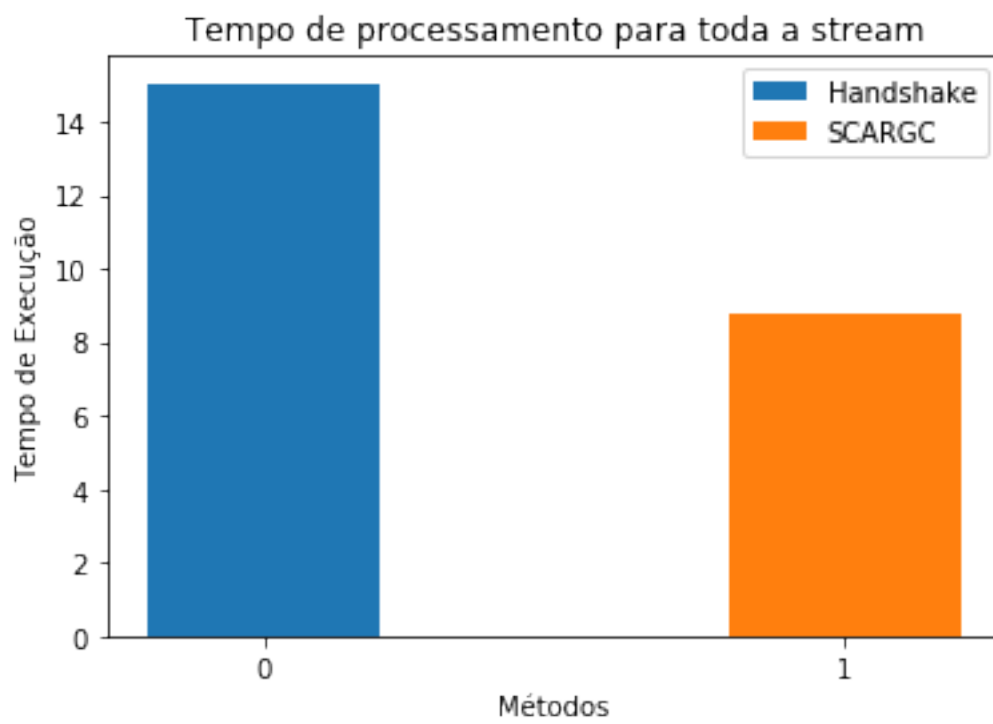


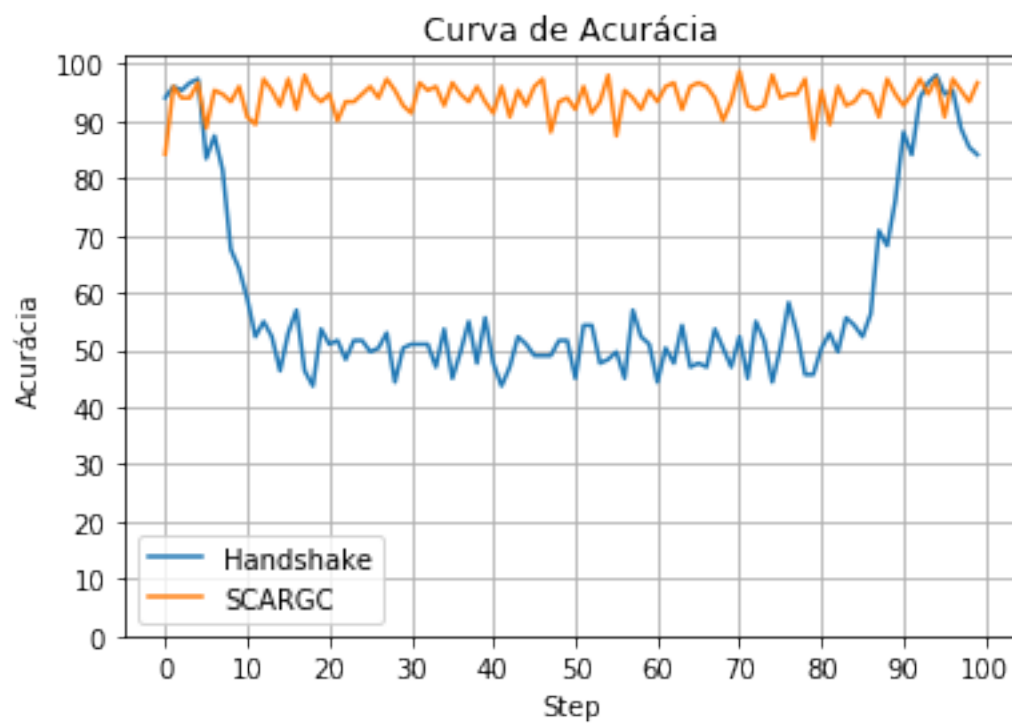
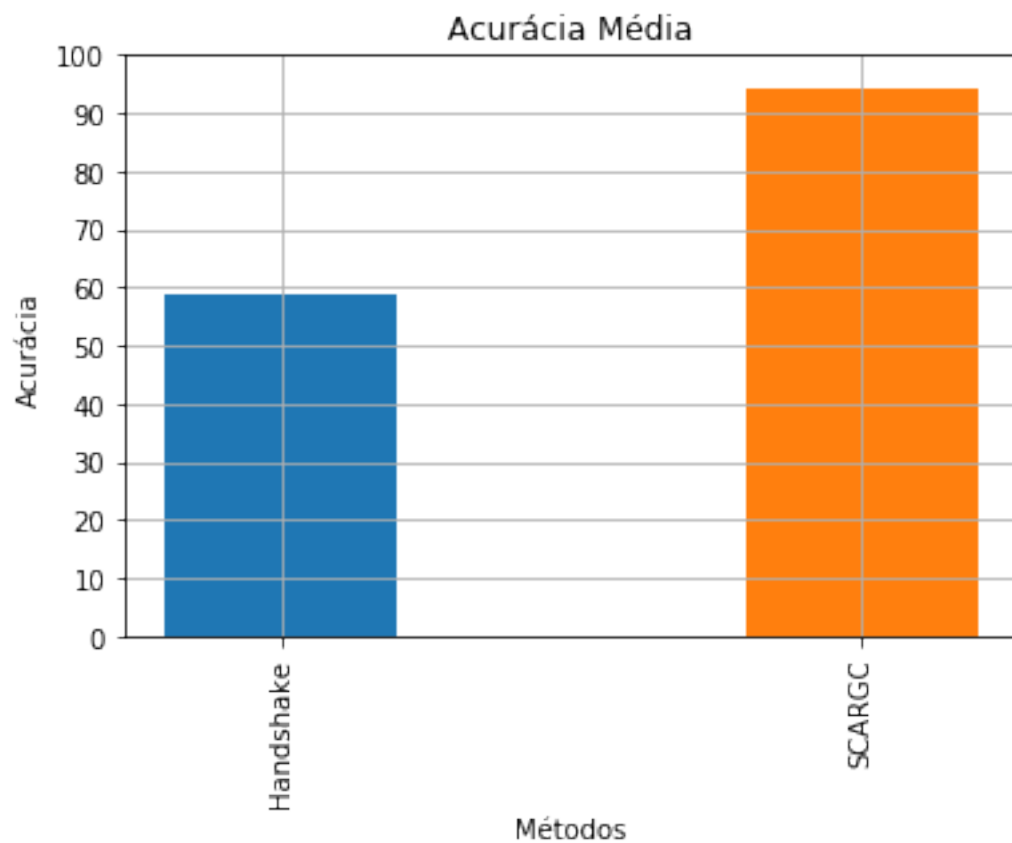


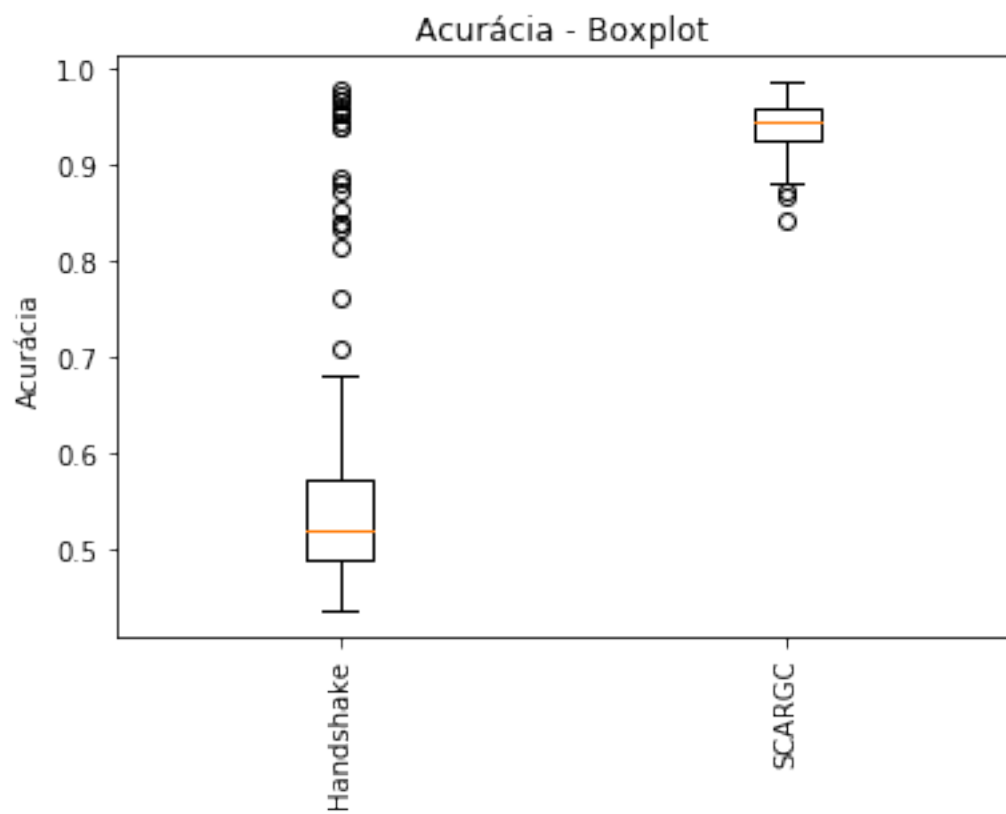
Tempo de Execução: 8.796793460845947  
memory peak: 143040  
Acc: 0.9408713837574068  
Macro-F1: 0.9407889775253657  
MCC: 0.8815937221238583  
Desvio Padrão: 0.02673541786357556  
Numero de atualizações: 97



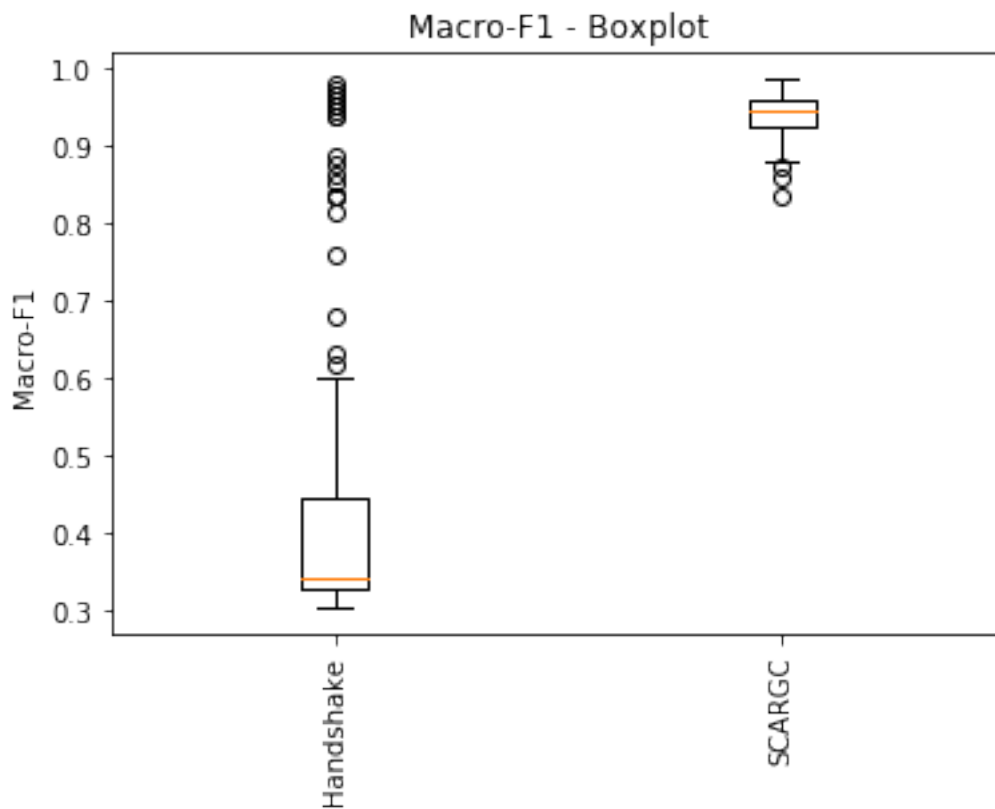
```
/home/localuser/anaconda3/lib/python3.6/site-packages/matplotlib/cbook/deprecation.py:106: MatplotlibDeprecationWarning: The 'warn' method is deprecated, use 'warn_message' instead.  
warnings.warn(message, mplDeprecation, stacklevel=1)
```



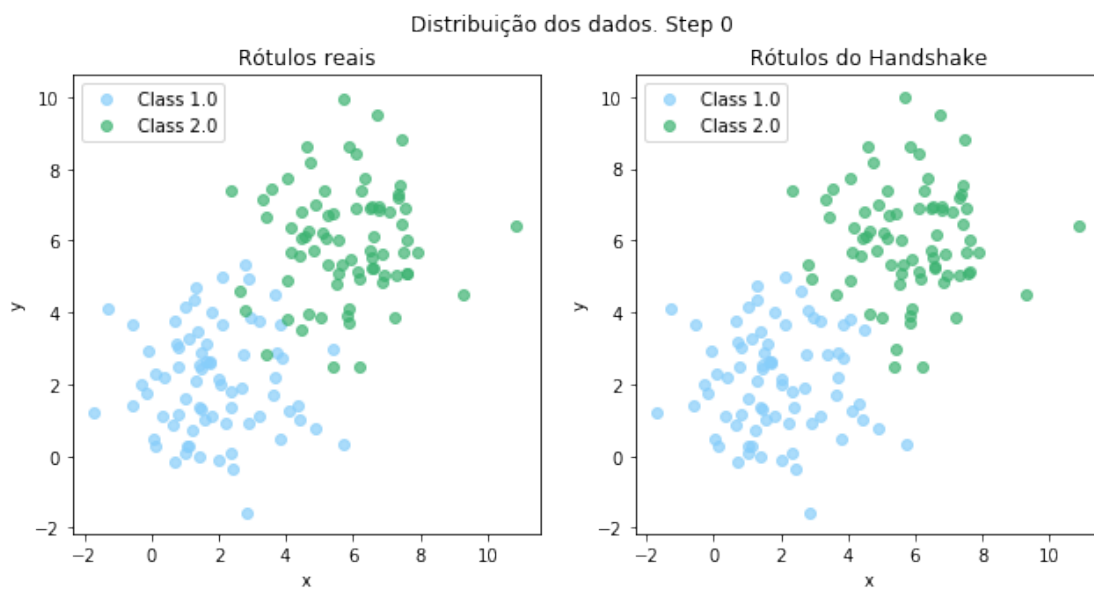




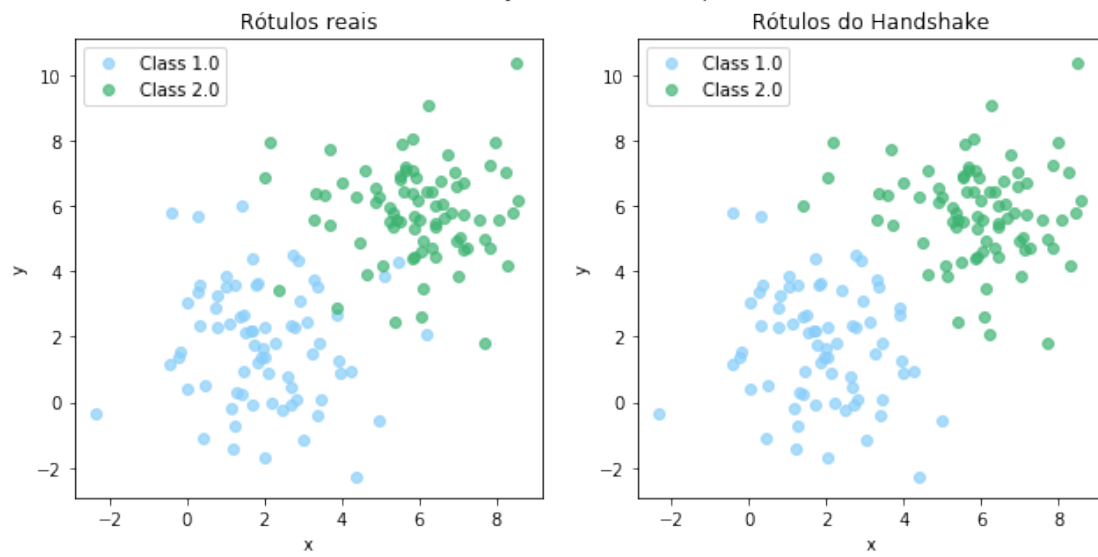




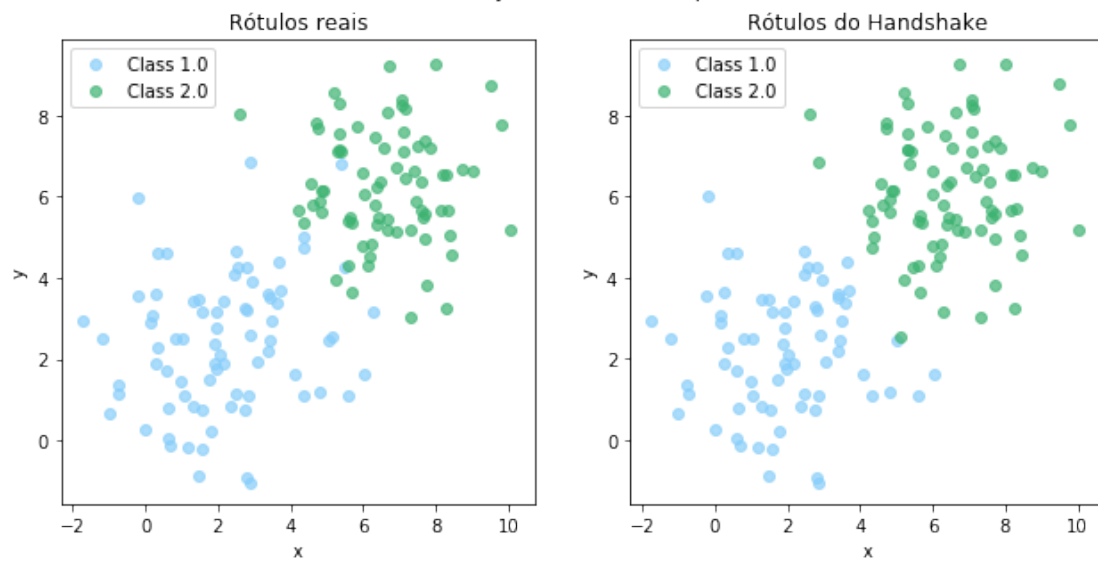
```
In [8]: plots.plotPerBatches(stream, predicted, l_stream, len(stream))
```



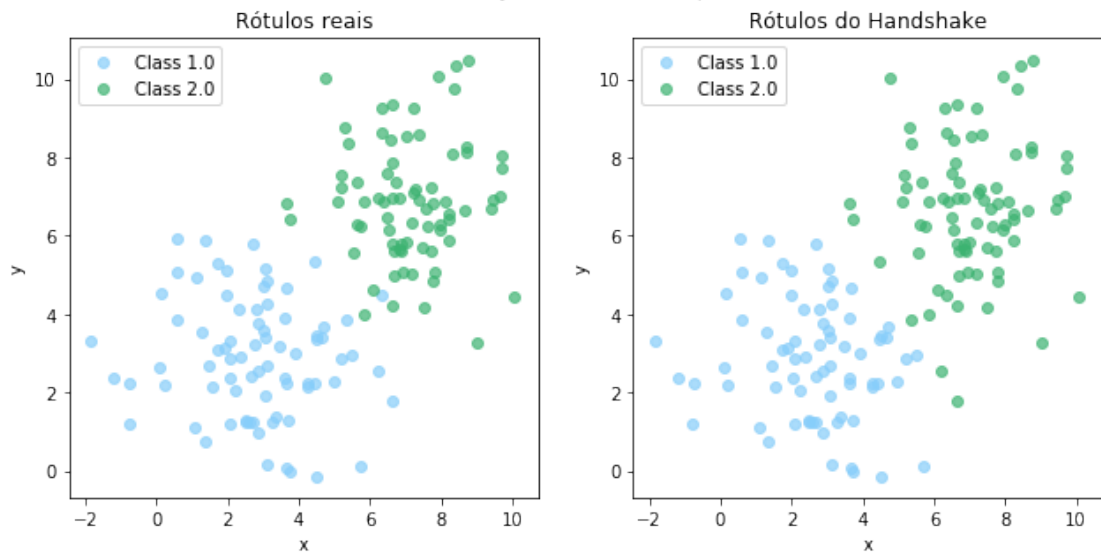
Distribuição dos dados. Step 1



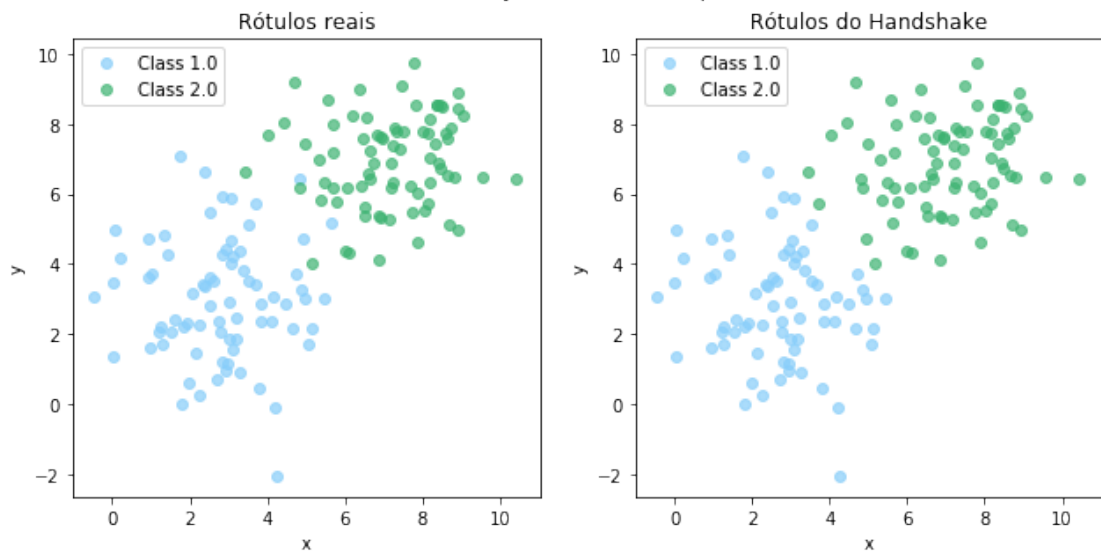
Distribuição dos dados. Step 2



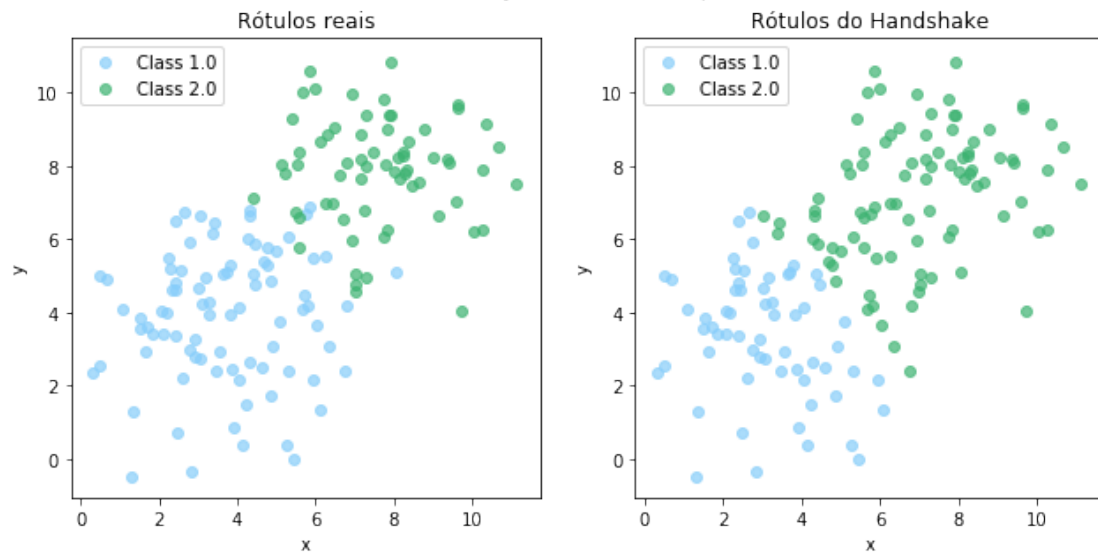
Distribuição dos dados. Step 3



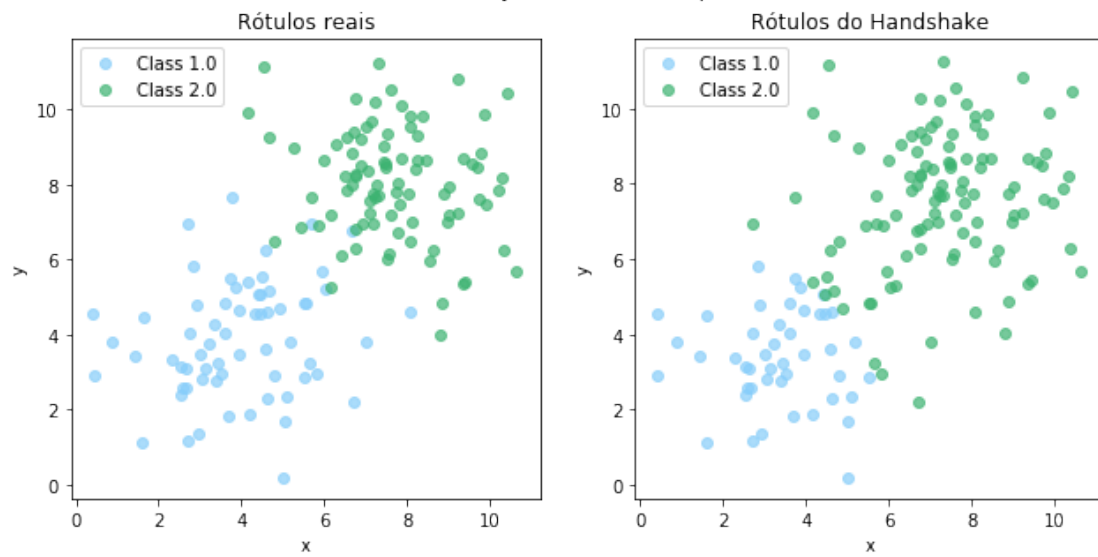
Distribuição dos dados. Step 4



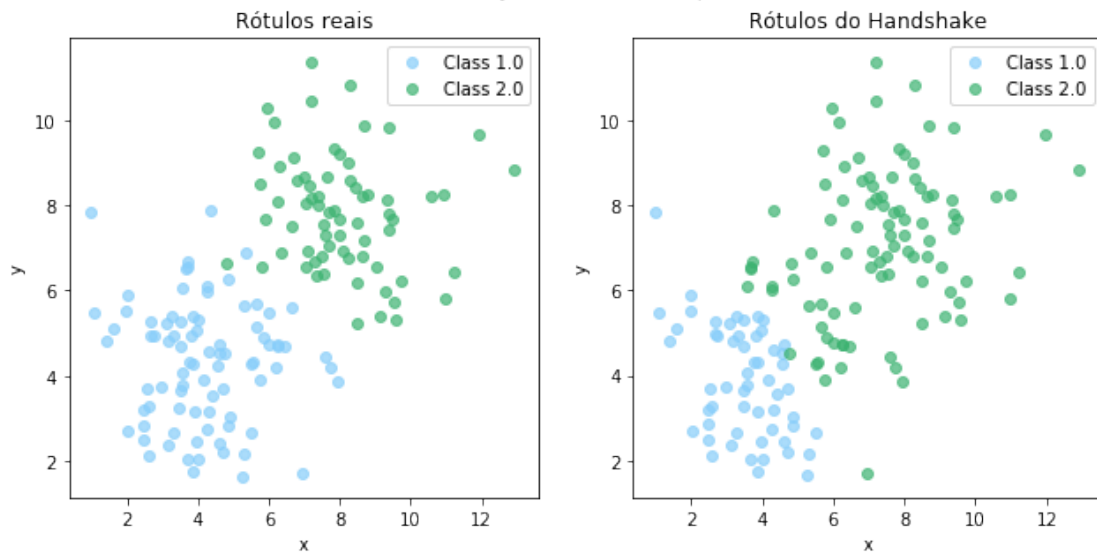
Distribuição dos dados. Step 5



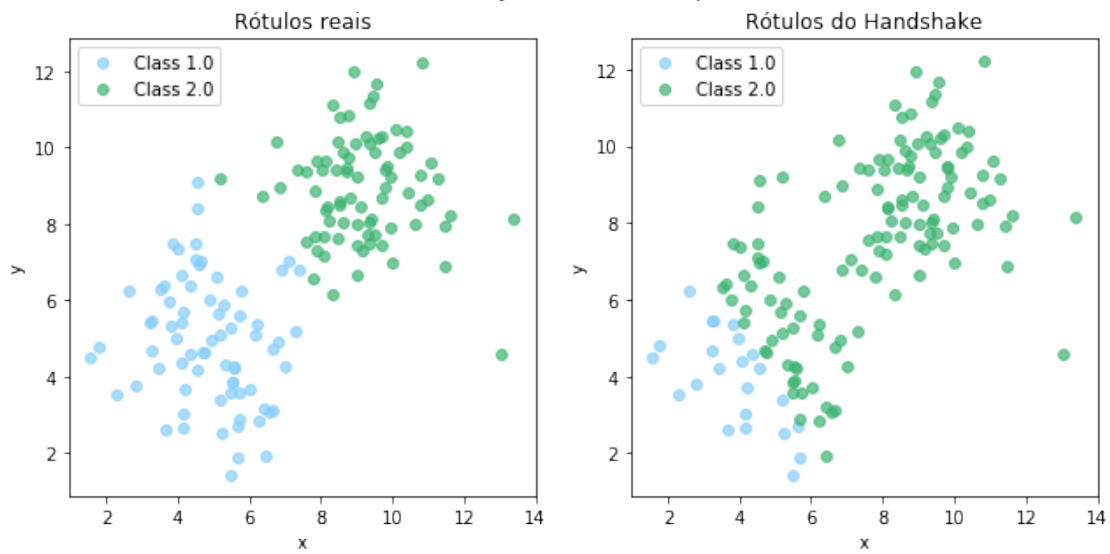
Distribuição dos dados. Step 6



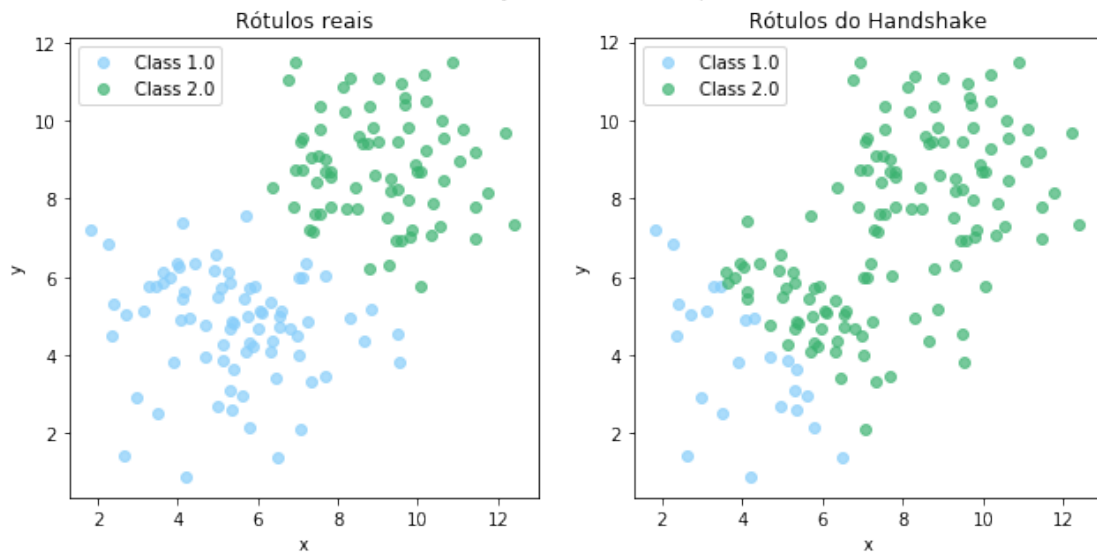
Distribuição dos dados. Step 7



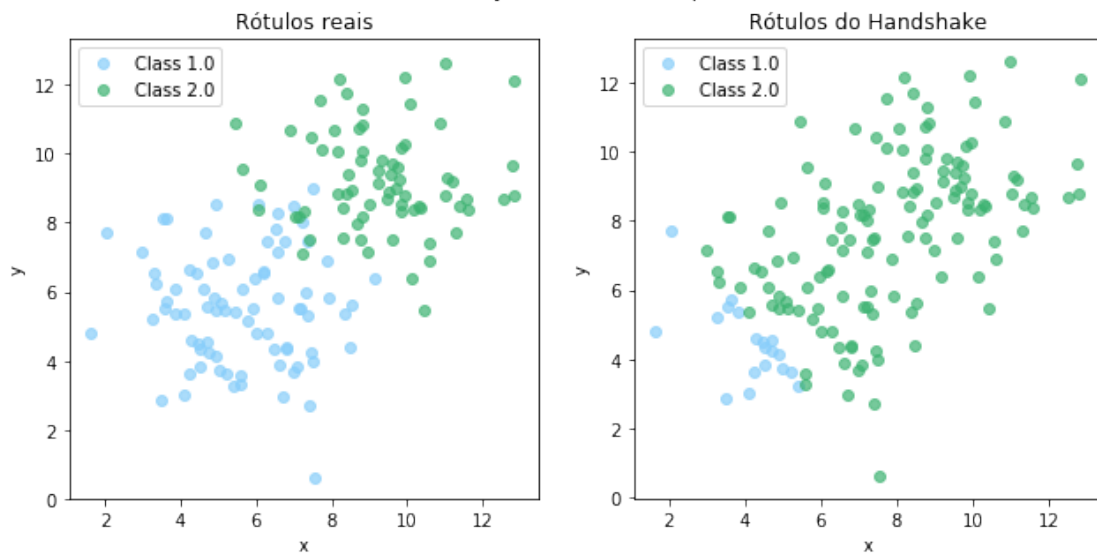
Distribuição dos dados. Step 8



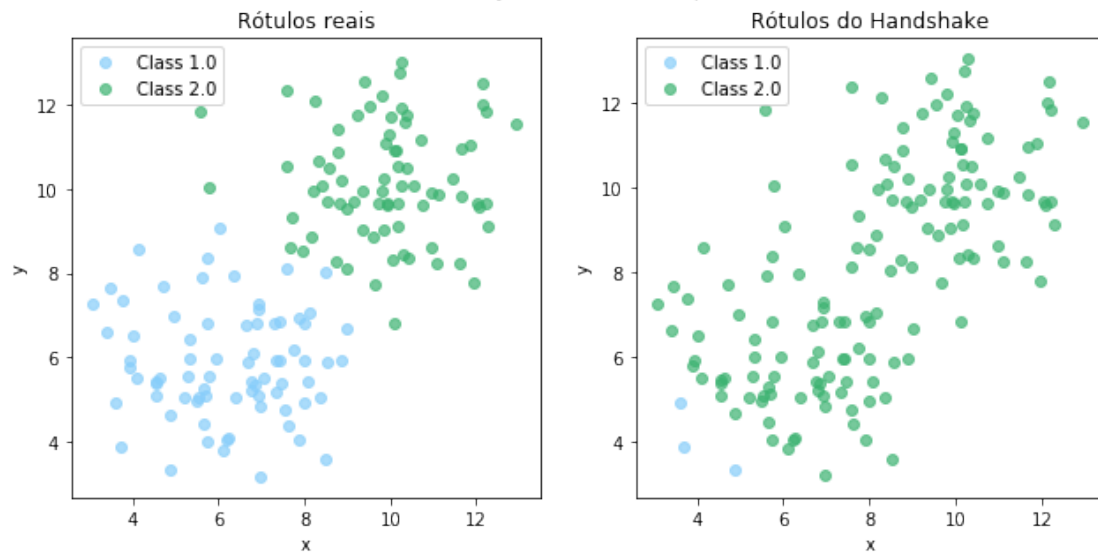
Distribuição dos dados. Step 9



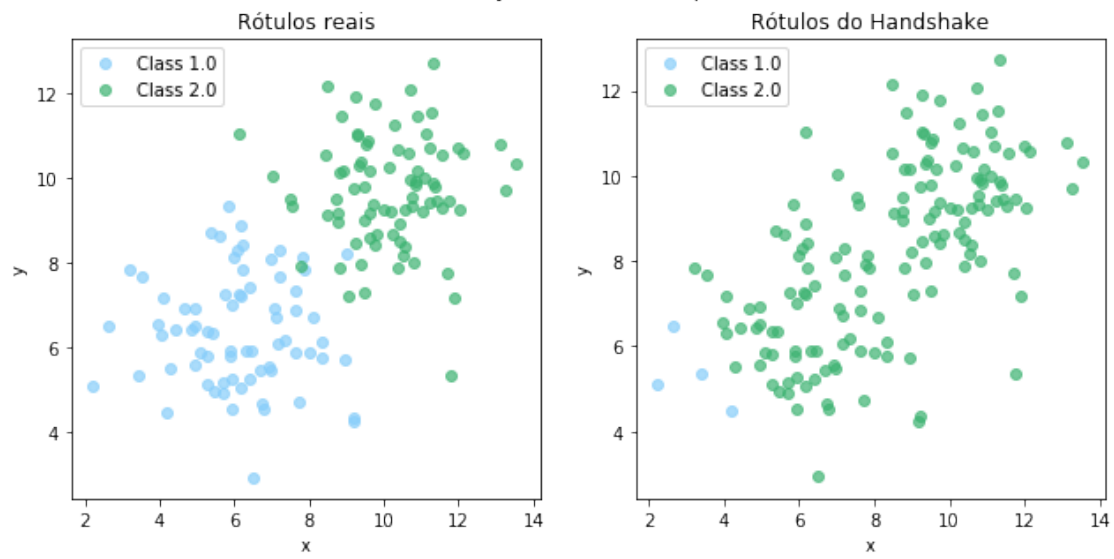
Distribuição dos dados. Step 10



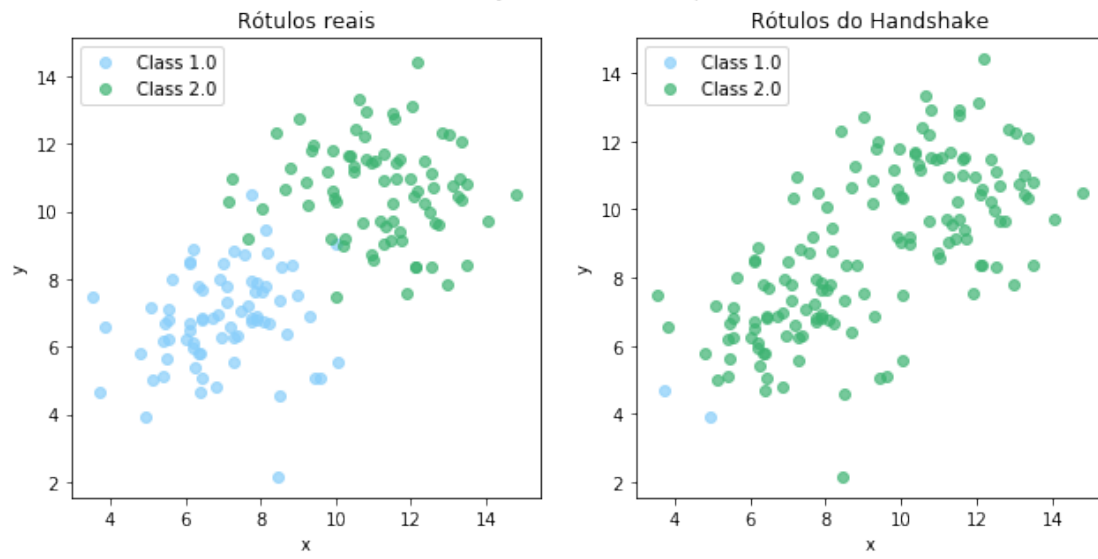
Distribuição dos dados. Step 11



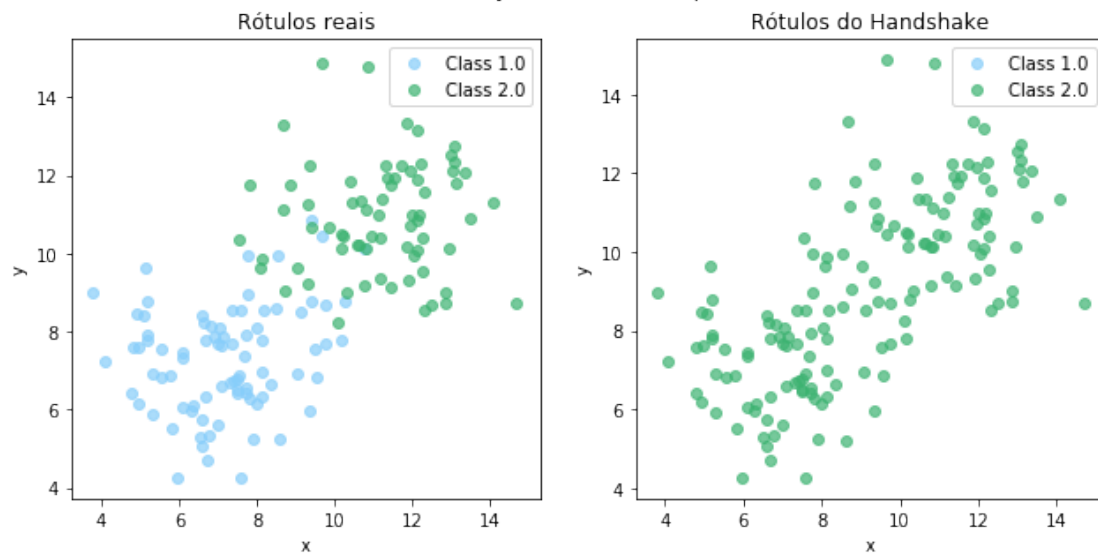
Distribuição dos dados. Step 12



Distribuição dos dados. Step 13

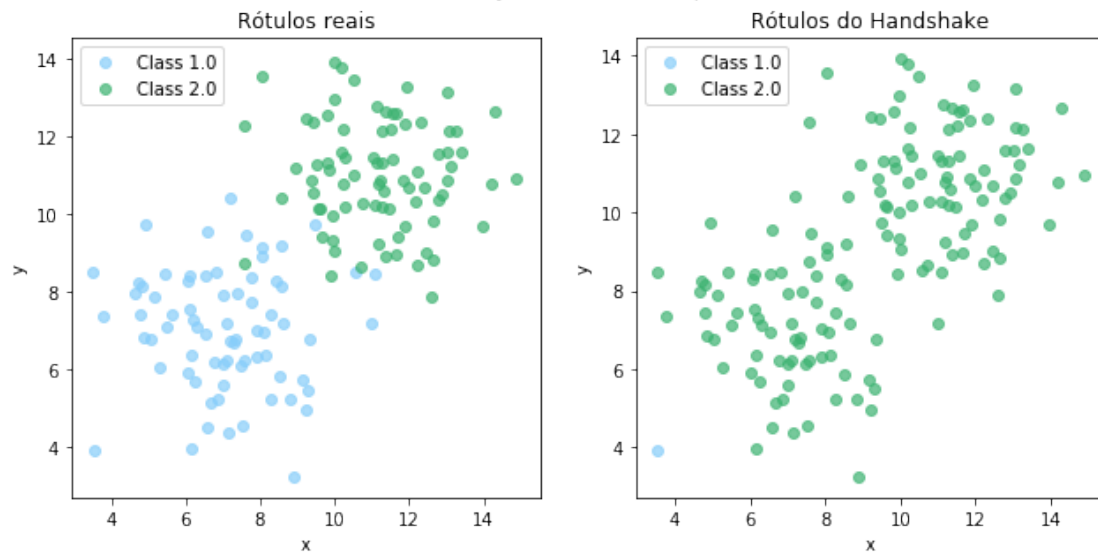


Distribuição dos dados. Step 14

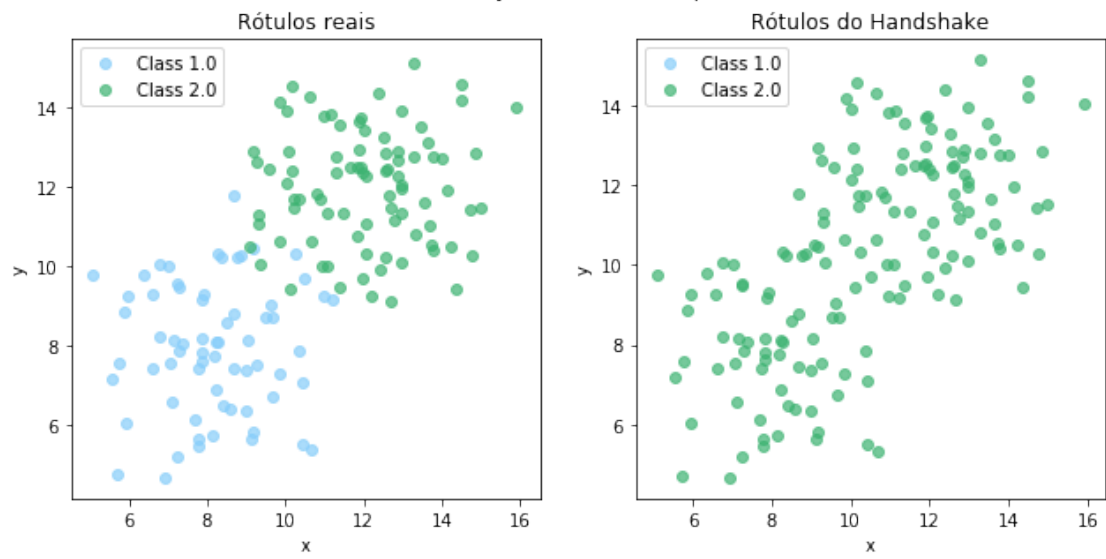




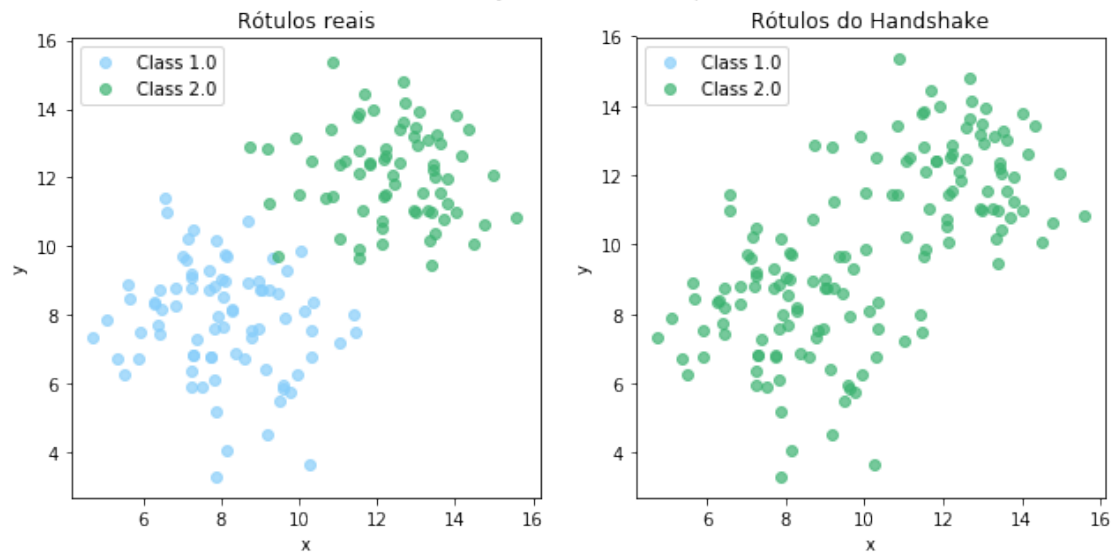
Distribuição dos dados. Step 15



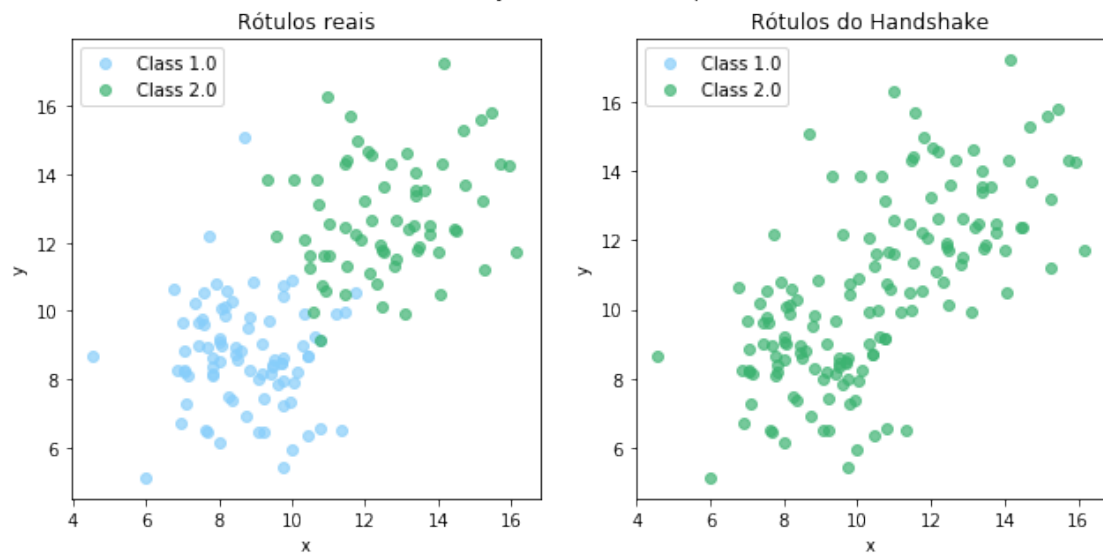
Distribuição dos dados. Step 16



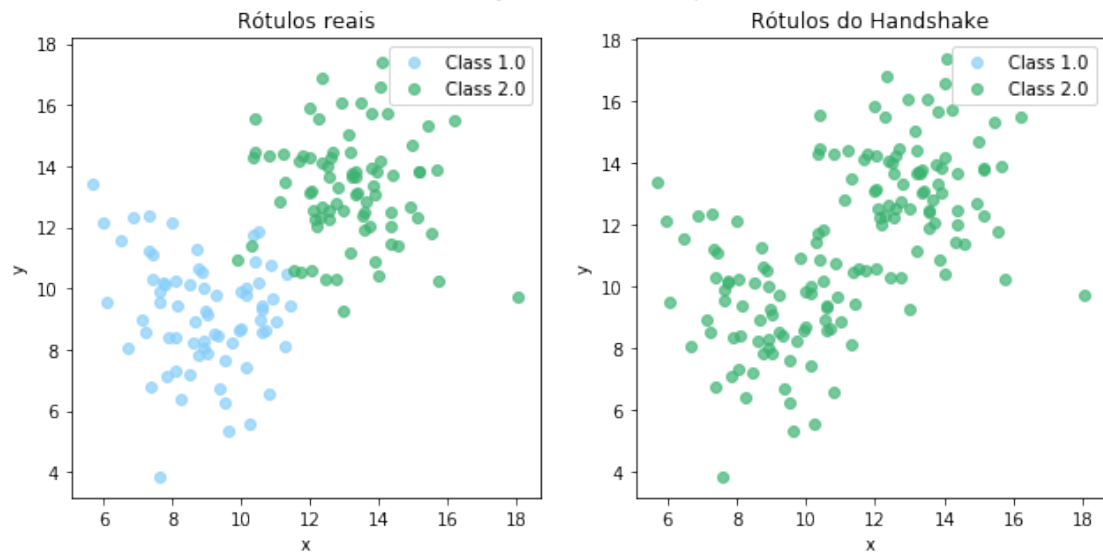
Distribuição dos dados. Step 17



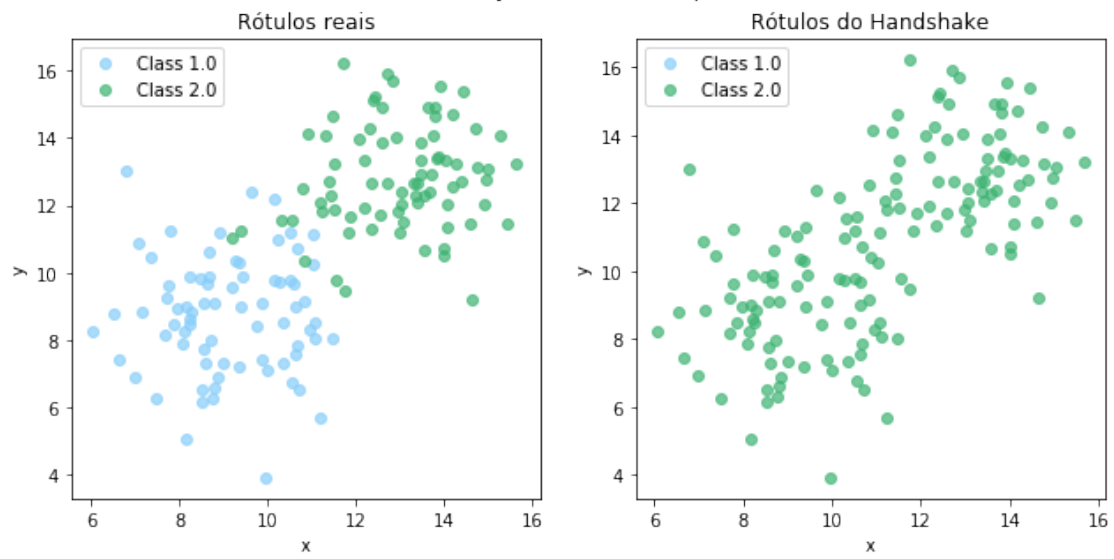
Distribuição dos dados. Step 18



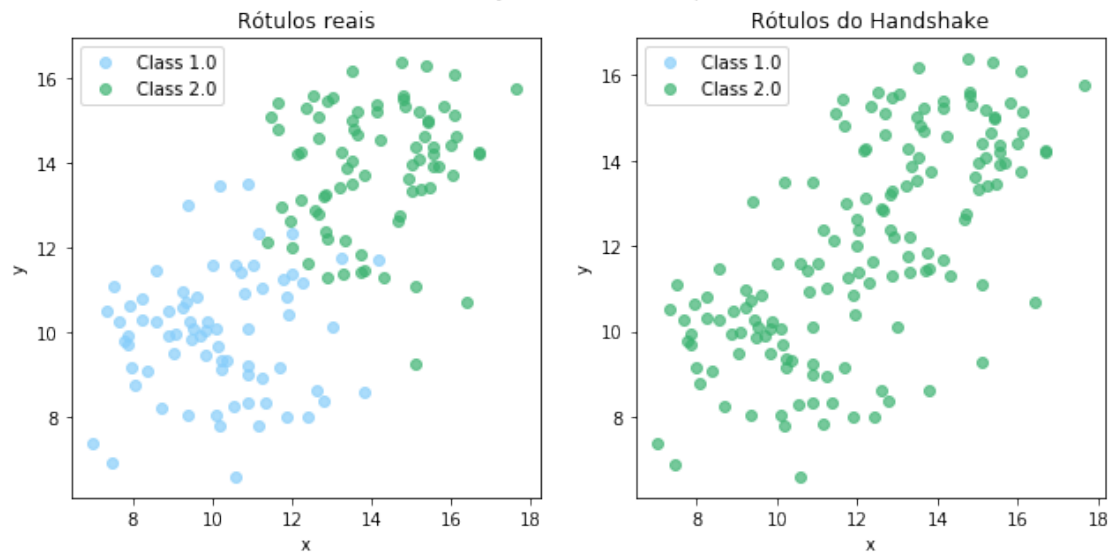
Distribuição dos dados. Step 19



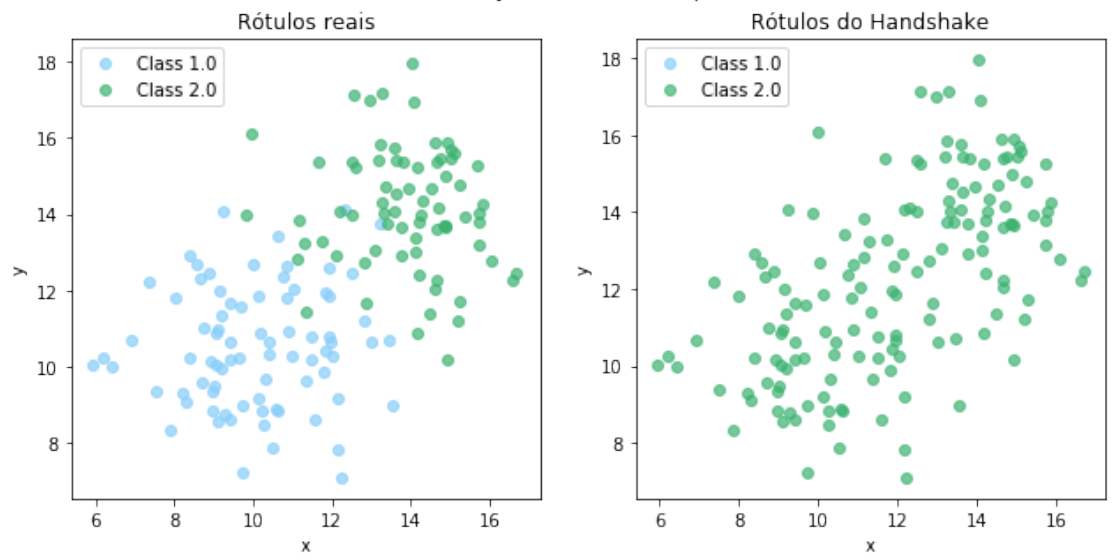
Distribuição dos dados. Step 20



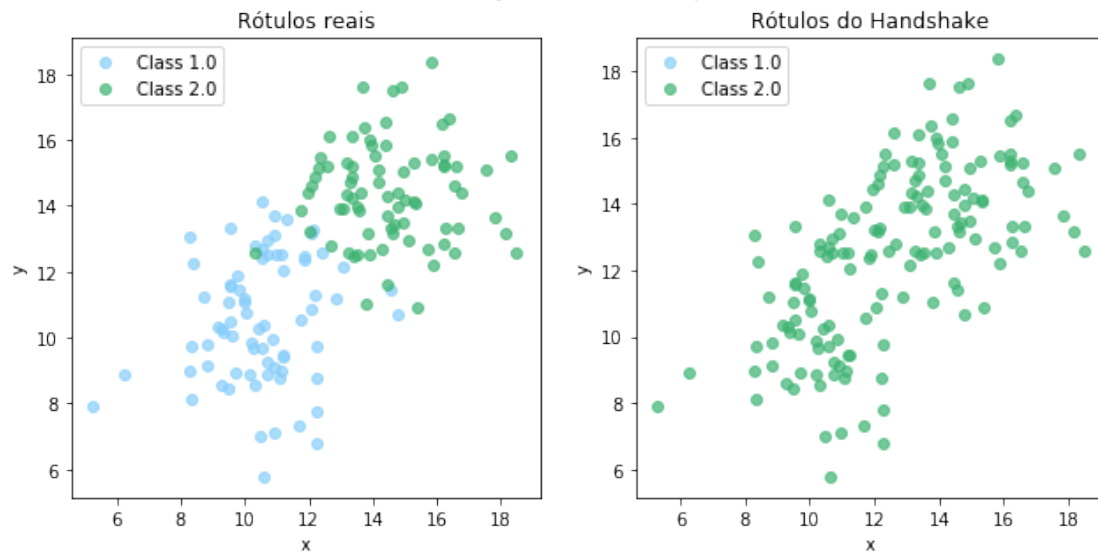
Distribuição dos dados. Step 21



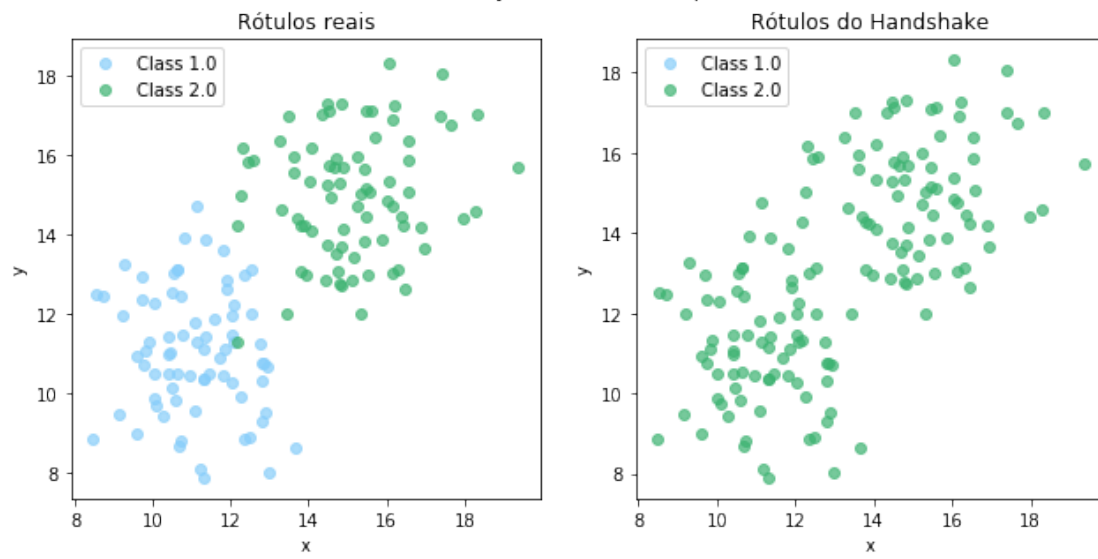
Distribuição dos dados. Step 22



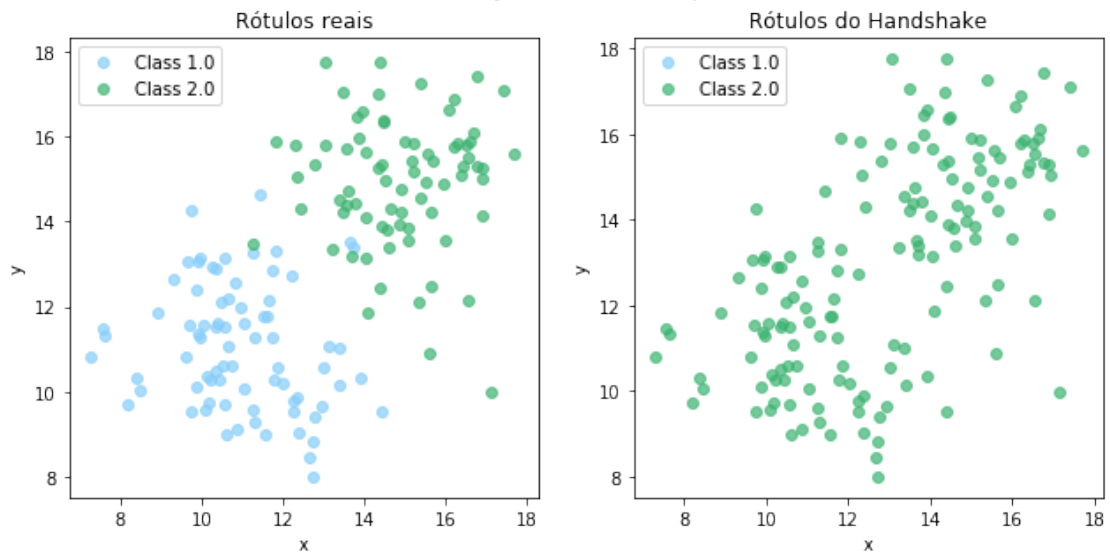
Distribuição dos dados. Step 23



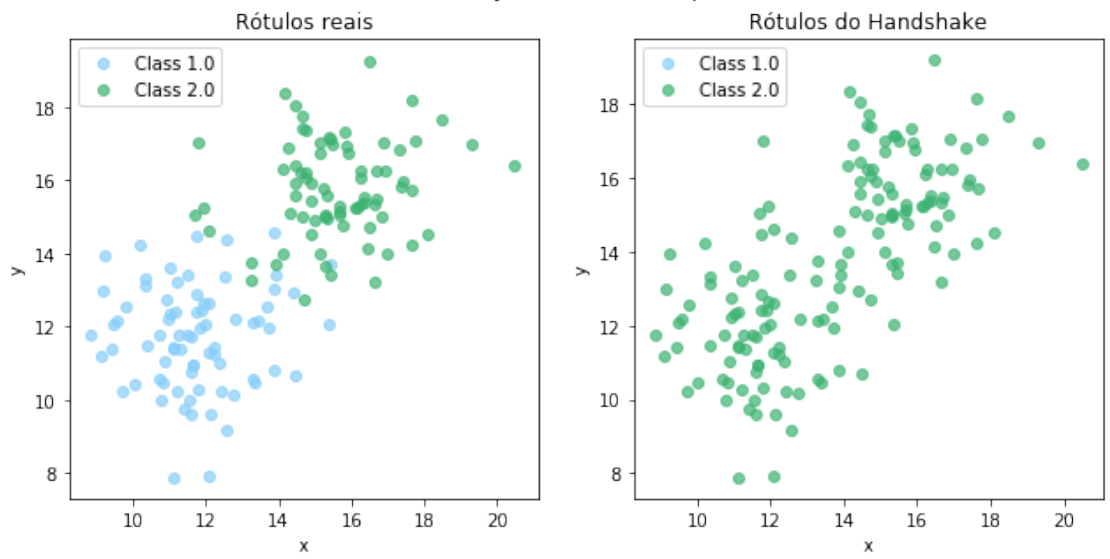
Distribuição dos dados. Step 24



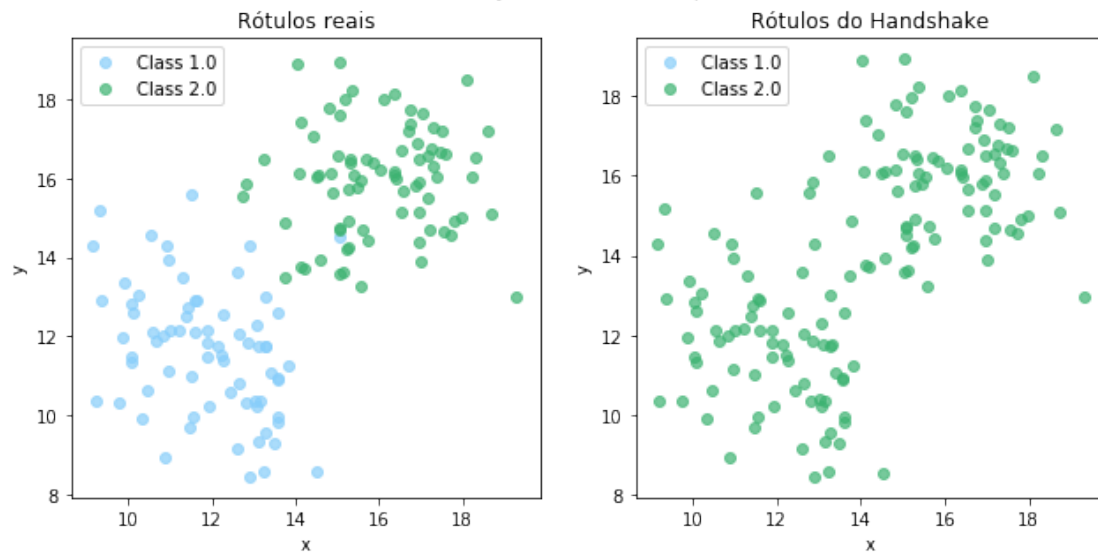
Distribuição dos dados. Step 25



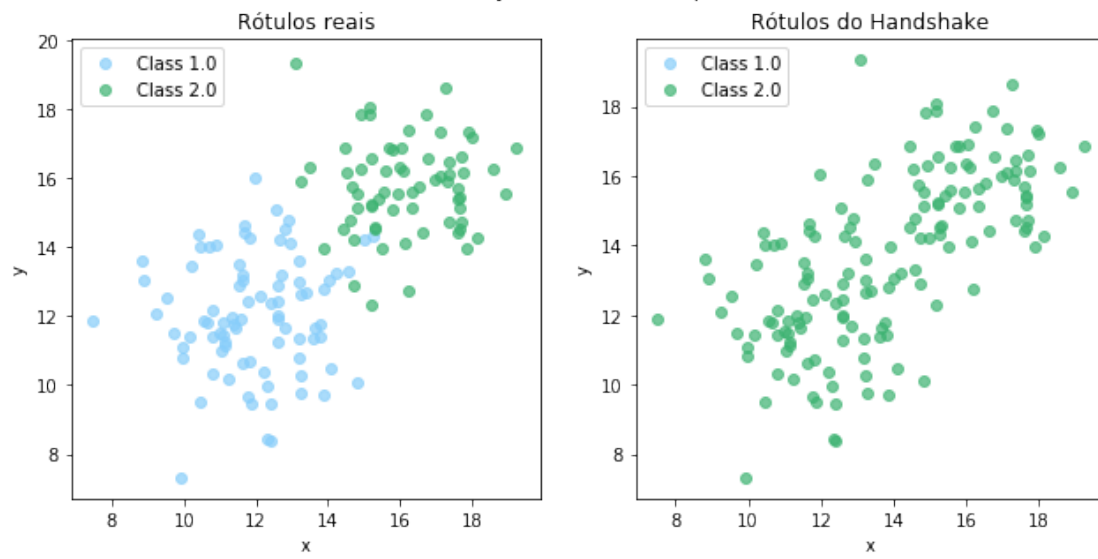
Distribuição dos dados. Step 26



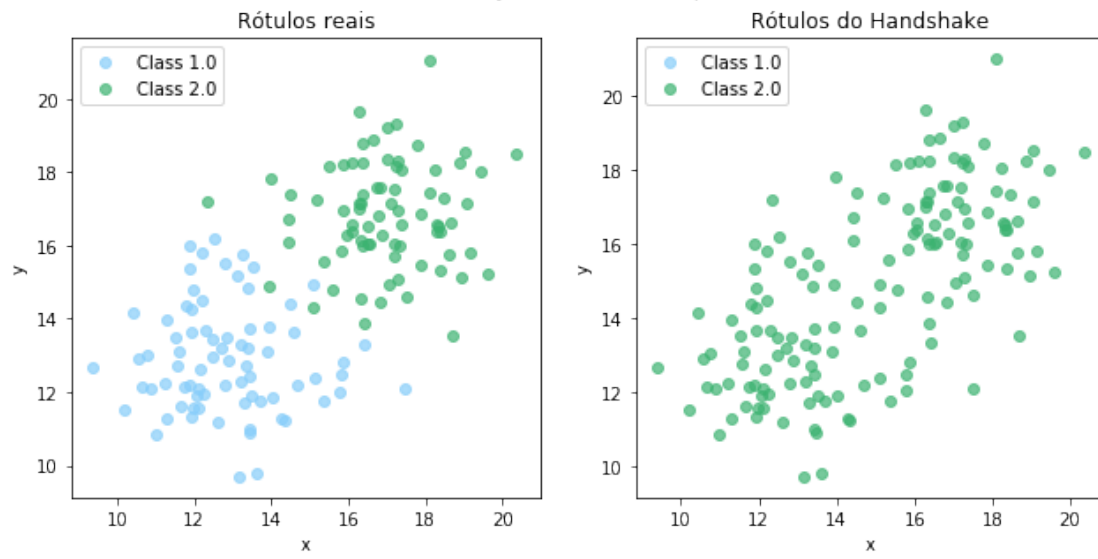
Distribuição dos dados. Step 27



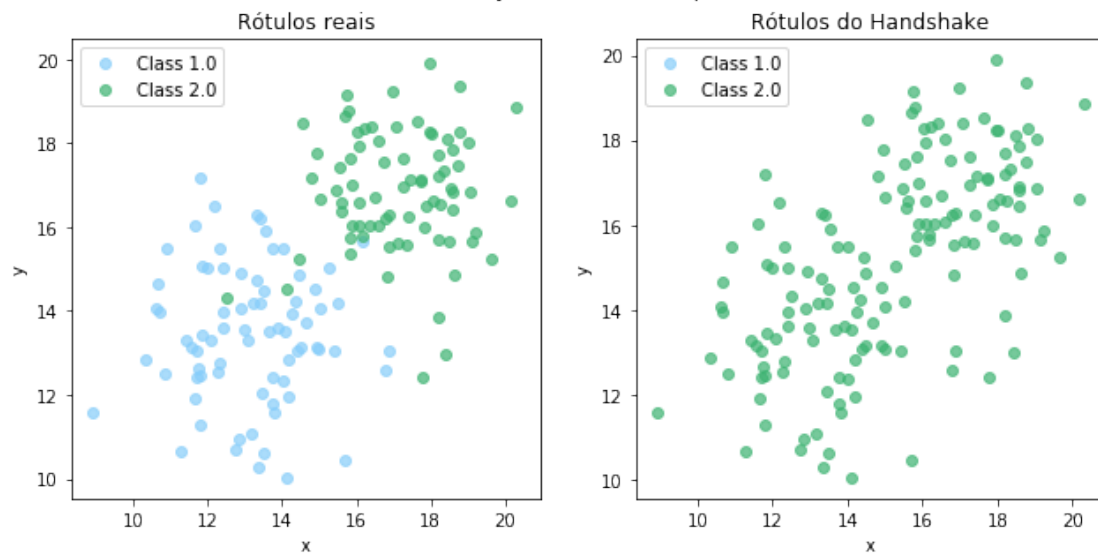
Distribuição dos dados. Step 28



Distribuição dos dados. Step 29

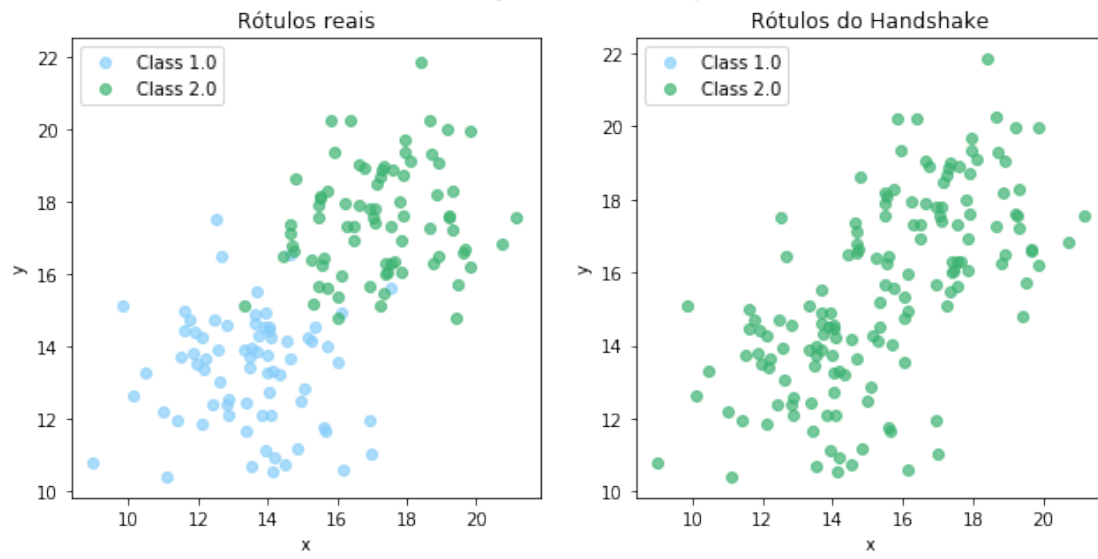


Distribuição dos dados. Step 30

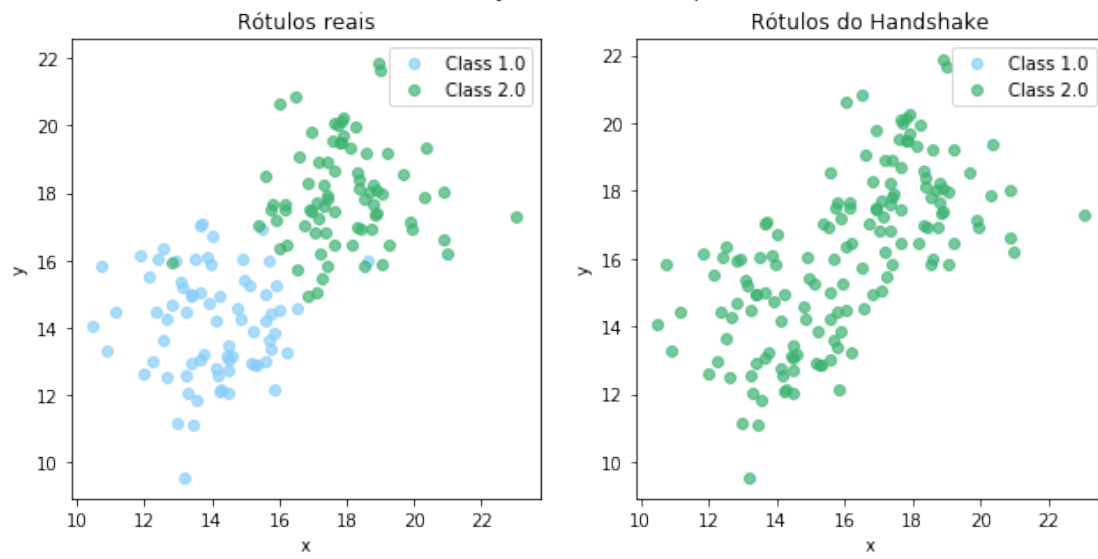




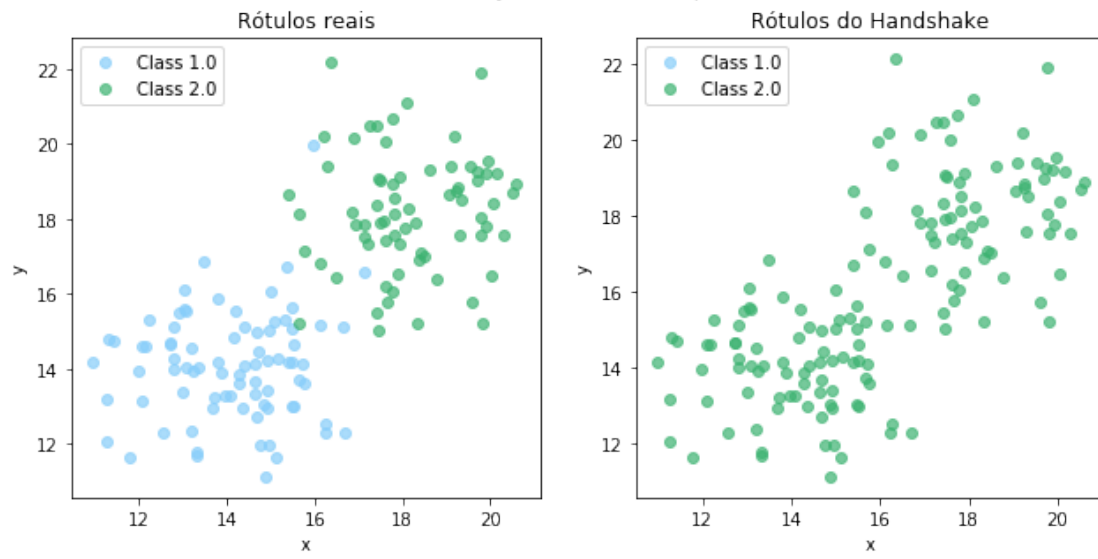
Distribuição dos dados. Step 31



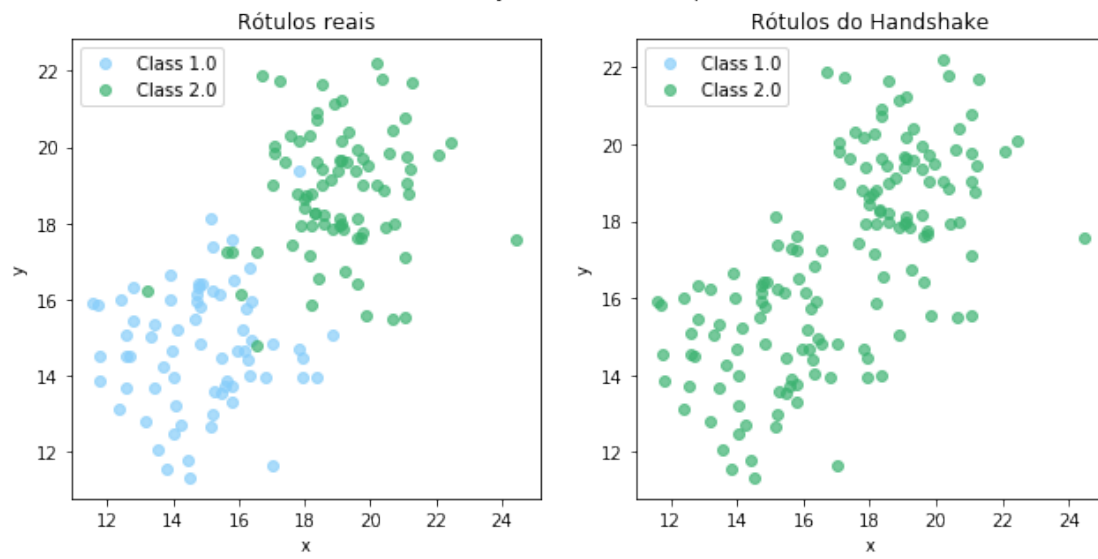
Distribuição dos dados. Step 32



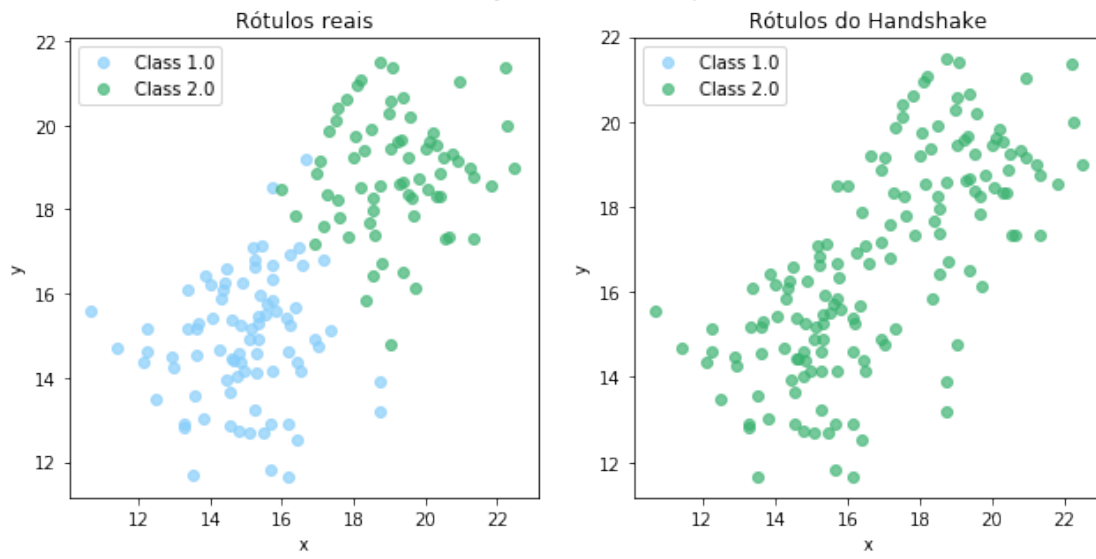
Distribuição dos dados. Step 33



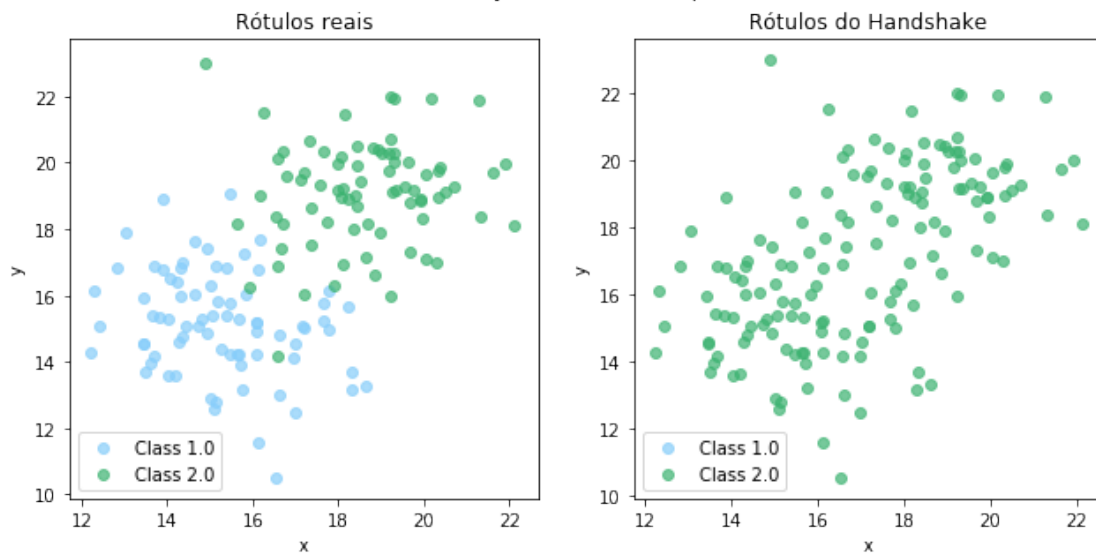
Distribuição dos dados. Step 34



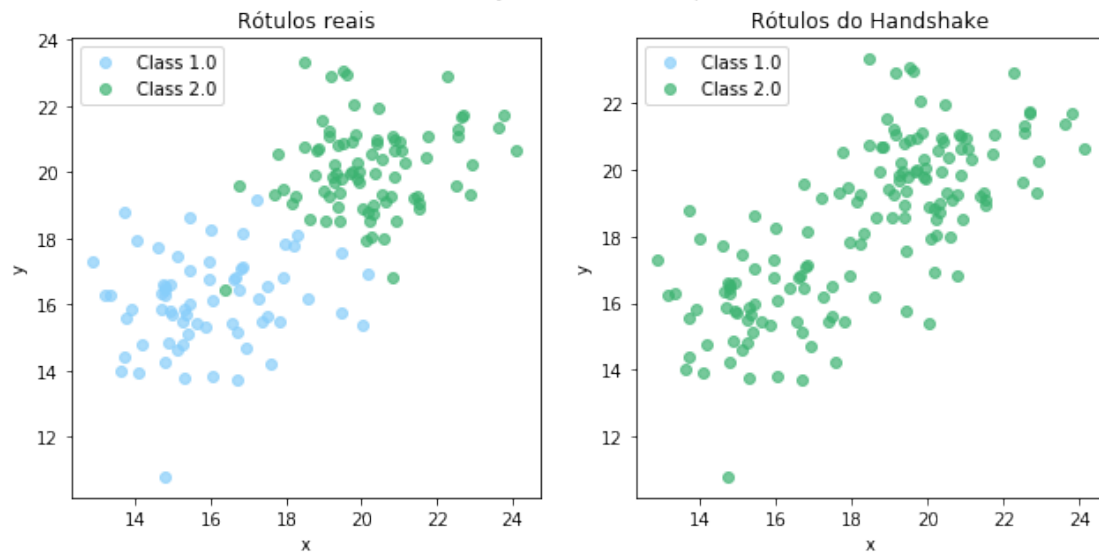
Distribuição dos dados. Step 35



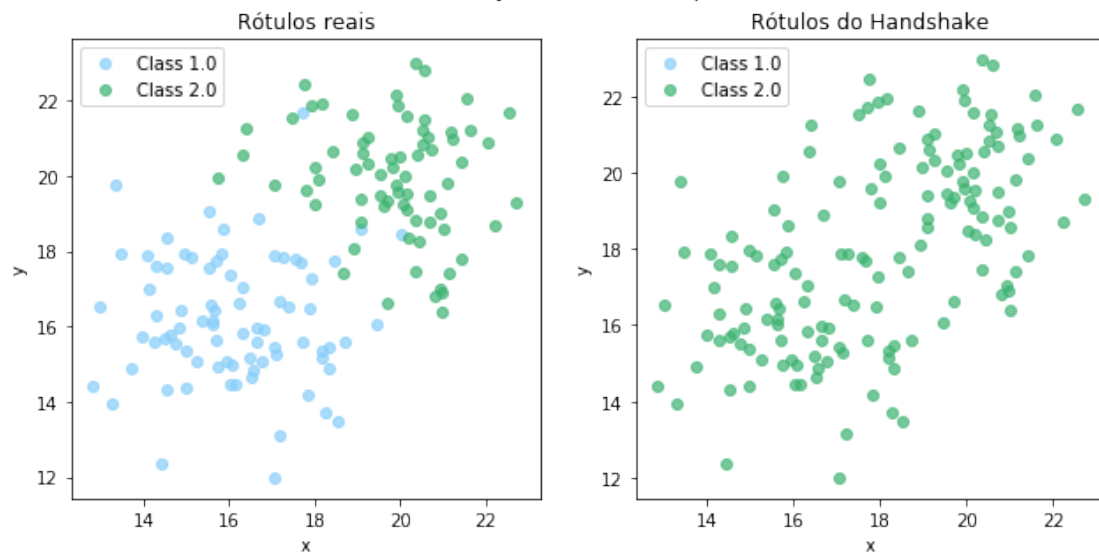
Distribuição dos dados. Step 36



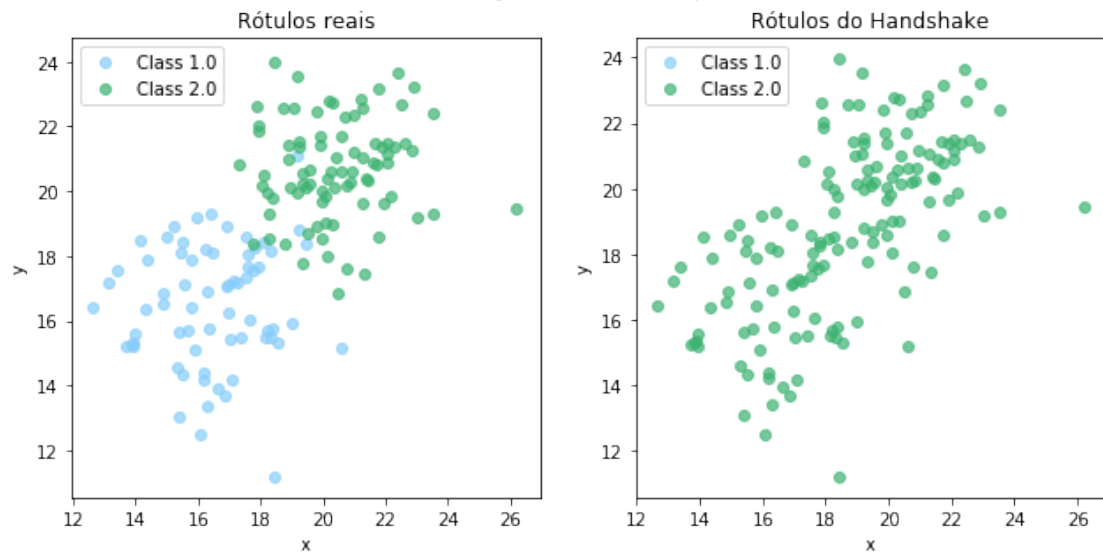
Distribuição dos dados. Step 37



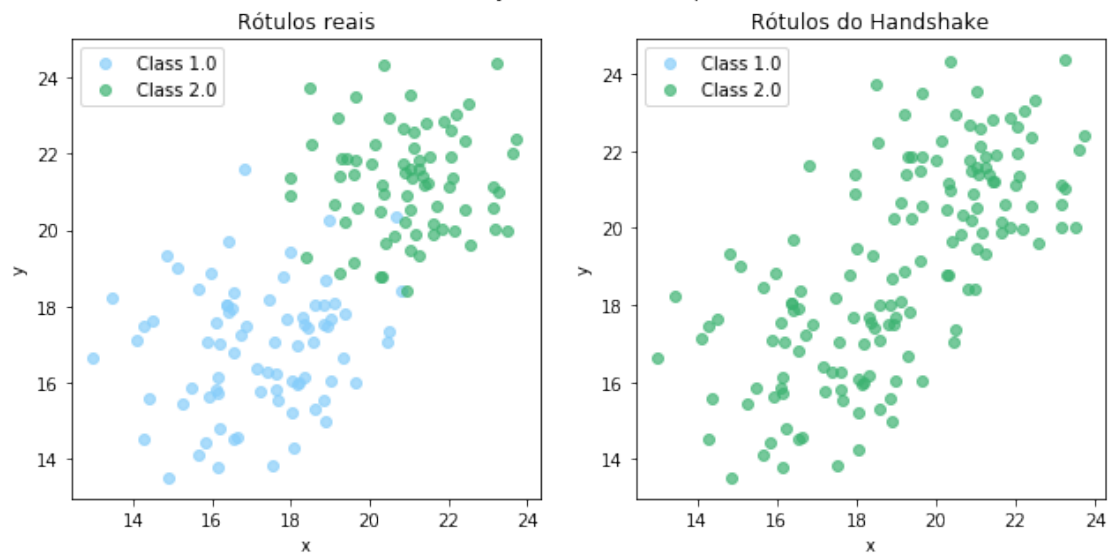
Distribuição dos dados. Step 38



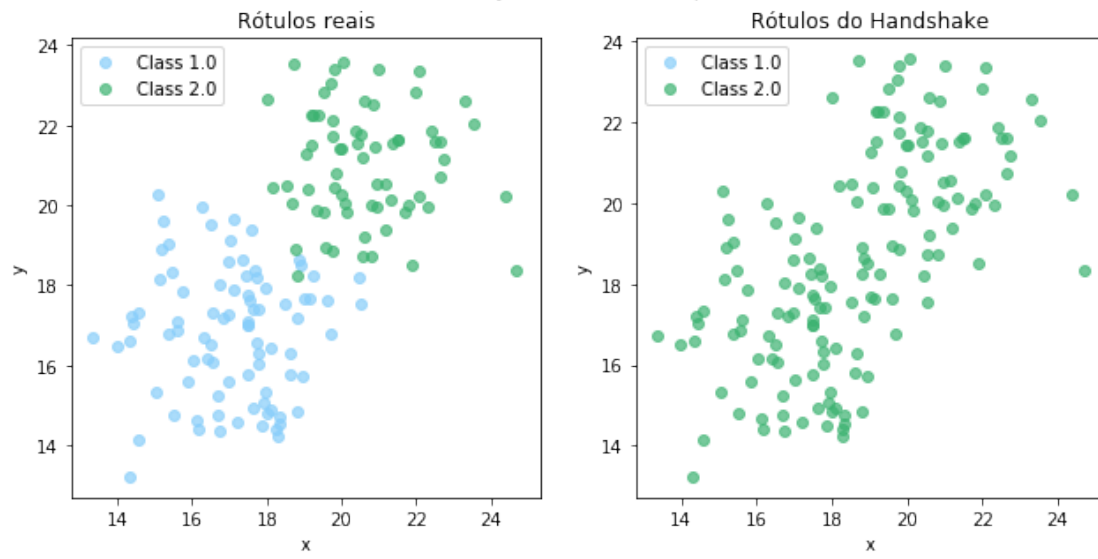
Distribuição dos dados. Step 39



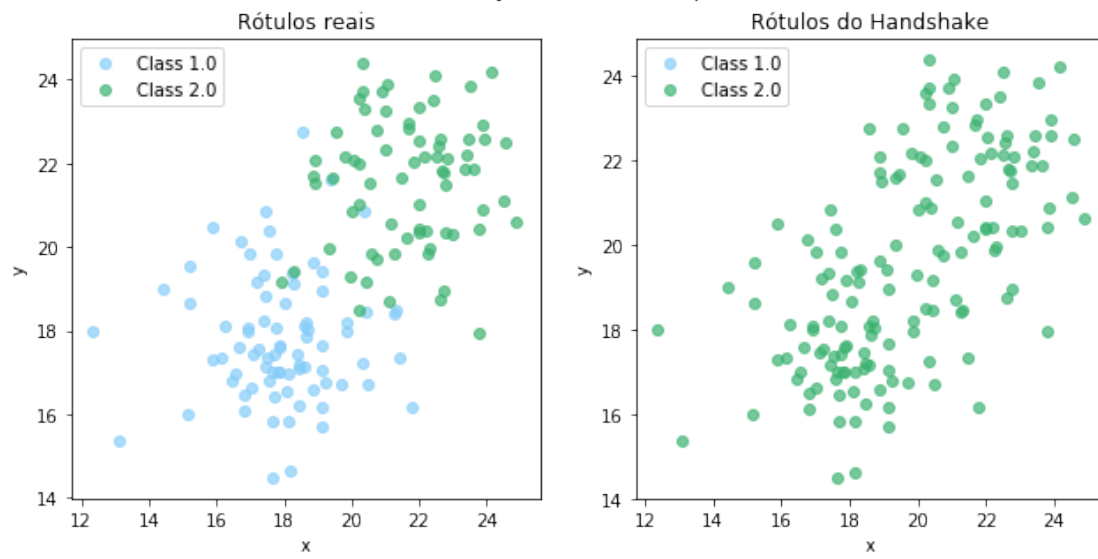
Distribuição dos dados. Step 40



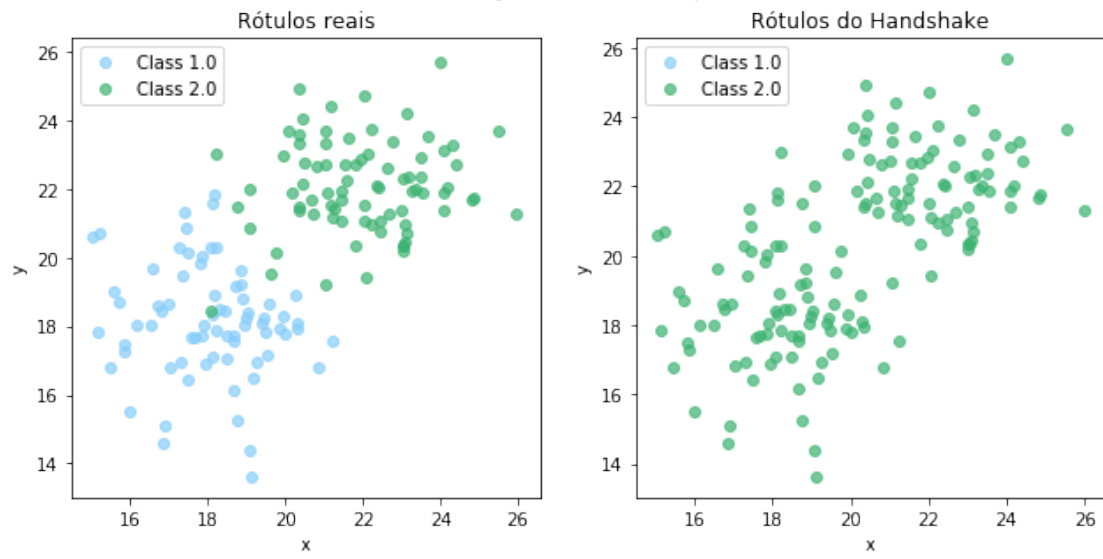
Distribuição dos dados. Step 41



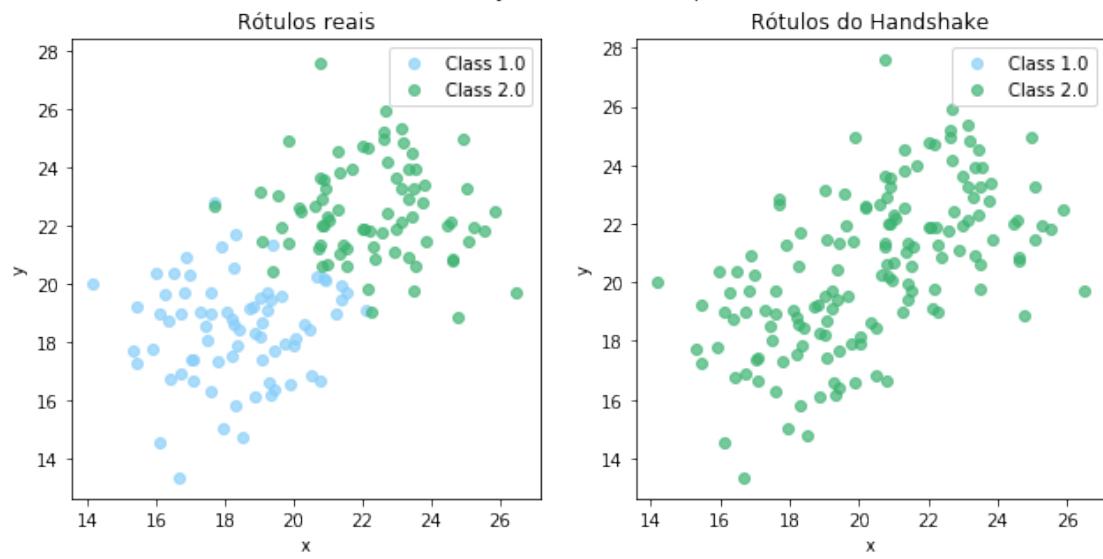
Distribuição dos dados. Step 42



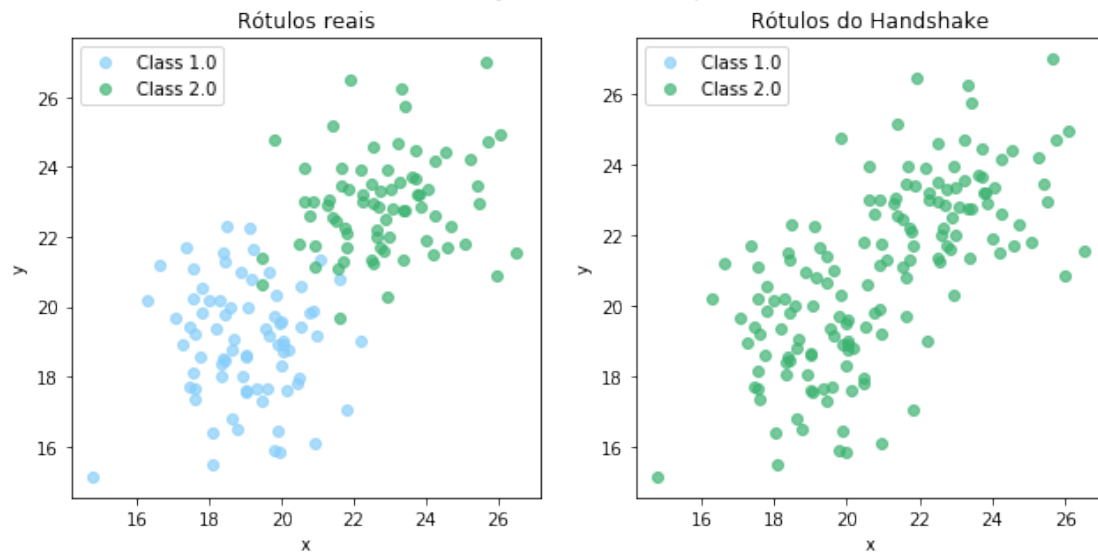
Distribuição dos dados. Step 43



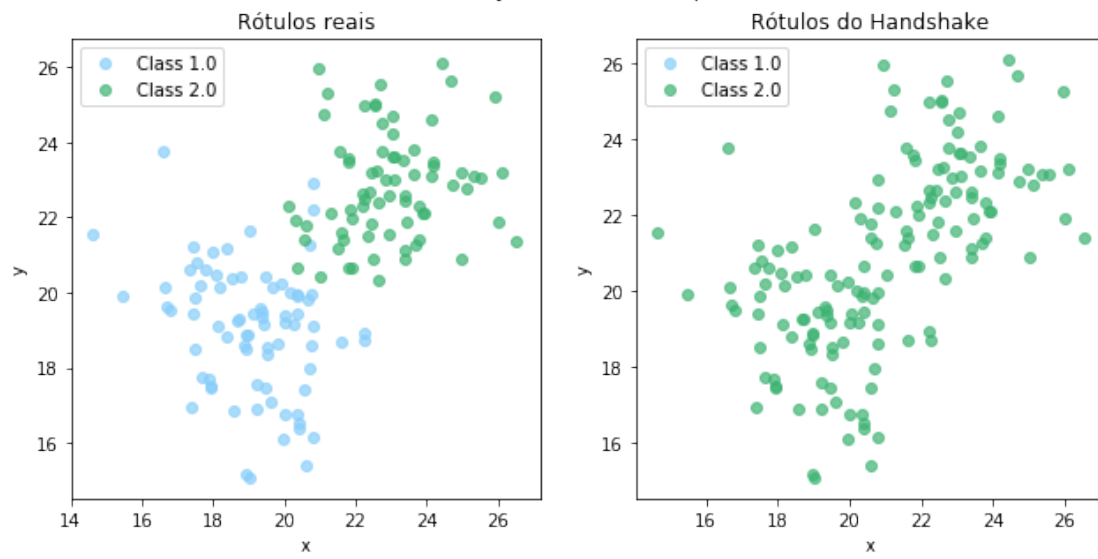
Distribuição dos dados. Step 44



Distribuição dos dados. Step 45

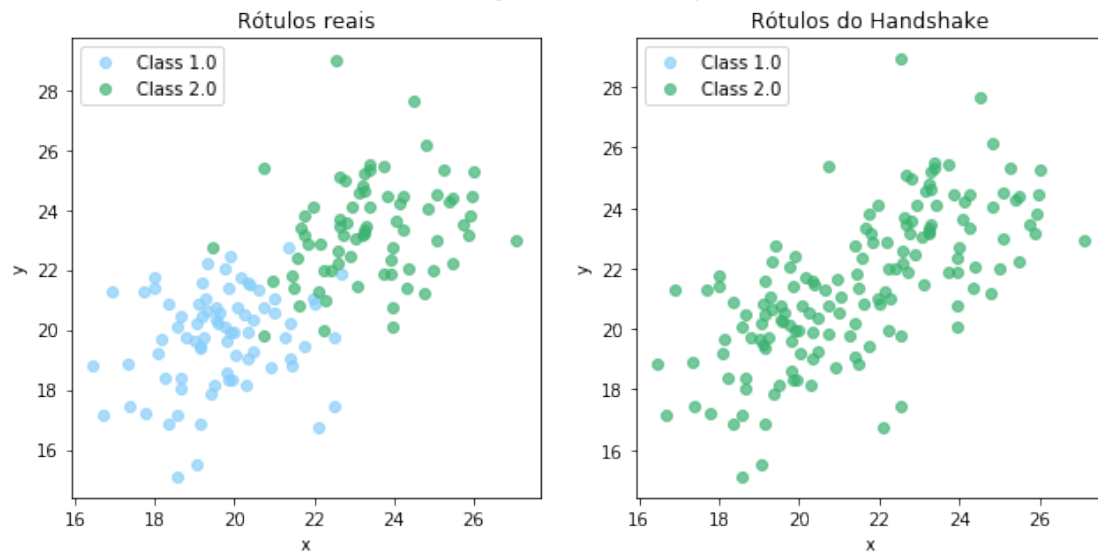


Distribuição dos dados. Step 46

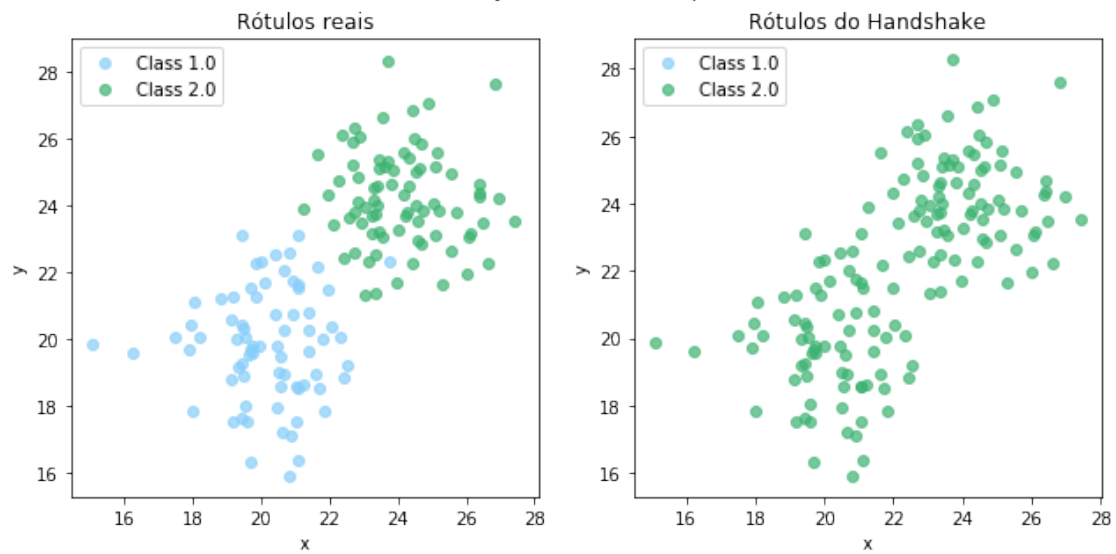




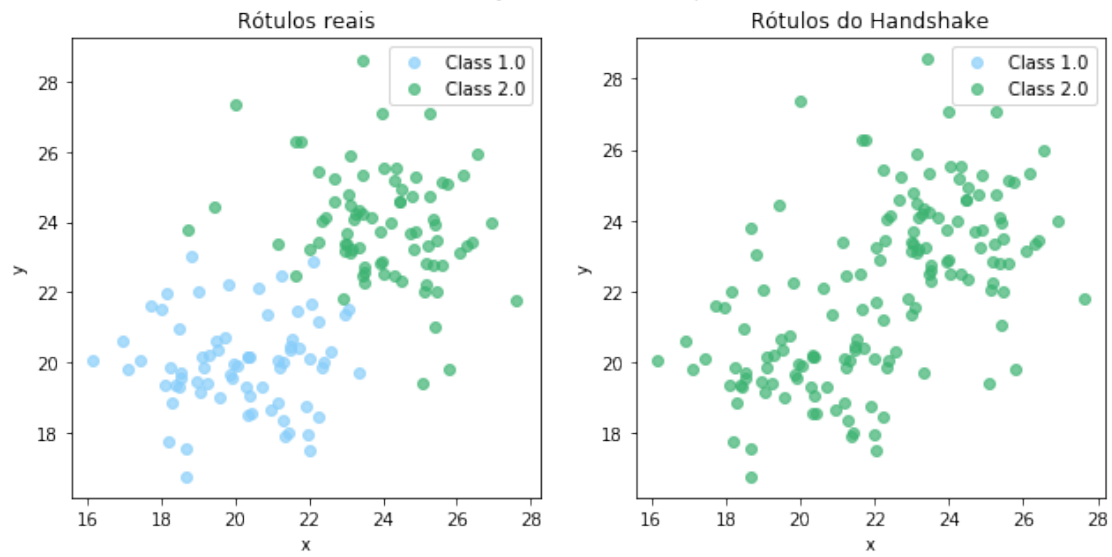
Distribuição dos dados. Step 47



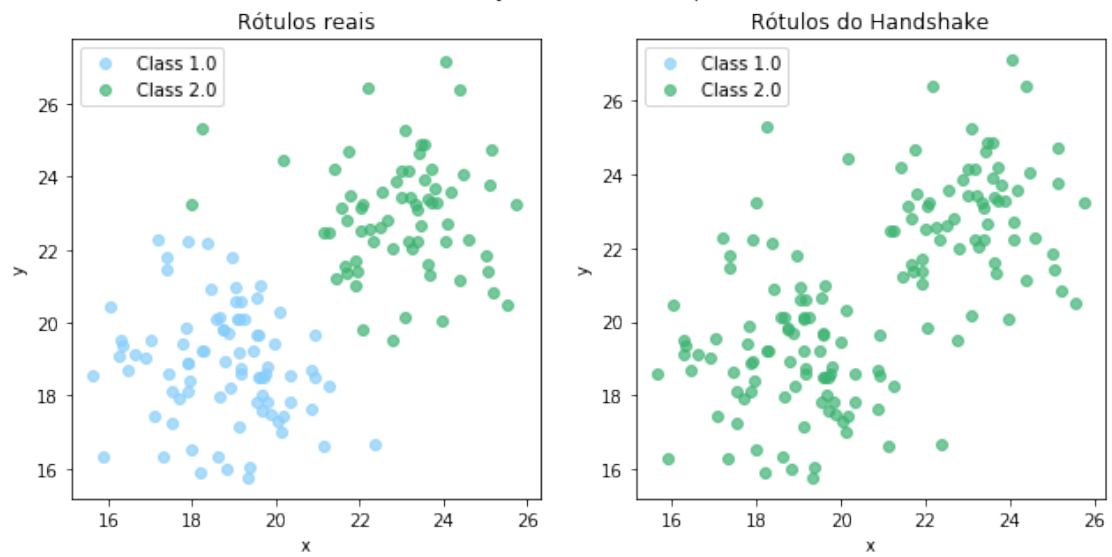
Distribuição dos dados. Step 48



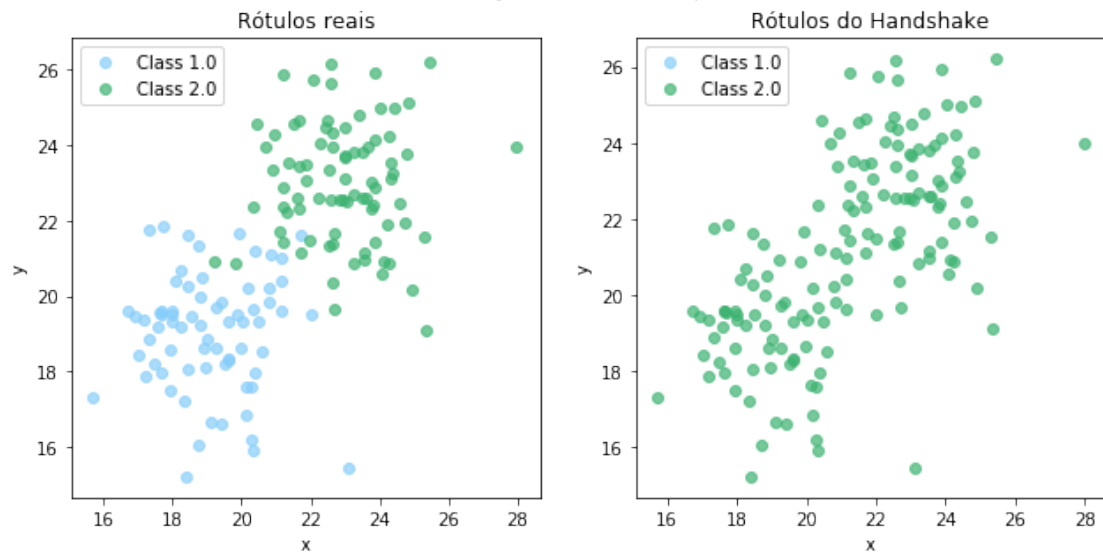
Distribuição dos dados. Step 49



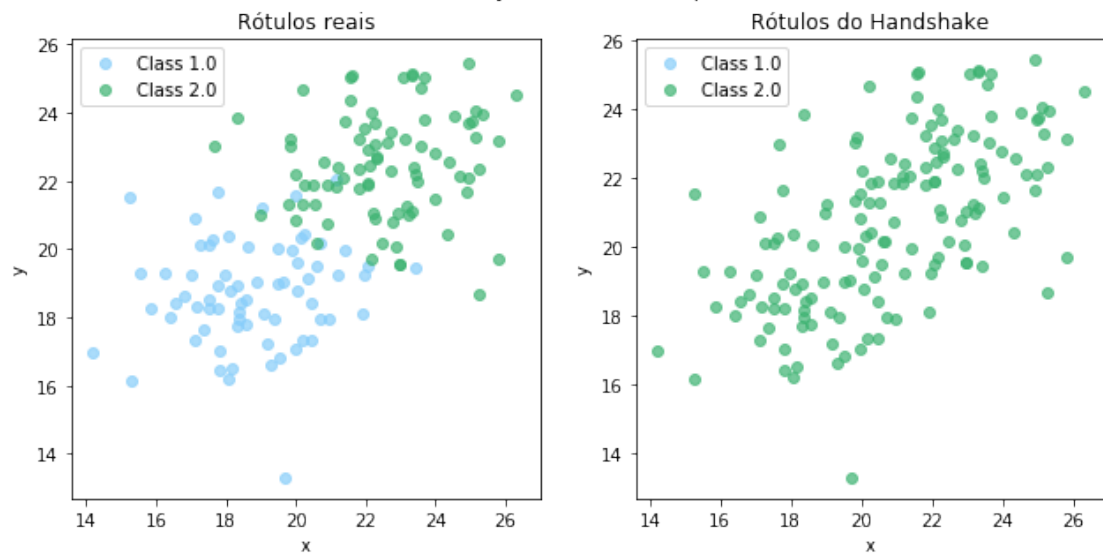
Distribuição dos dados. Step 50



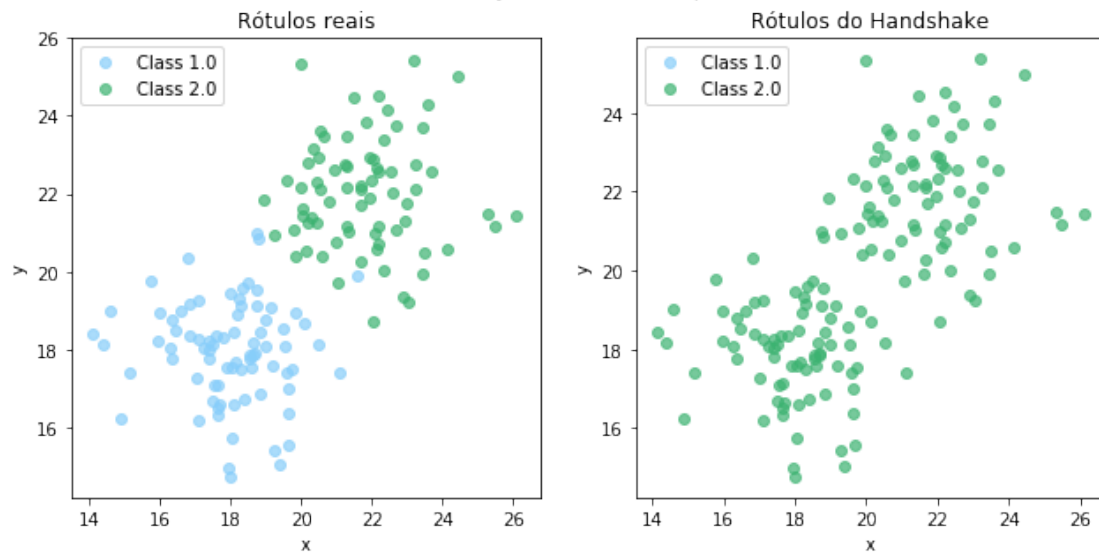
Distribuição dos dados. Step 51



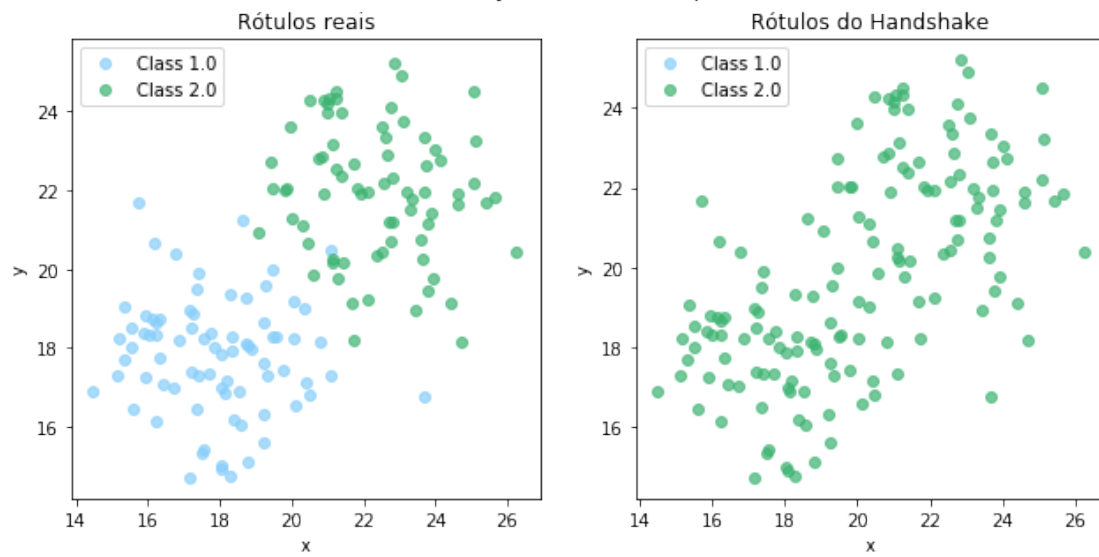
Distribuição dos dados. Step 52



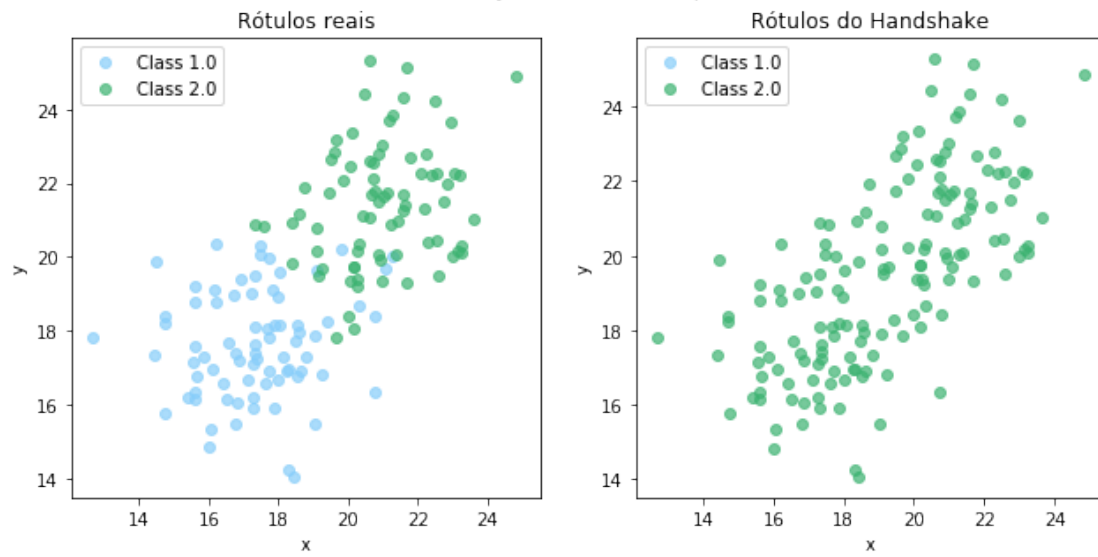
Distribuição dos dados. Step 53



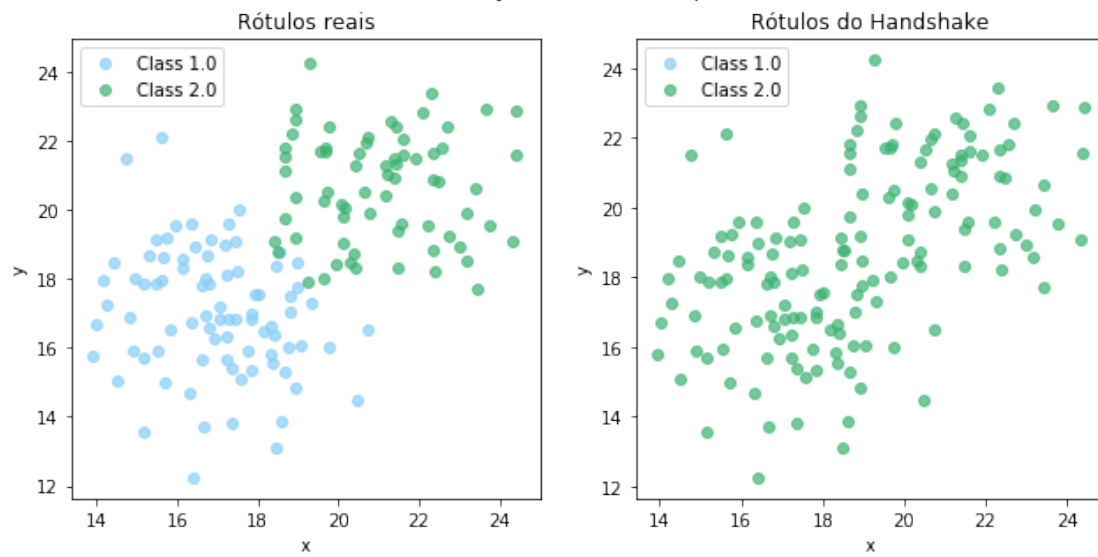
Distribuição dos dados. Step 54



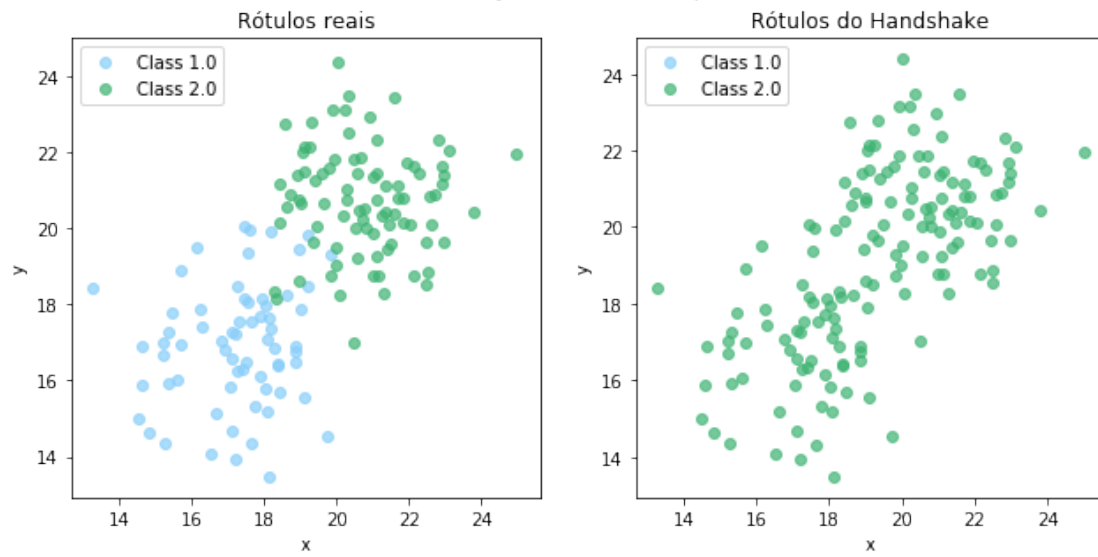
Distribuição dos dados. Step 55



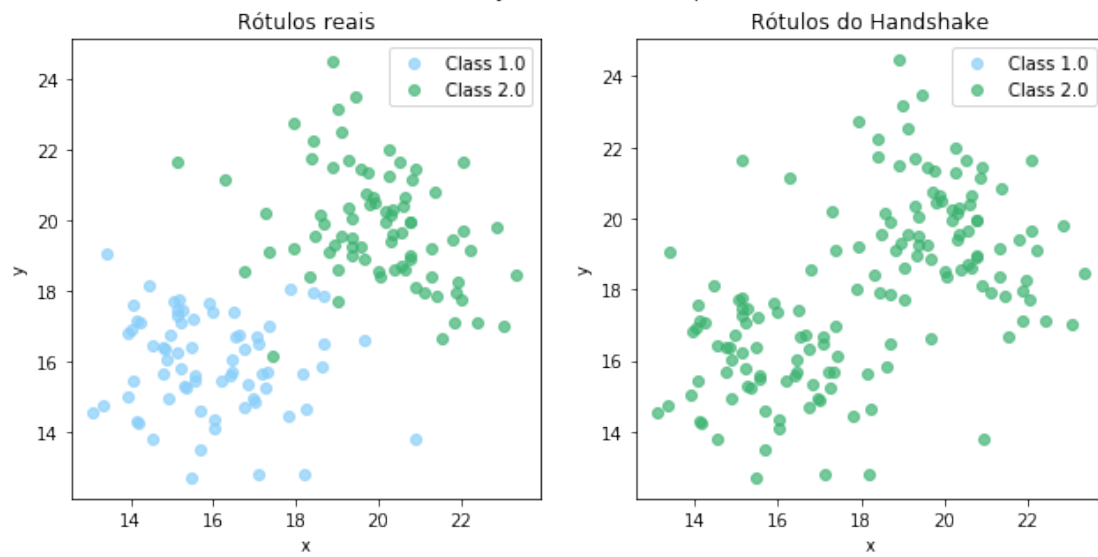
Distribuição dos dados. Step 56



Distribuição dos dados. Step 57



Distribuição dos dados. Step 58



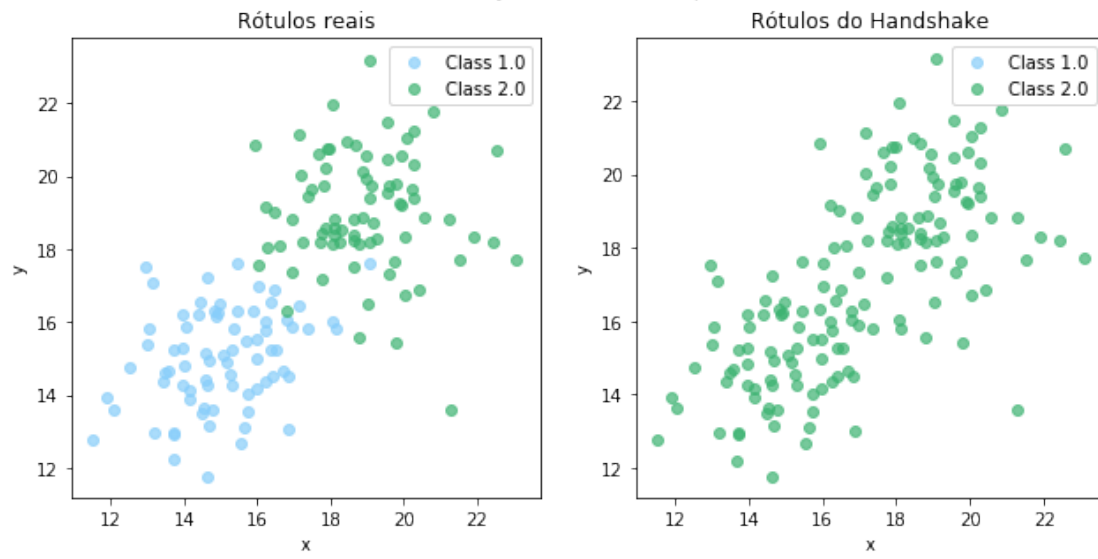
Distribuição dos dados. Step 59



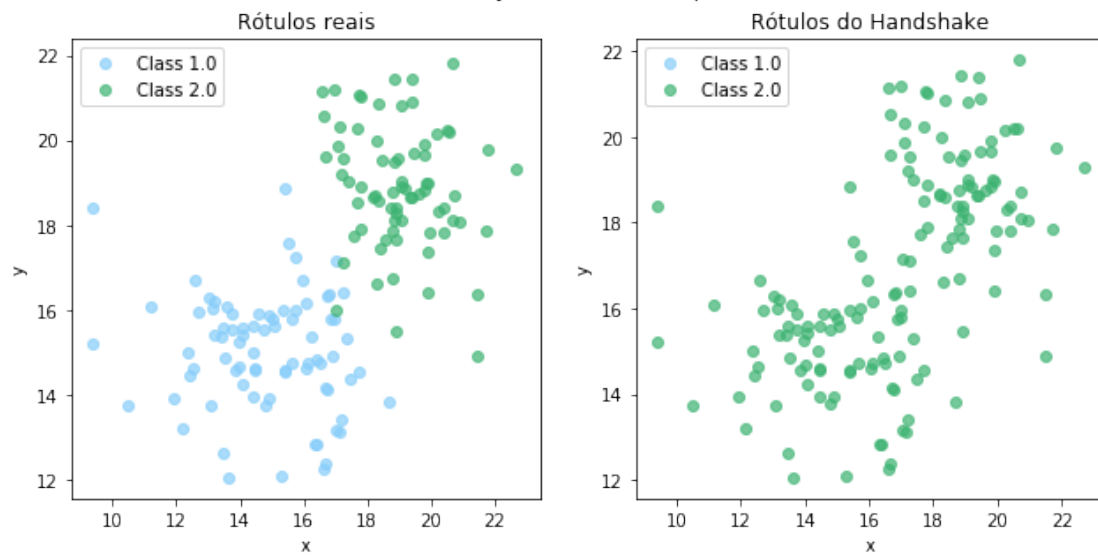
Distribuição dos dados. Step 60



Distribuição dos dados. Step 61

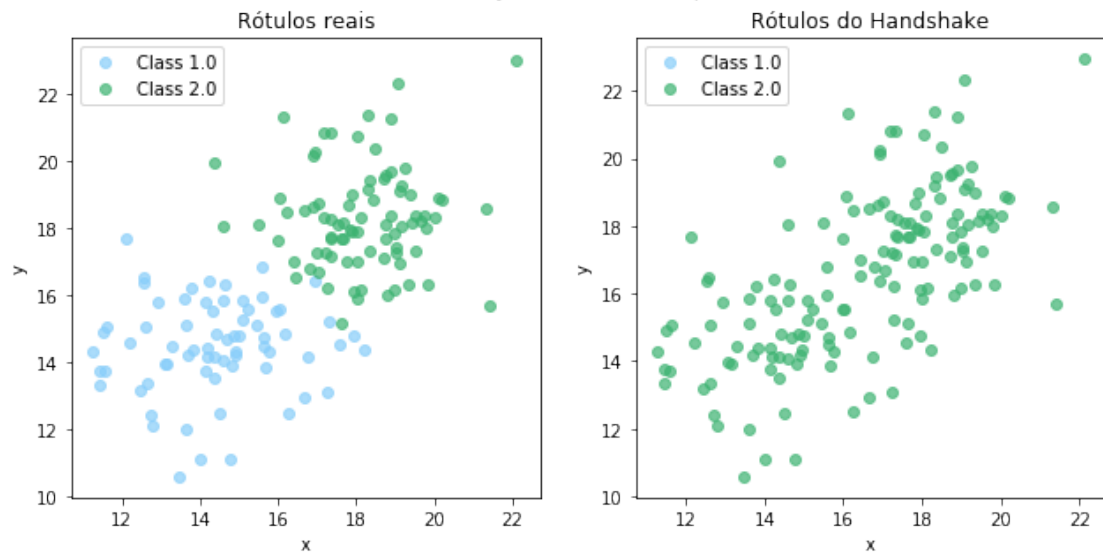


Distribuição dos dados. Step 62

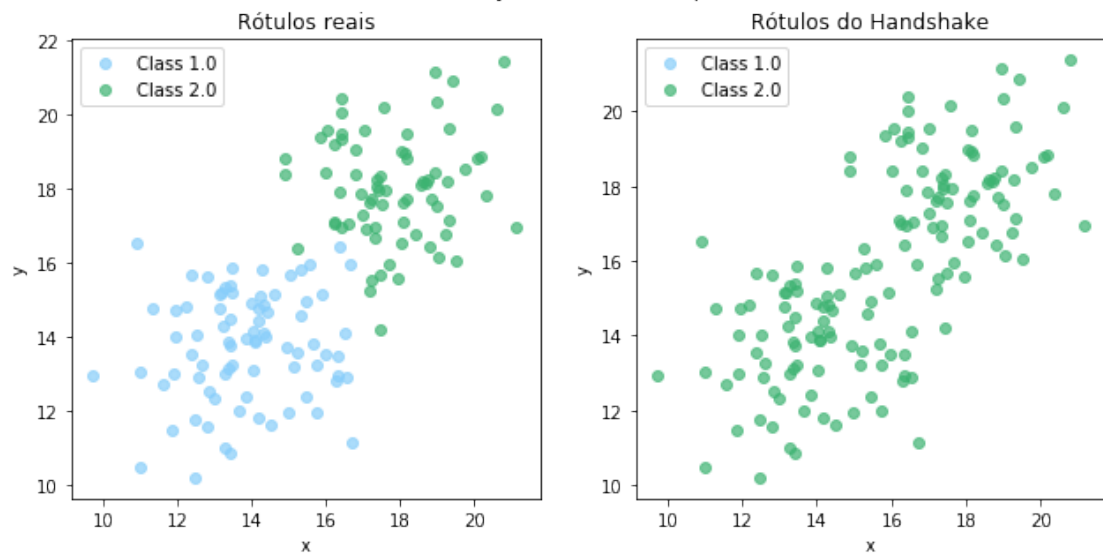




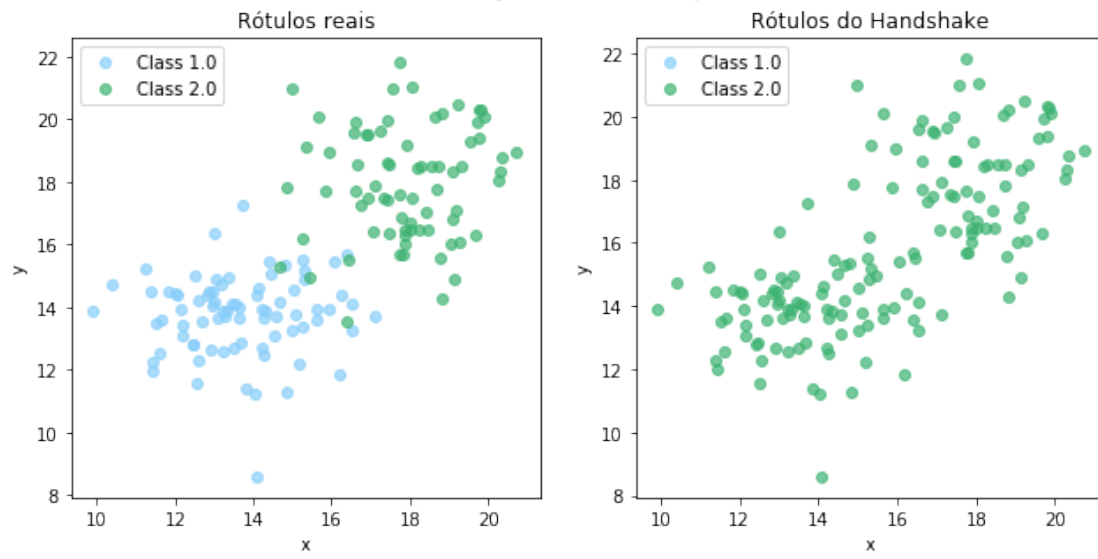
Distribuição dos dados. Step 63



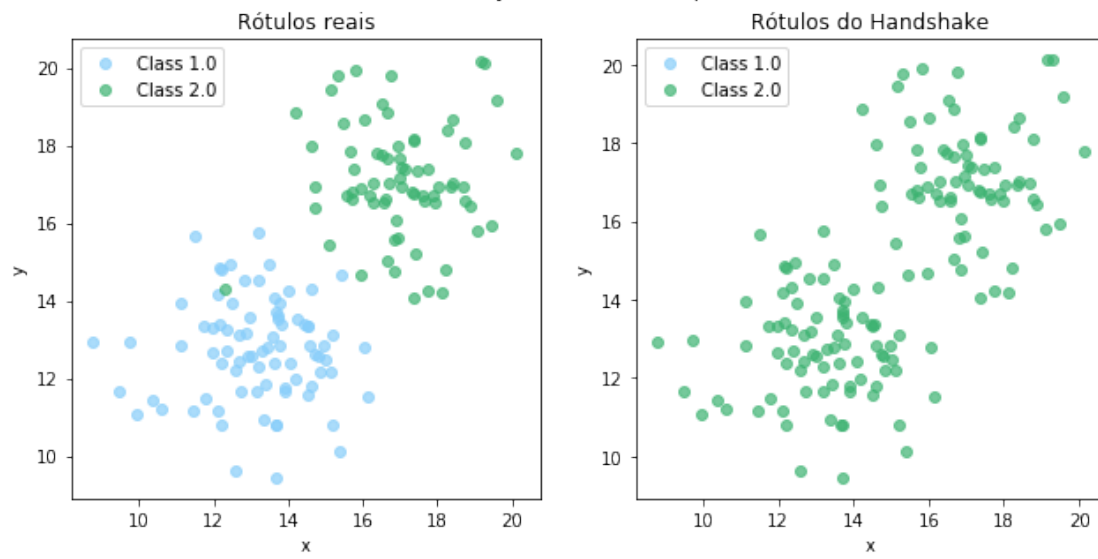
Distribuição dos dados. Step 64



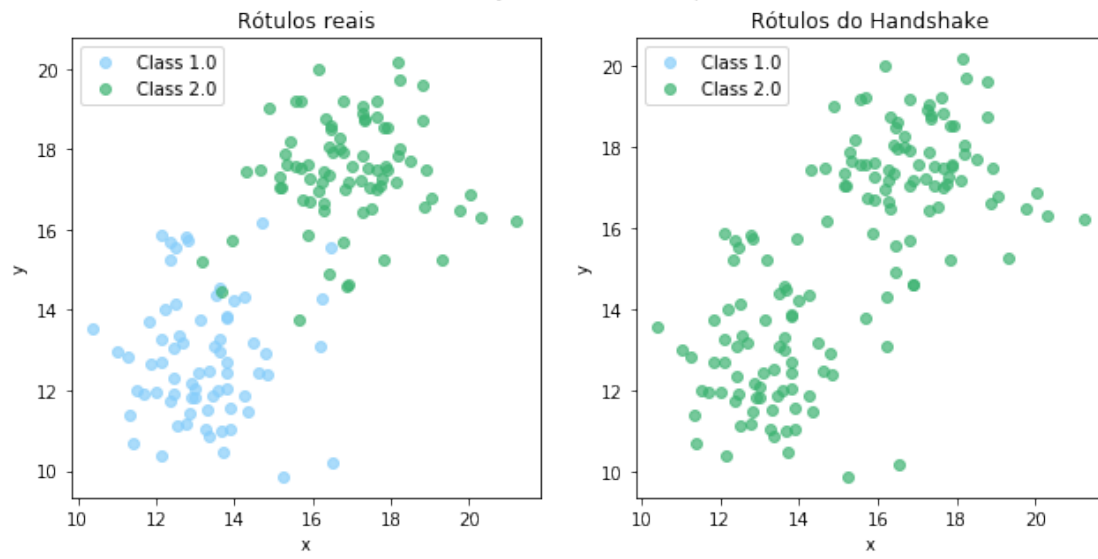
Distribuição dos dados. Step 65



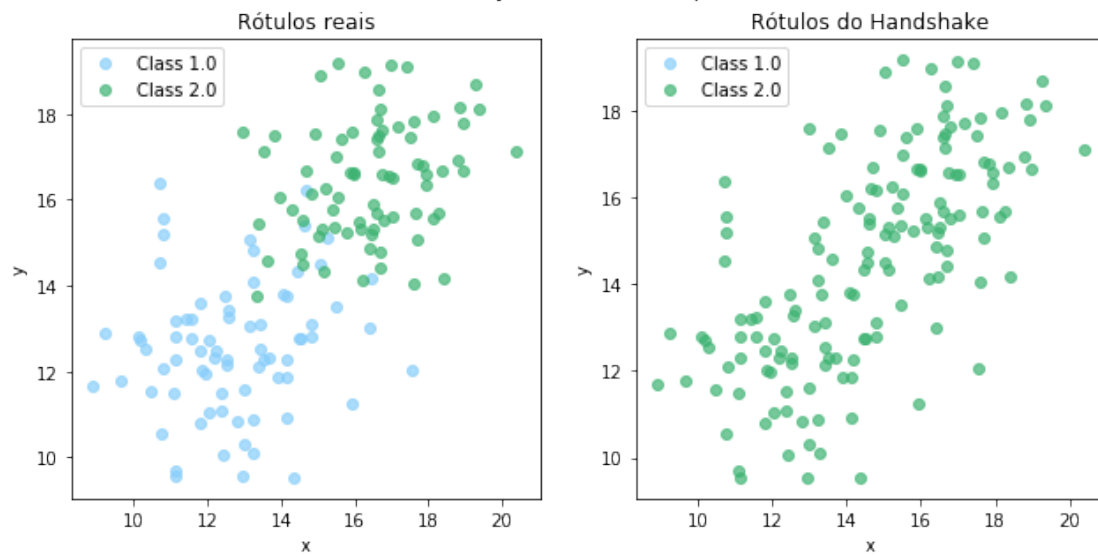
Distribuição dos dados. Step 66



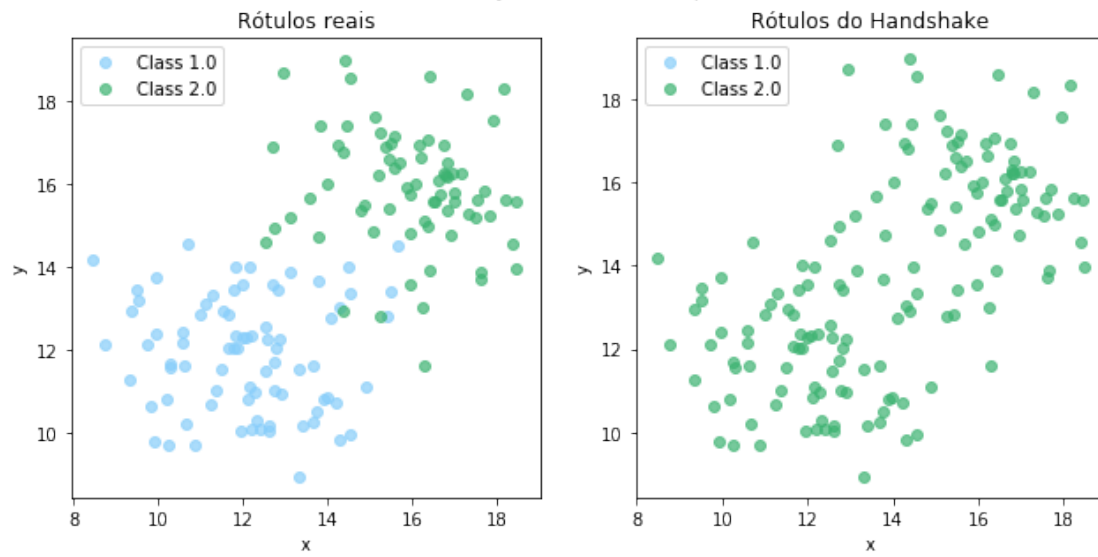
Distribuição dos dados. Step 67



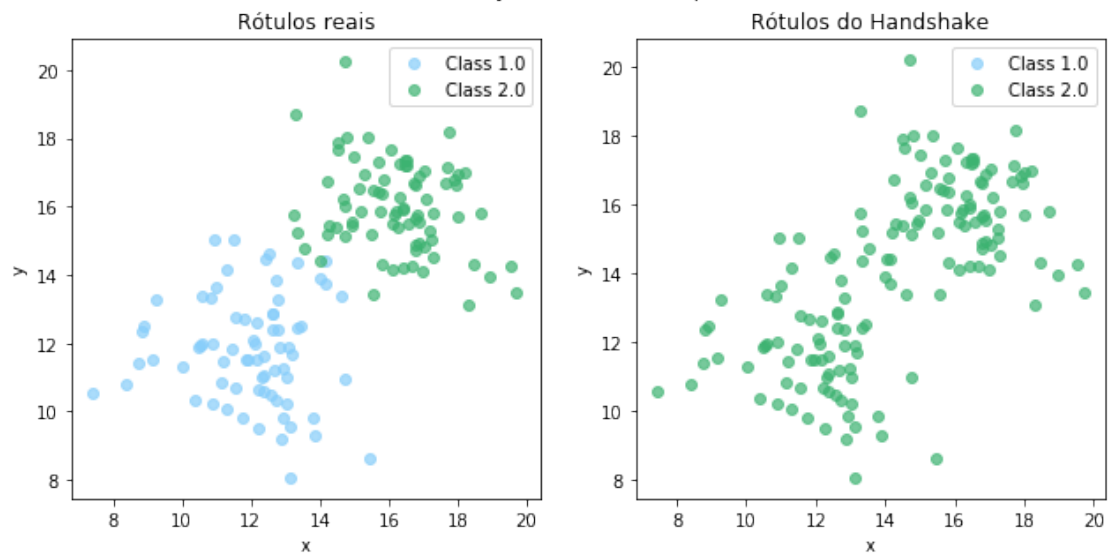
Distribuição dos dados. Step 68



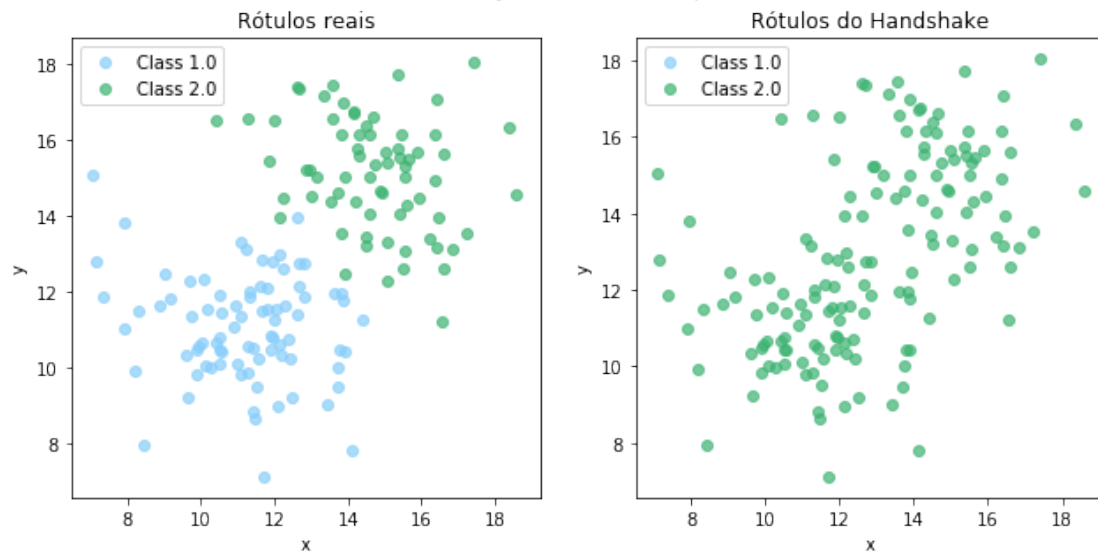
Distribuição dos dados. Step 69



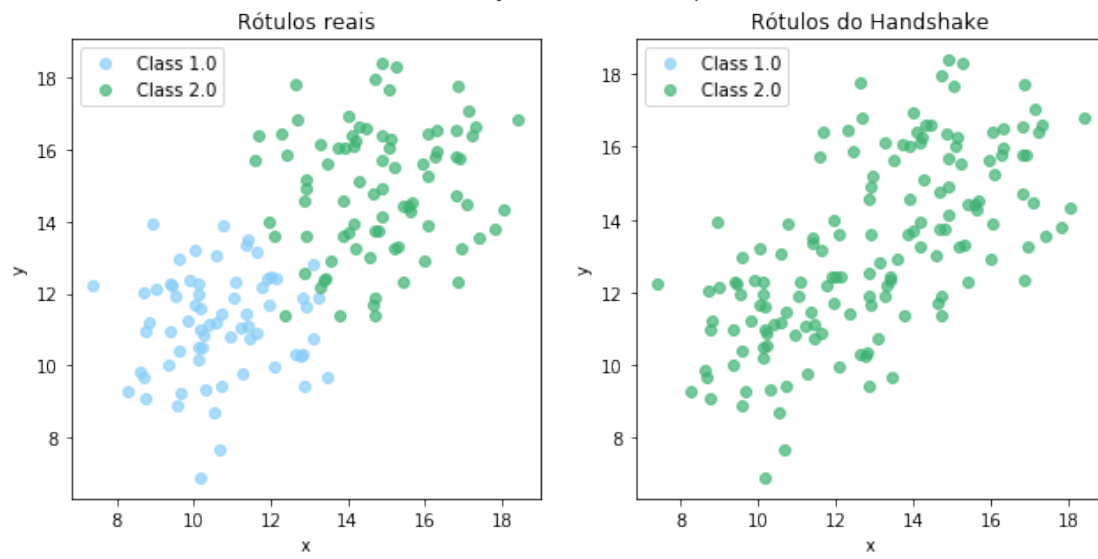
Distribuição dos dados. Step 70



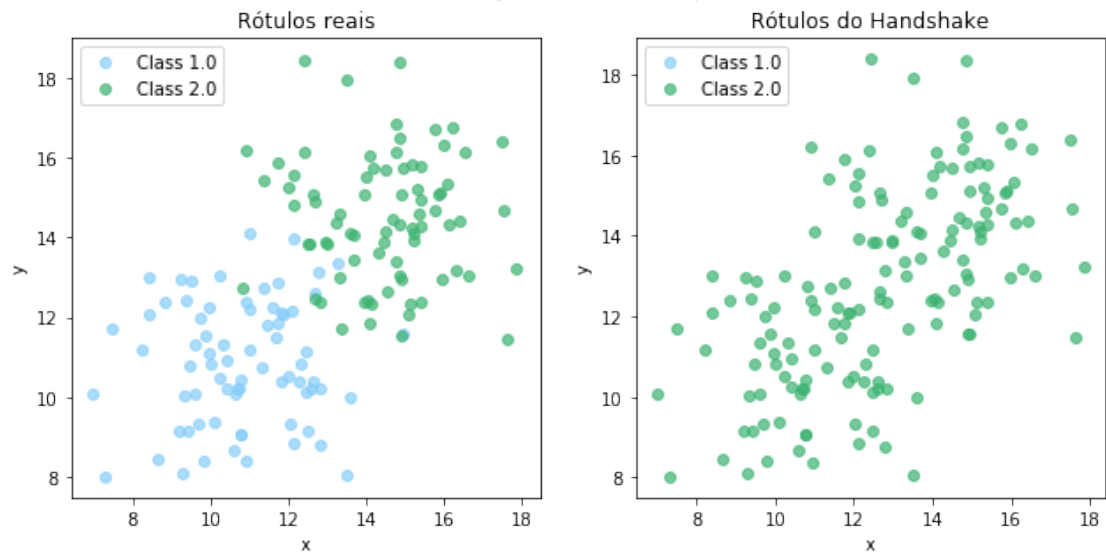
Distribuição dos dados. Step 71



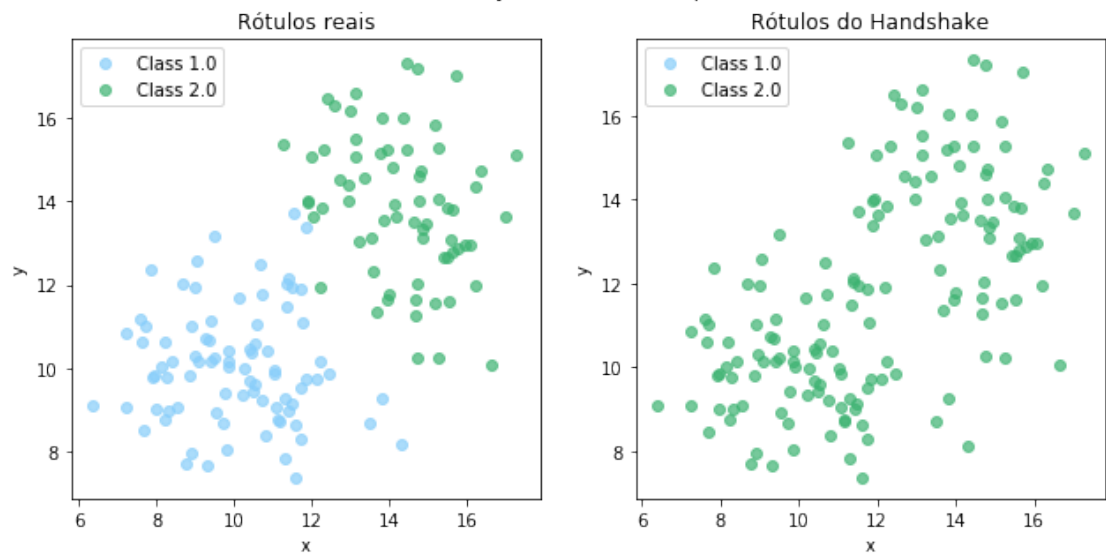
Distribuição dos dados. Step 72



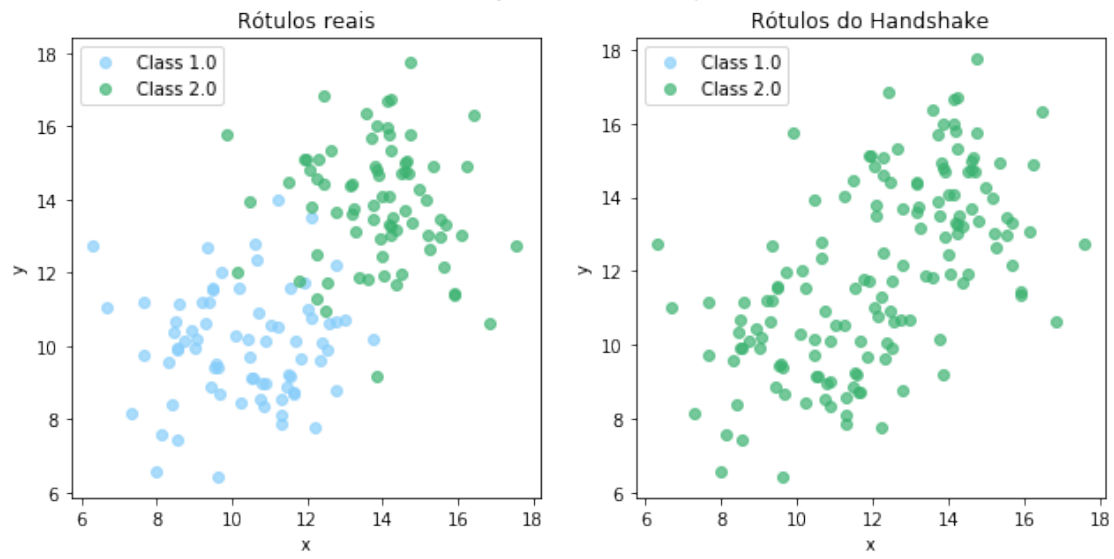
Distribuição dos dados. Step 73



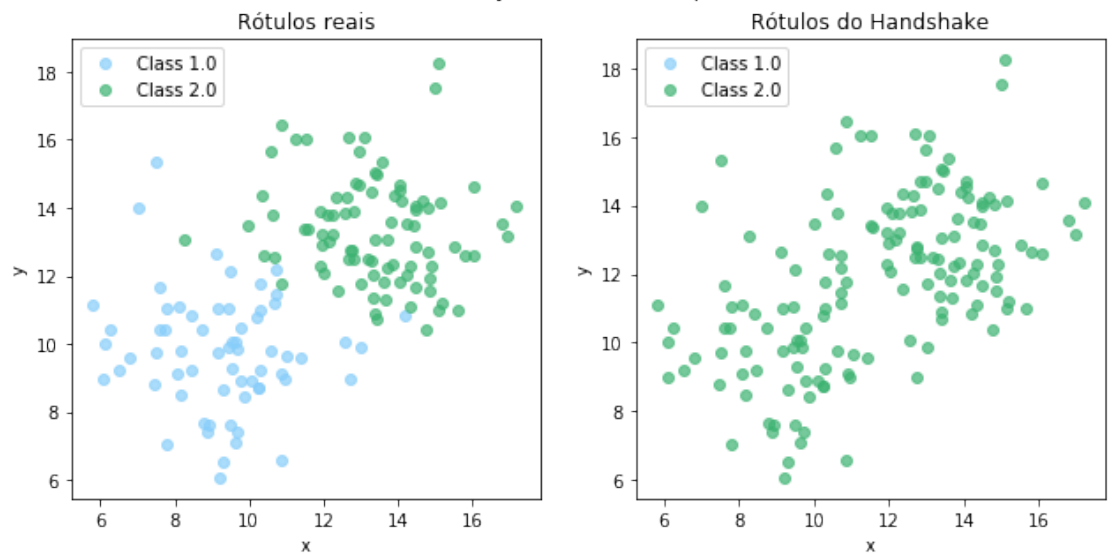
Distribuição dos dados. Step 74



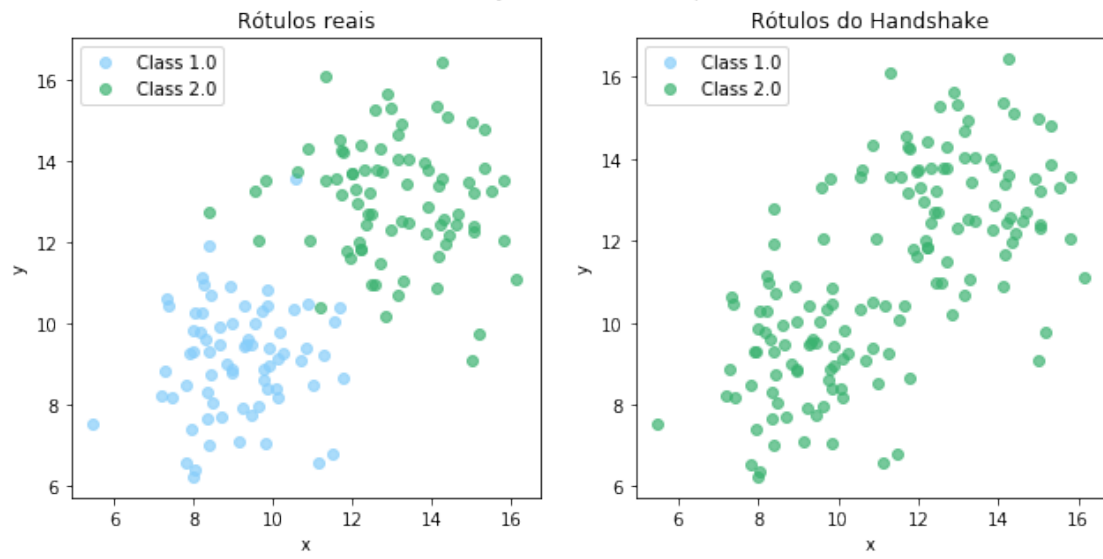
Distribuição dos dados. Step 75



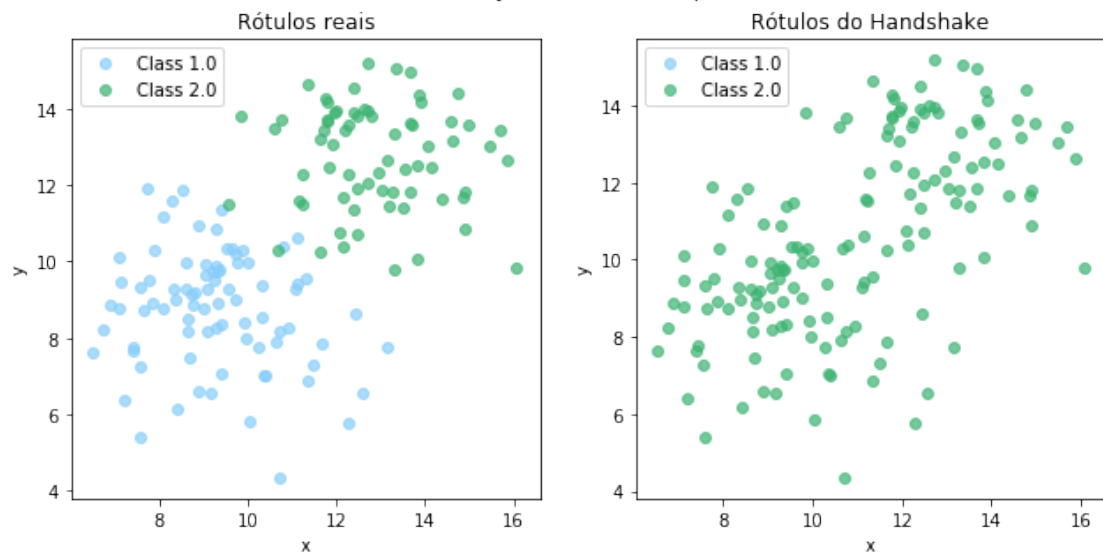
Distribuição dos dados. Step 76



Distribuição dos dados. Step 77

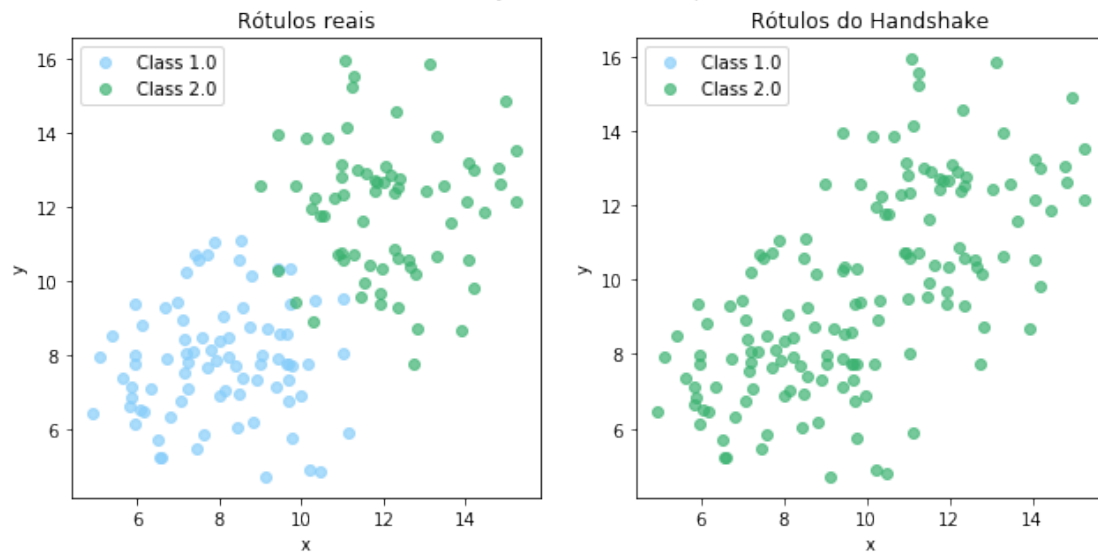


Distribuição dos dados. Step 78

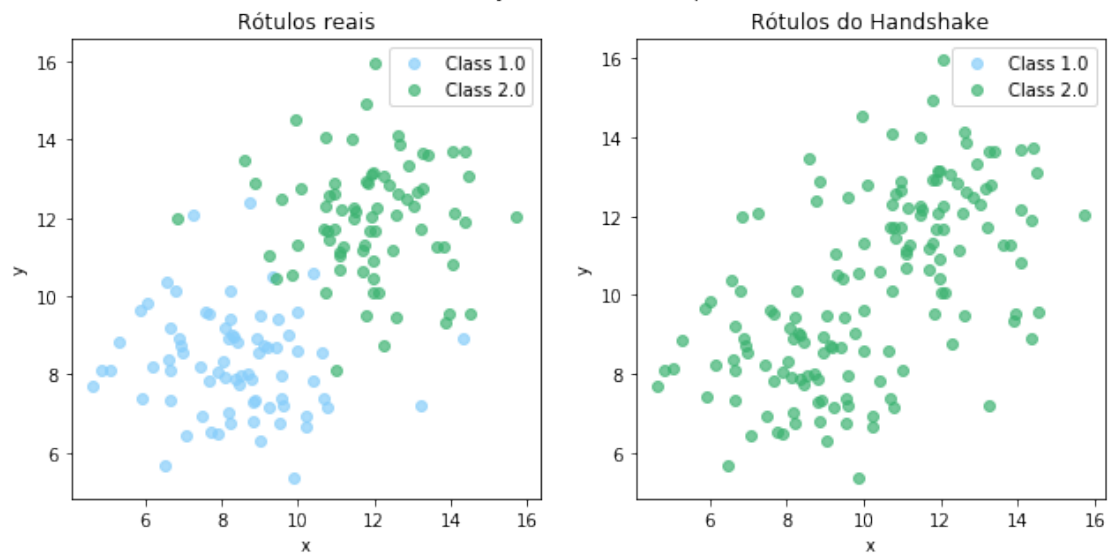




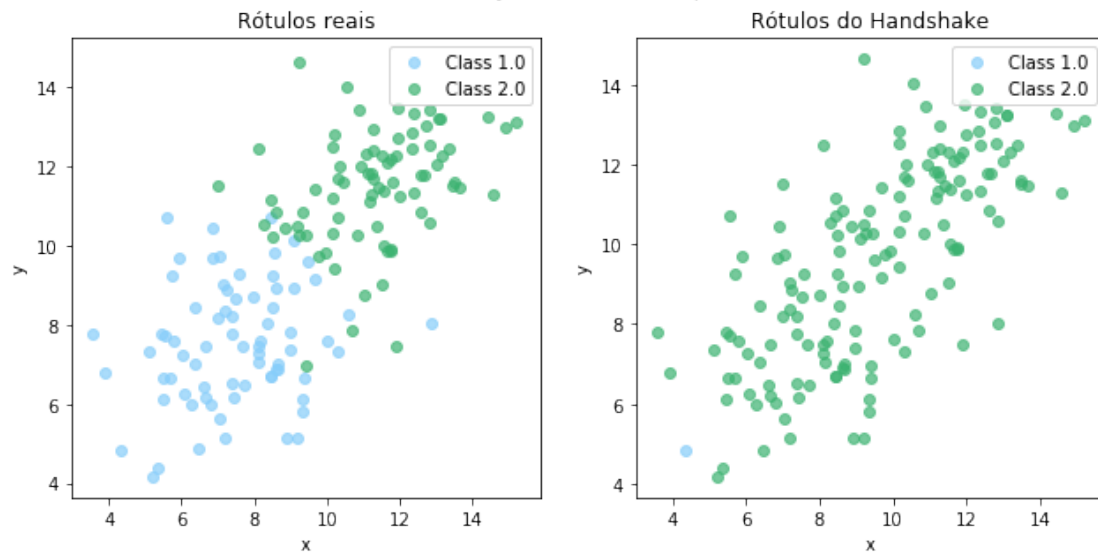
Distribuição dos dados. Step 79



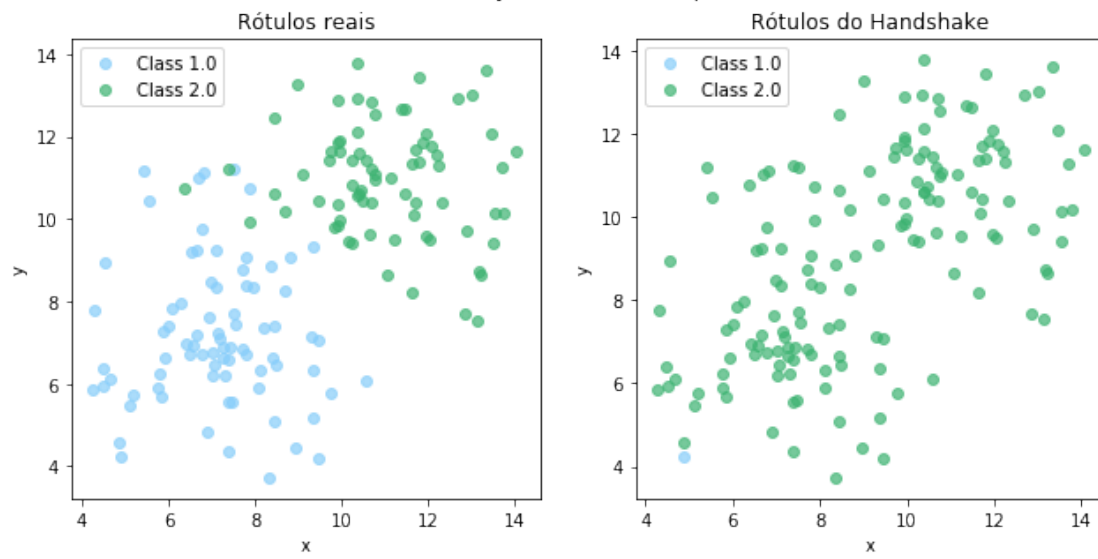
Distribuição dos dados. Step 80



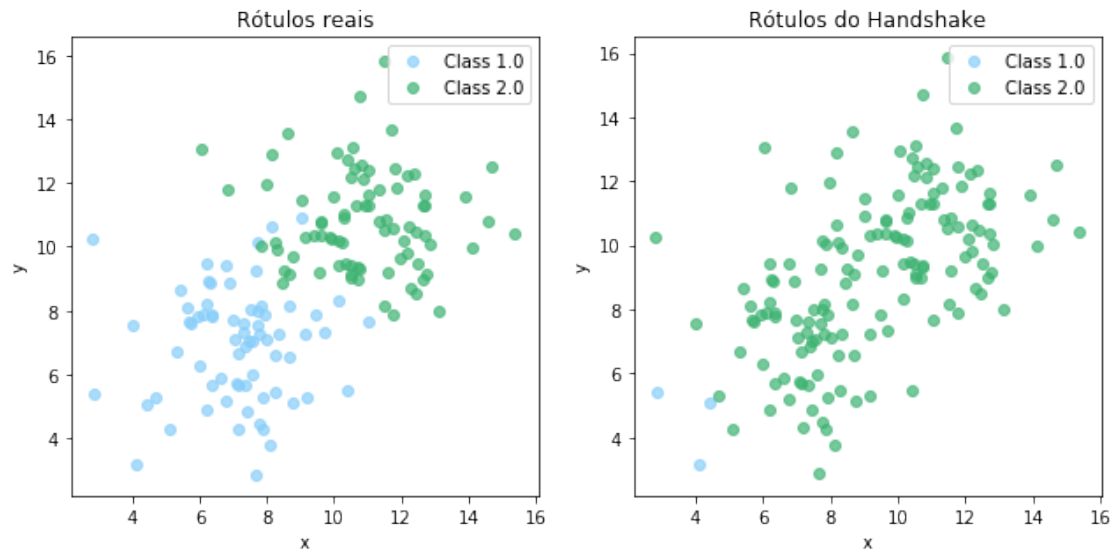
Distribuição dos dados. Step 81



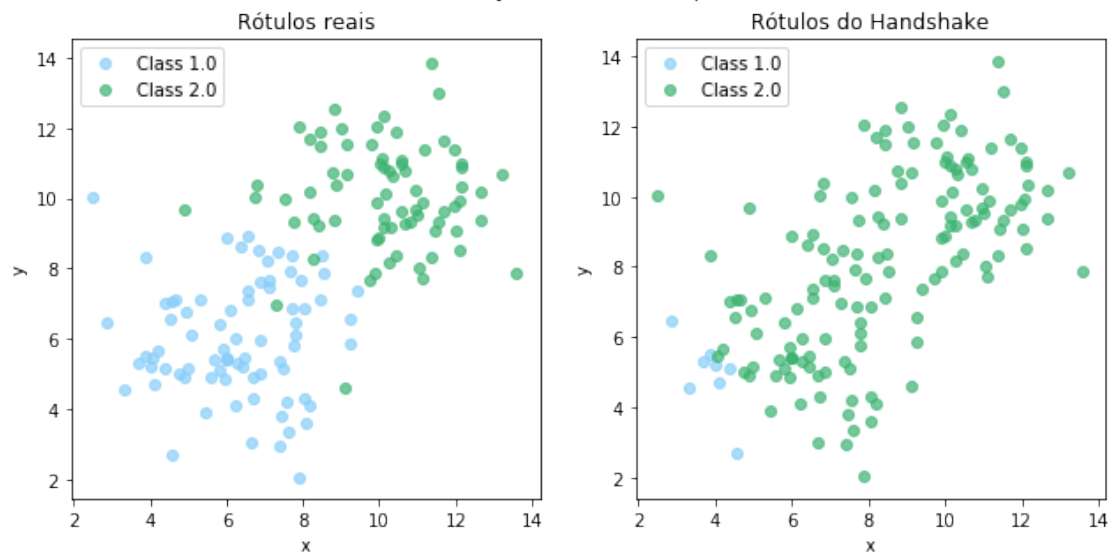
Distribuição dos dados. Step 82



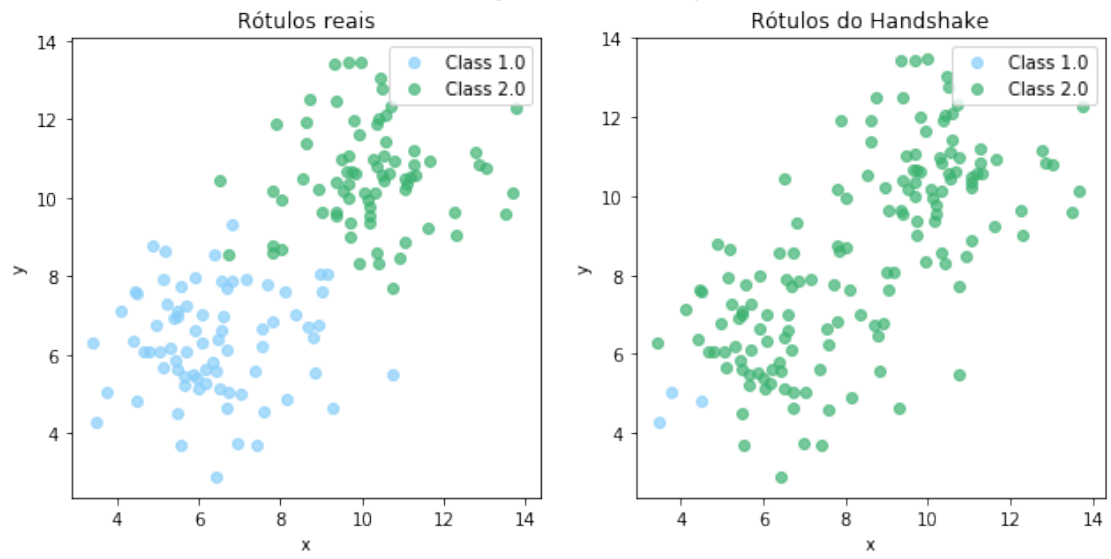
Distribuição dos dados. Step 83



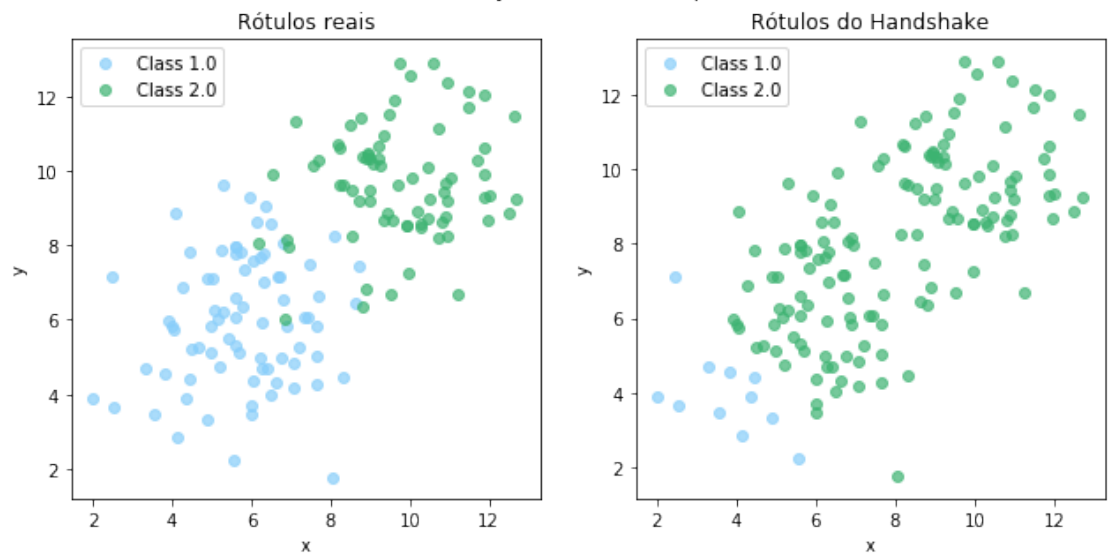
Distribuição dos dados. Step 84



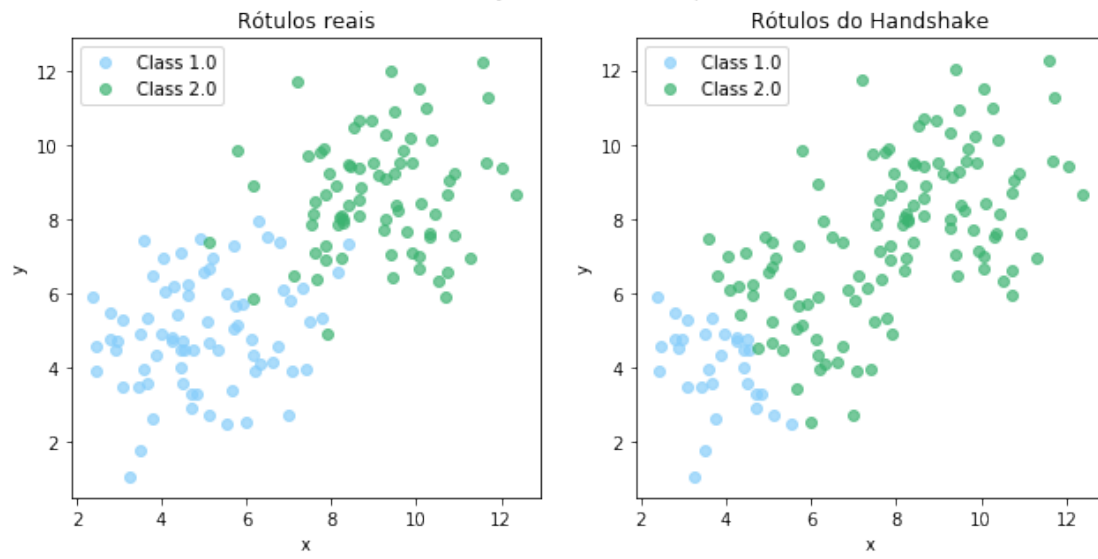
Distribuição dos dados. Step 85



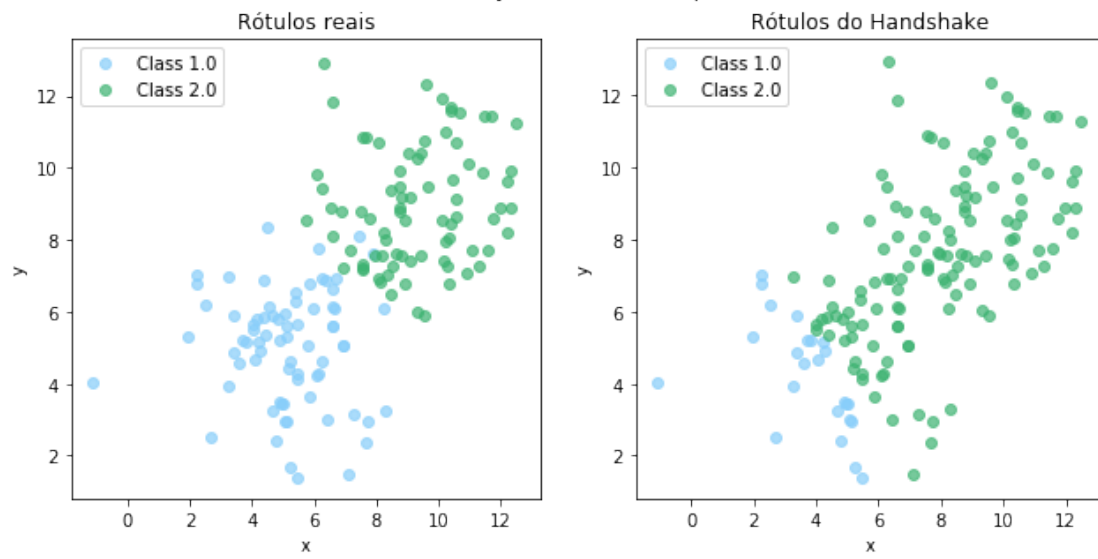
Distribuição dos dados. Step 86



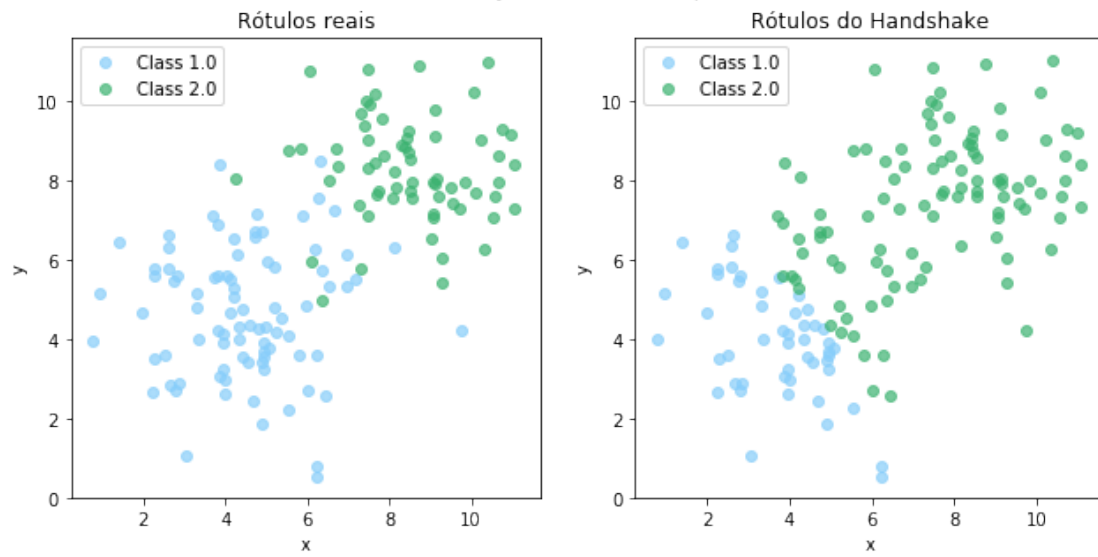
Distribuição dos dados. Step 87



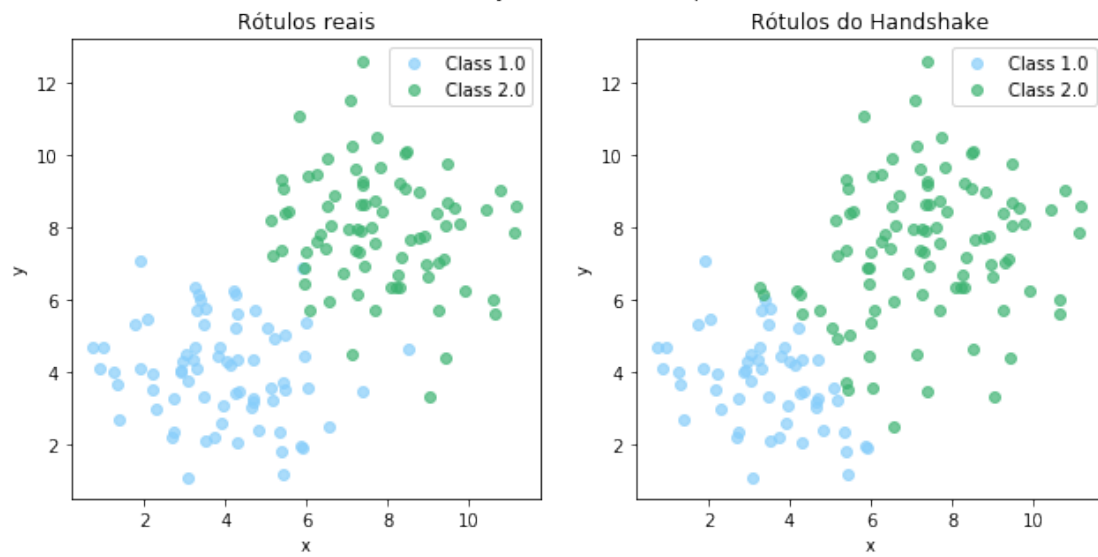
Distribuição dos dados. Step 88



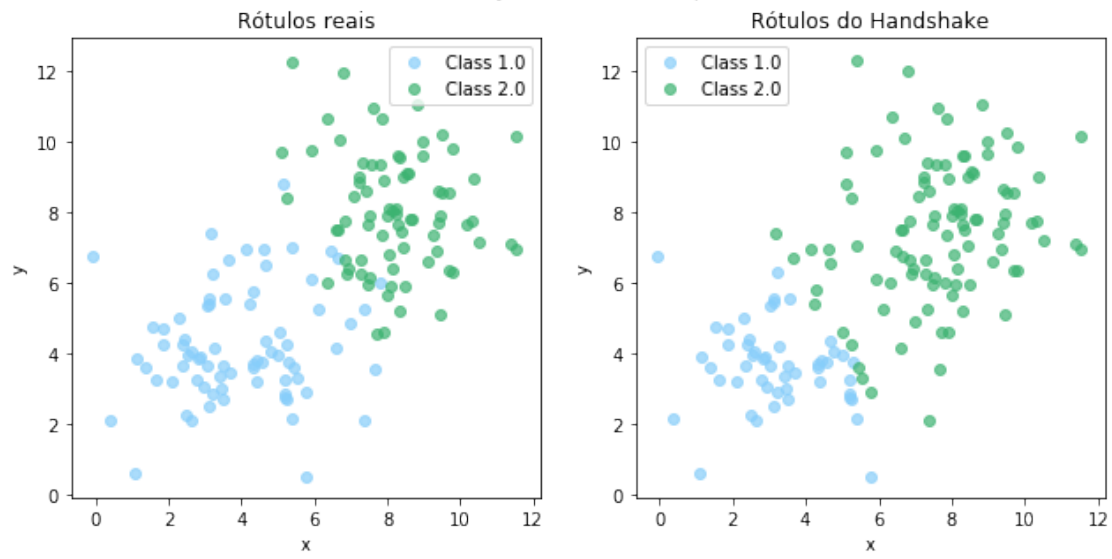
Distribuição dos dados. Step 89



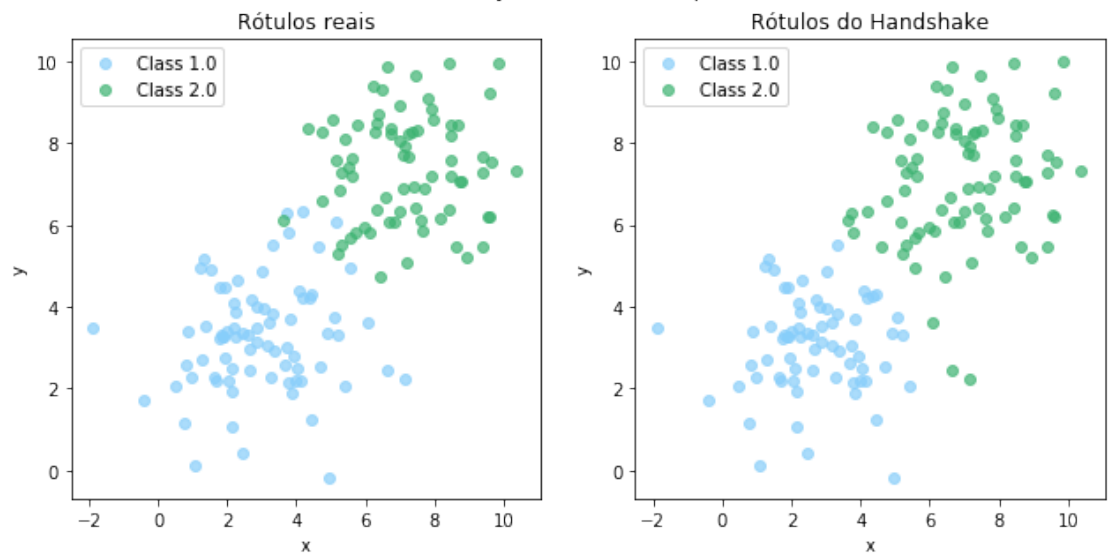
Distribuição dos dados. Step 90



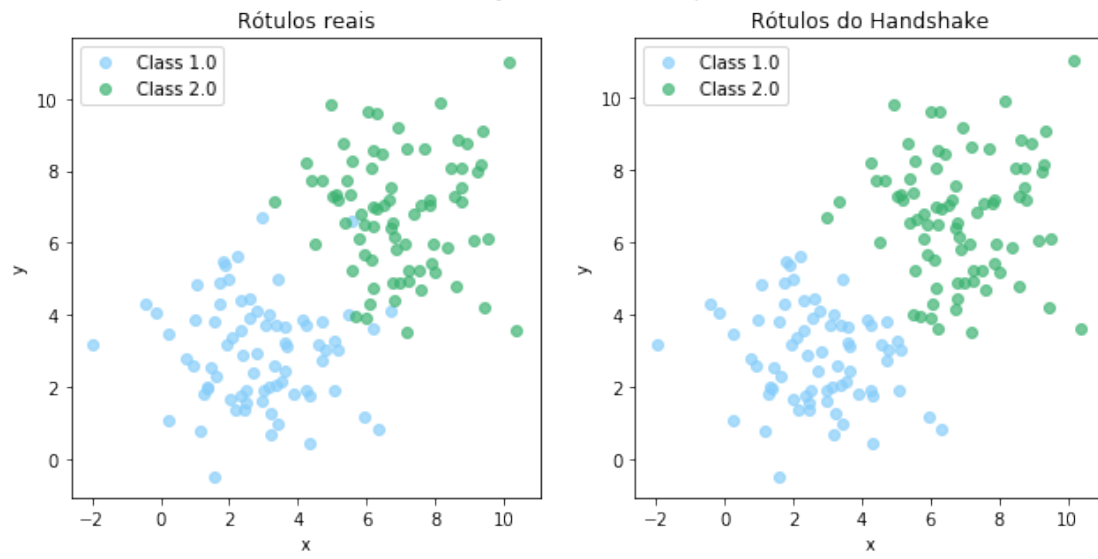
Distribuição dos dados. Step 91



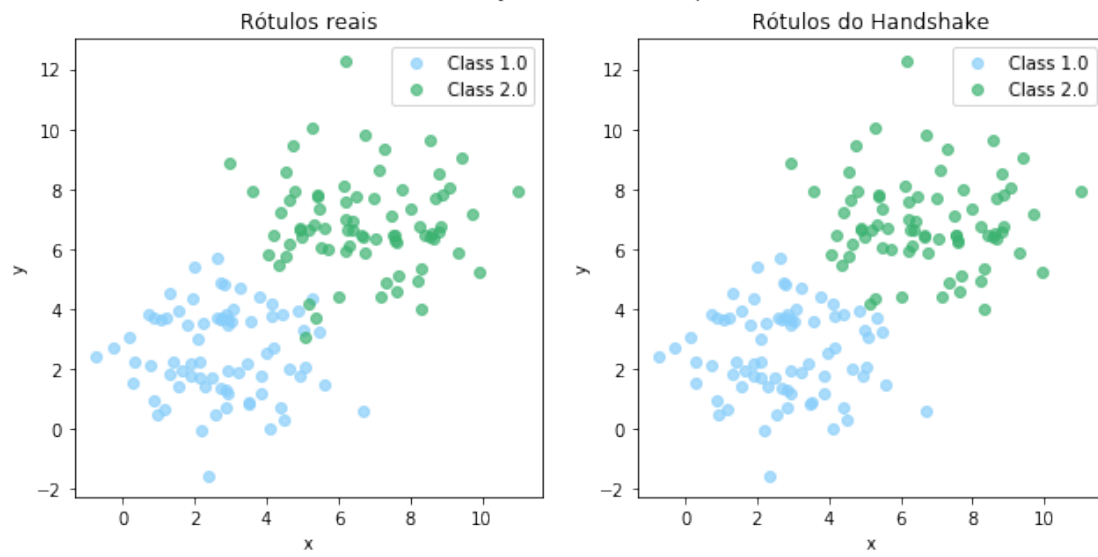
Distribuição dos dados. Step 92



Distribuição dos dados. Step 93

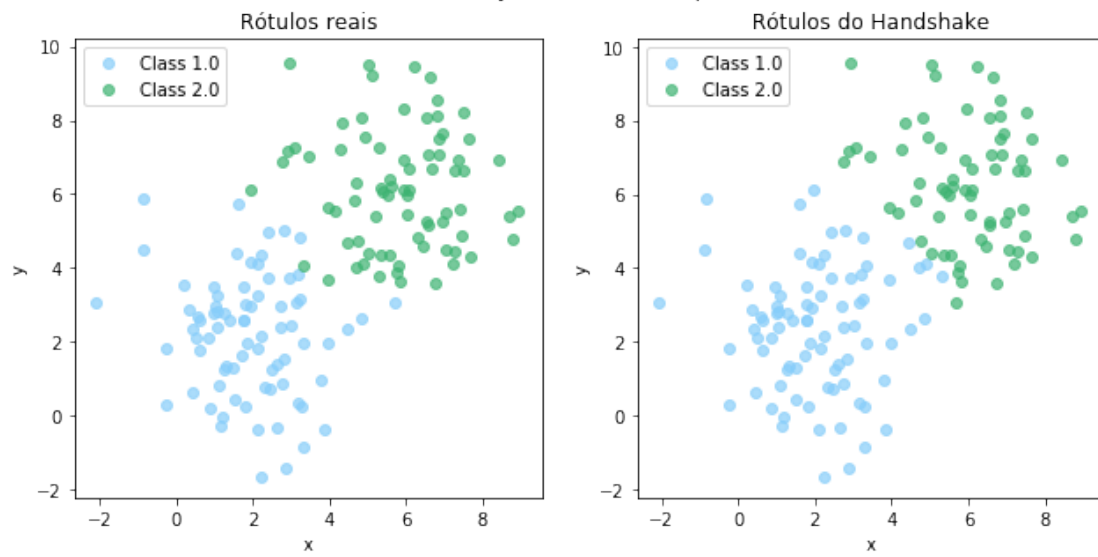


Distribuição dos dados. Step 94

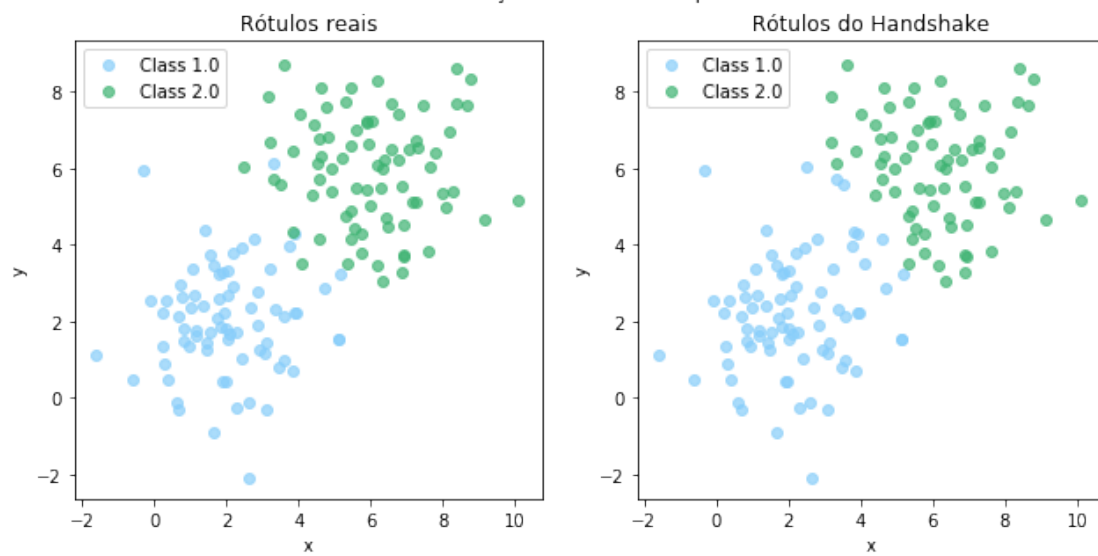




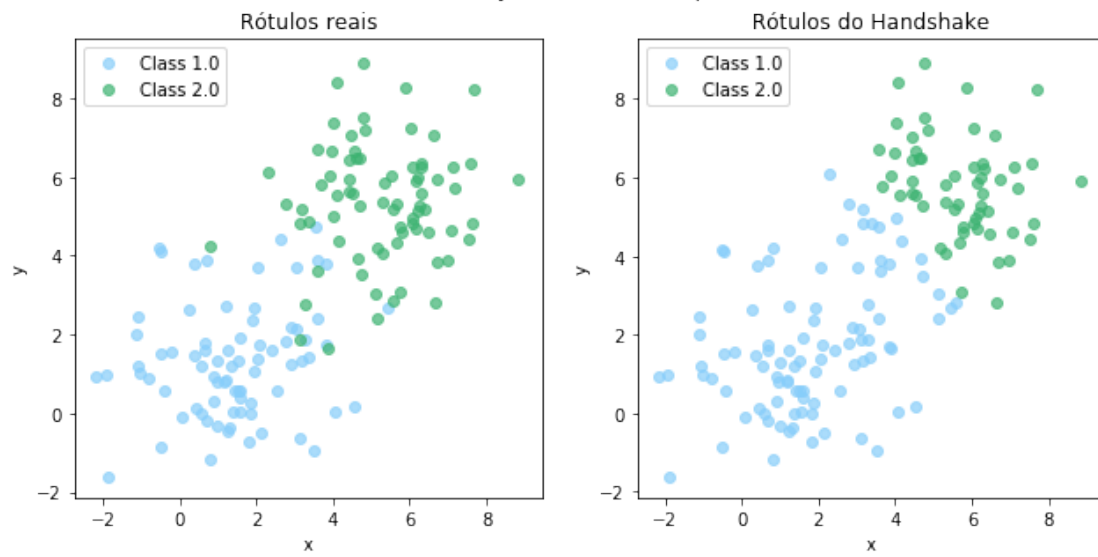
Distribuição dos dados. Step 95



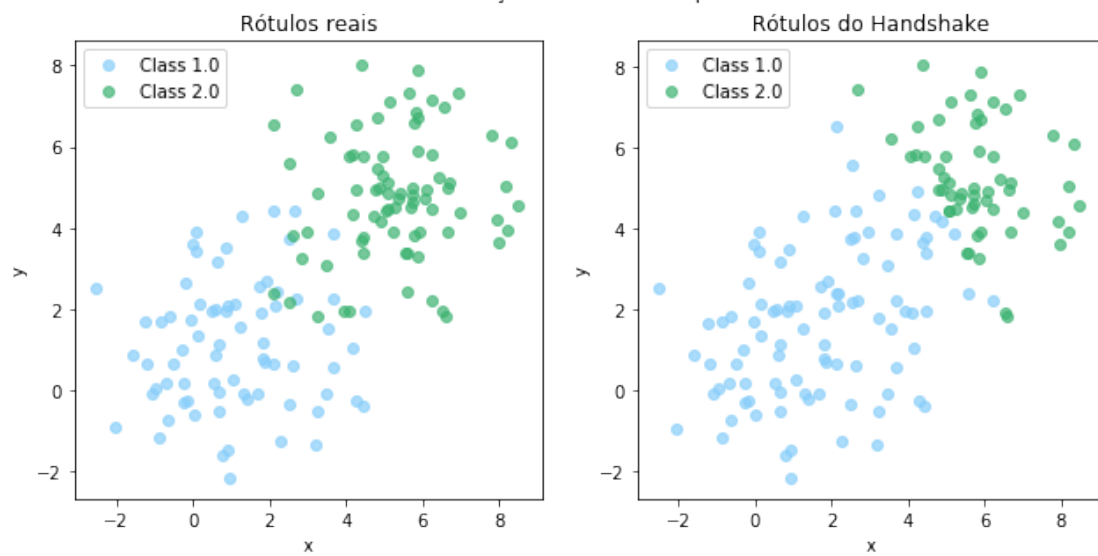
Distribuição dos dados. Step 96



Distribuição dos dados. Step 97



Distribuição dos dados. Step 98



### Distribuição dos dados. Step 99

