Laboratorim 11 – klasyfikacja binarna – wskazówki

https://www.learndatasci.com/glossary/binary-classification/

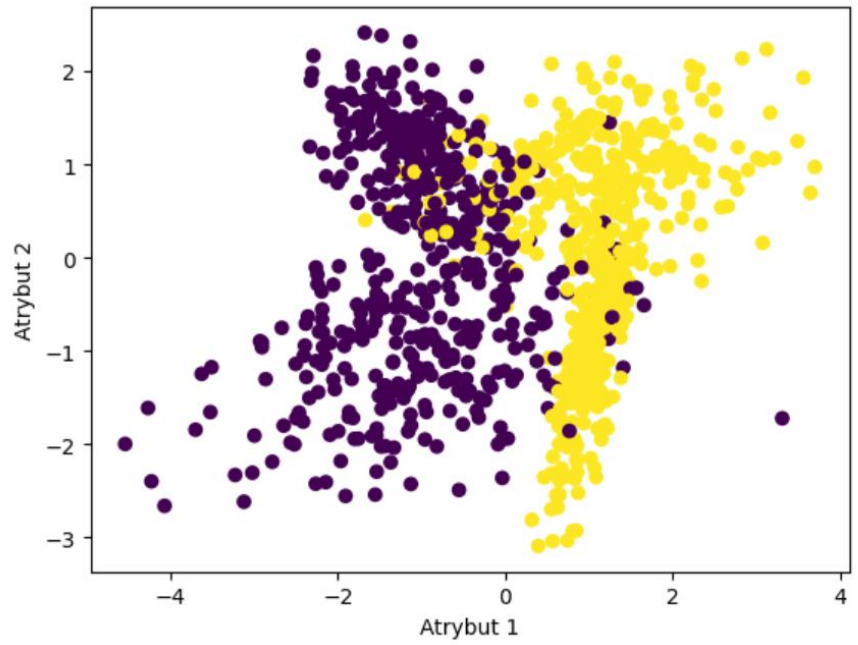
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
from sklearn.datasets import make_classification
from sklearn.model_selection import train_test_split
from sklearn.naive_bayes import GaussianNB
from sklearn.discriminant_analysis import QuadraticDiscriminantAnalysis
from sklearn.neighbors import KNeighborsClassifier
from sklearn.svm import SVC
from sklearn.tree import DecisionTreeClassifier
from sklearn import metrics
import time
from sklearn.metrics import roc_curve
```

Ad.1

1. Generowanie przykładowych danych

```
X, y = make_classification(n_samples=1000, n_features=2, n_informative=2, n_redundant=0, n_clusters_per_class=2)
```

2. Wizualizacja danych



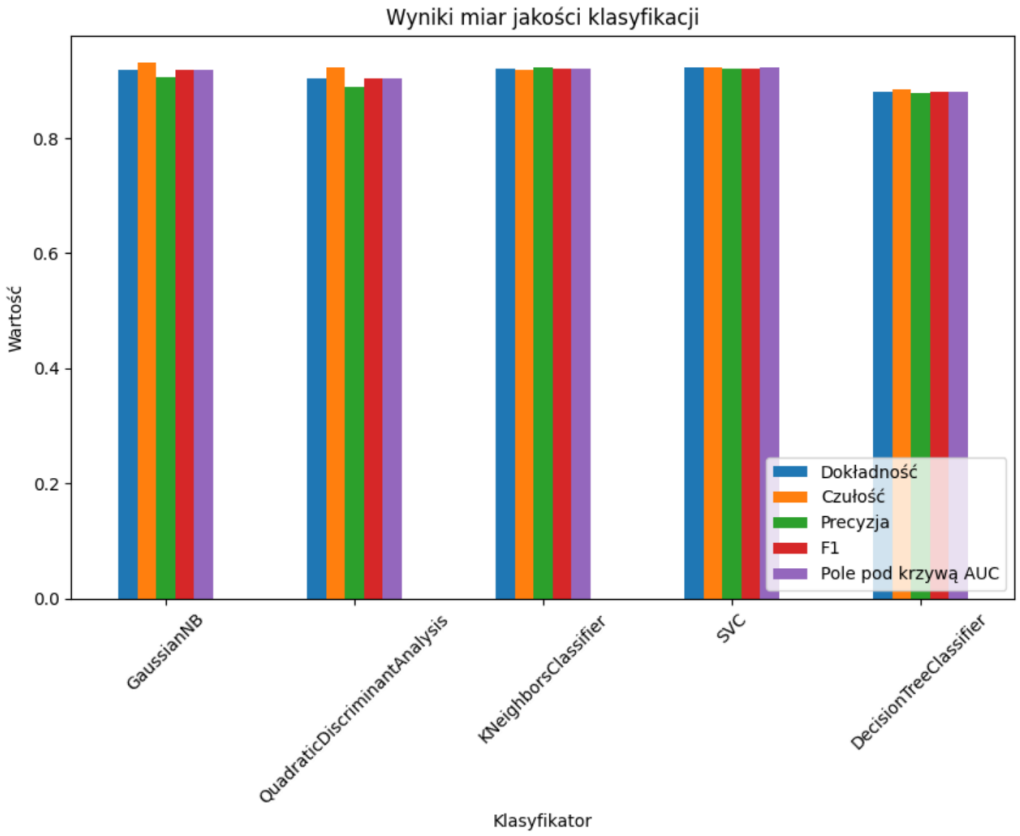
3. Opis jakości miar klasyfikacji

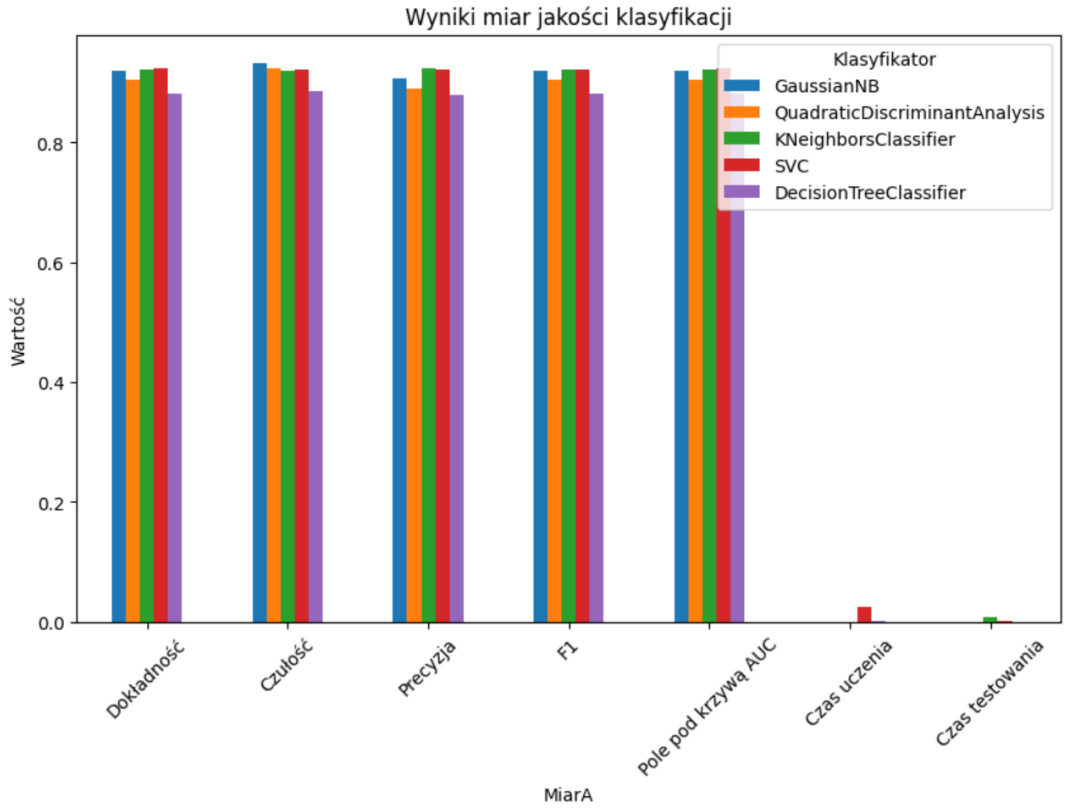
https://medium.com/@vidalwadi11/accuracy-precision-recall-f1-score-loss-and-applications-of-machine-learning-learning-as-i-c6b1720e09d9

https://pl.wikipedia.org/wiki/Krzywa_ROC

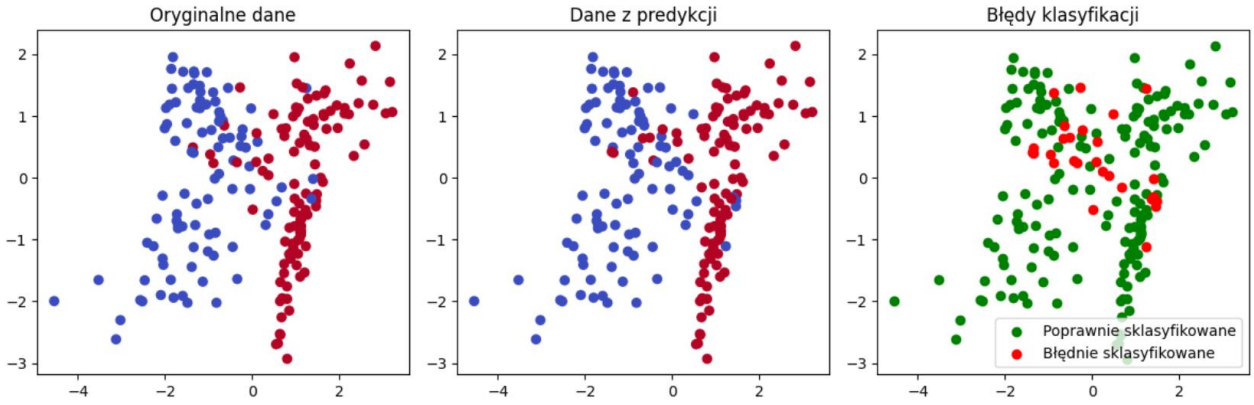
https://towardsdatascience.com/understanding-auc-roc-curve-68b2303cc9c5

4. Wizualizacja zebranych i uśrednionych wyników

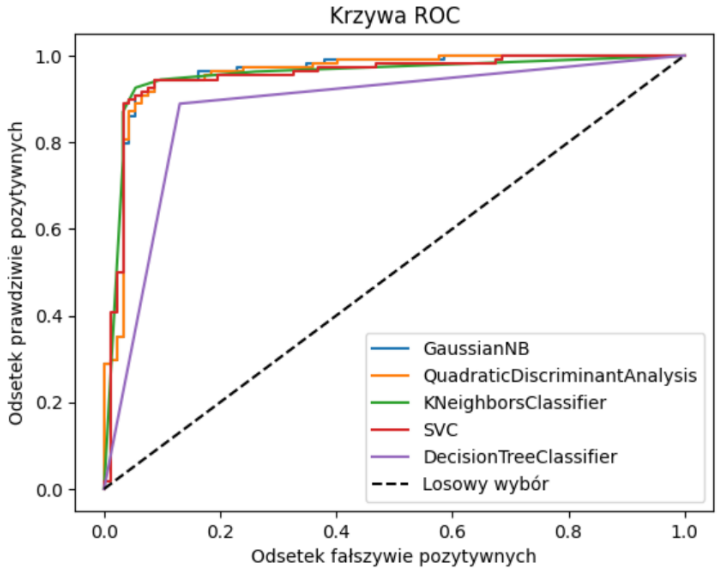




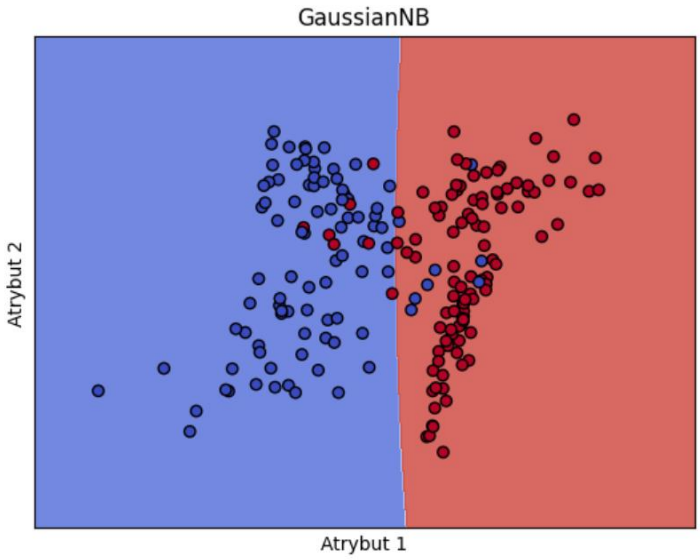
5. Wizualizacja błędów klasyfikacji

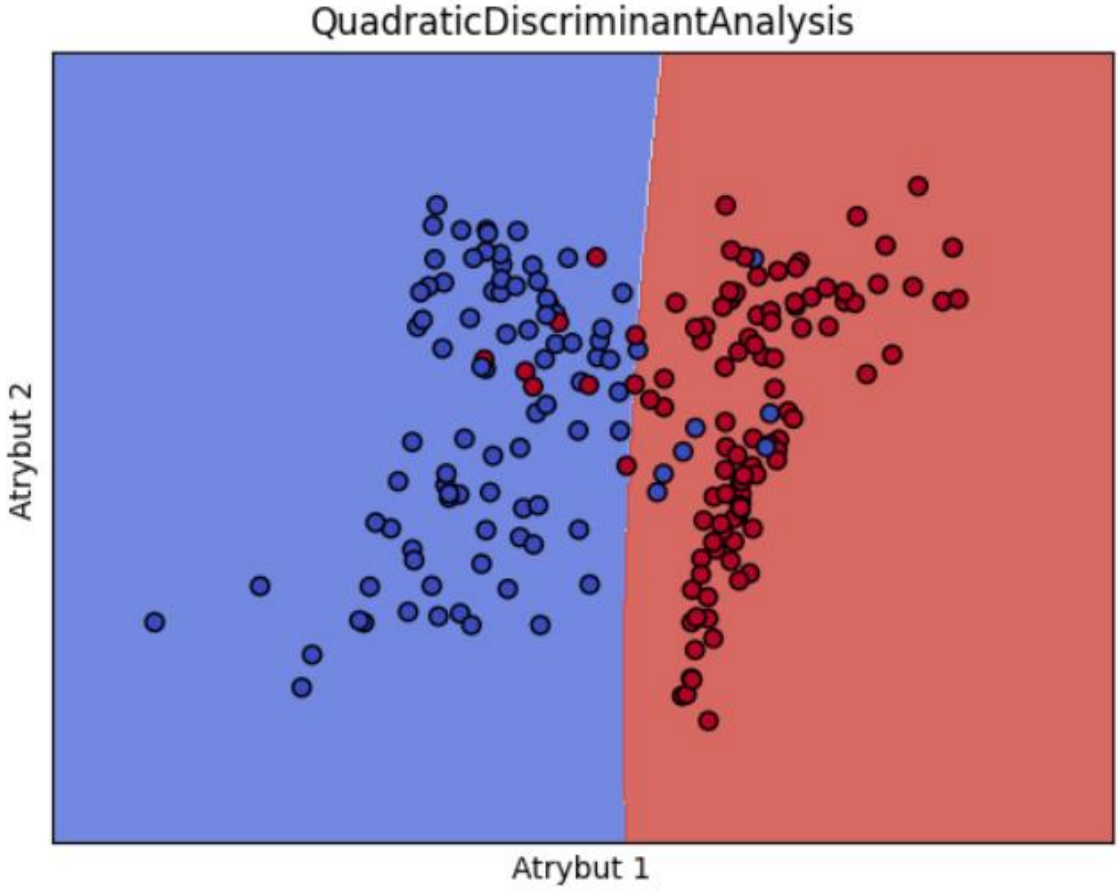


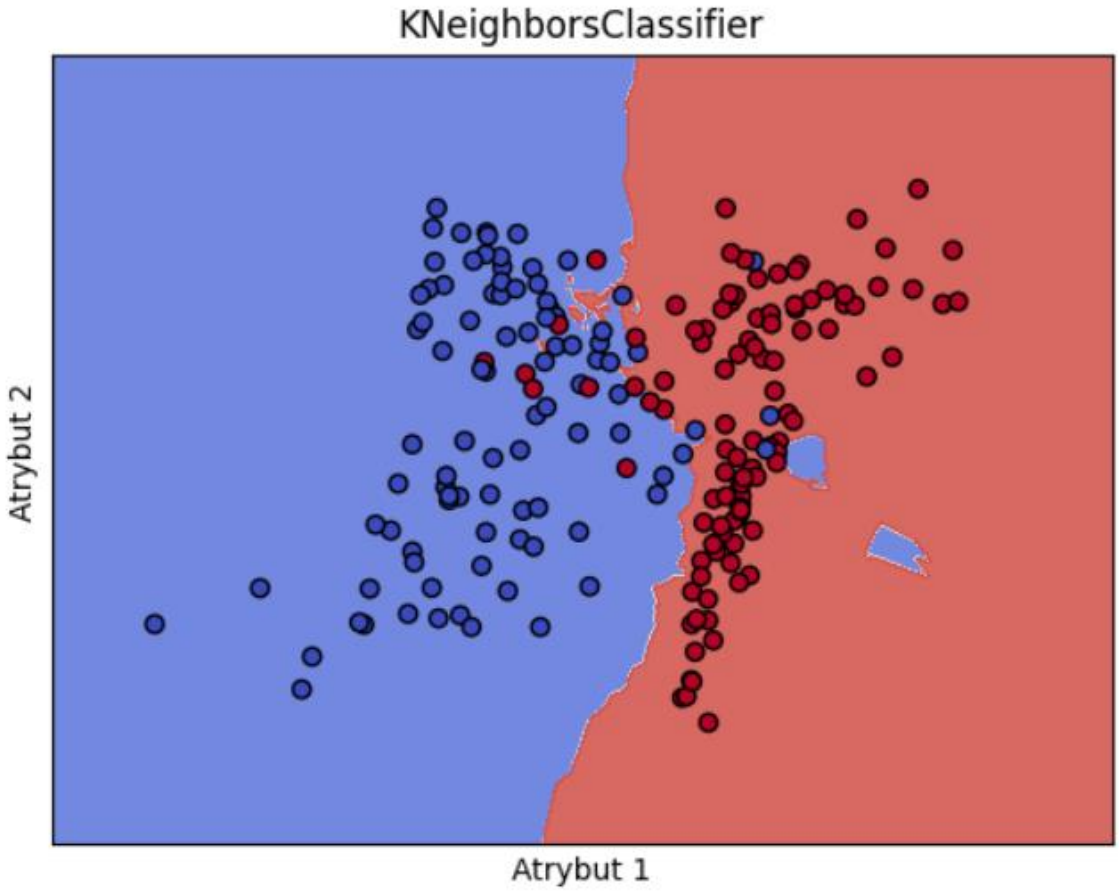
6. Wizualizacja krzywych ROC dla klasyfikatorów

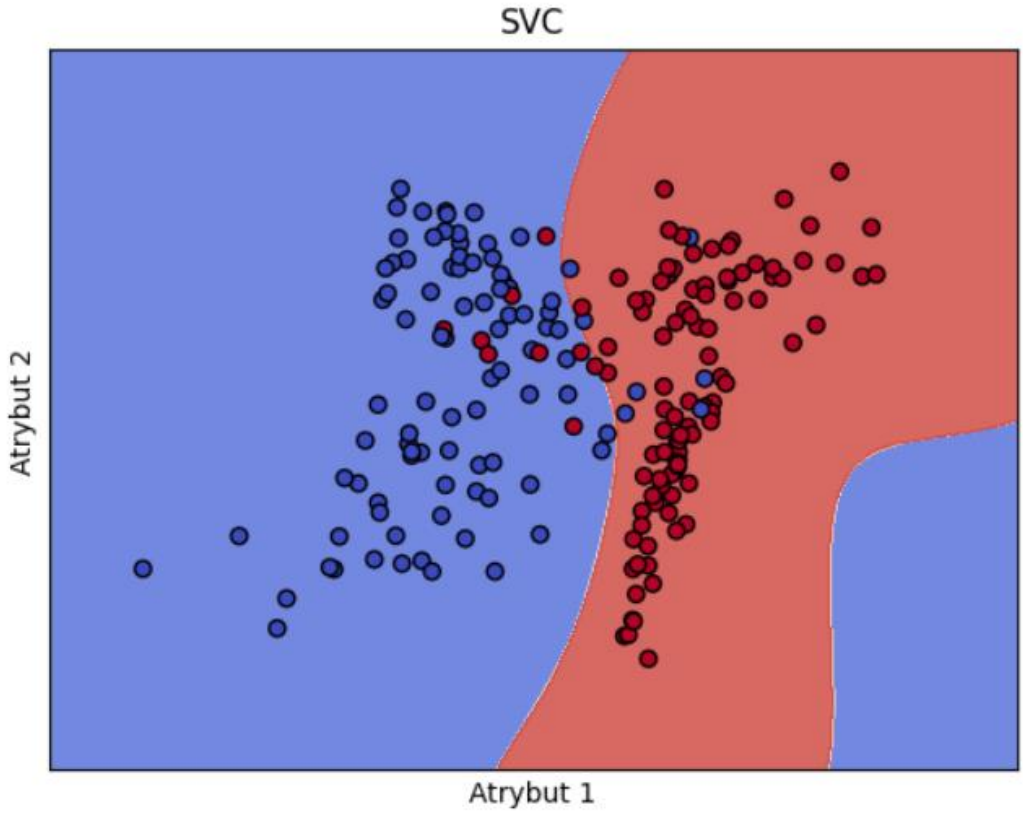


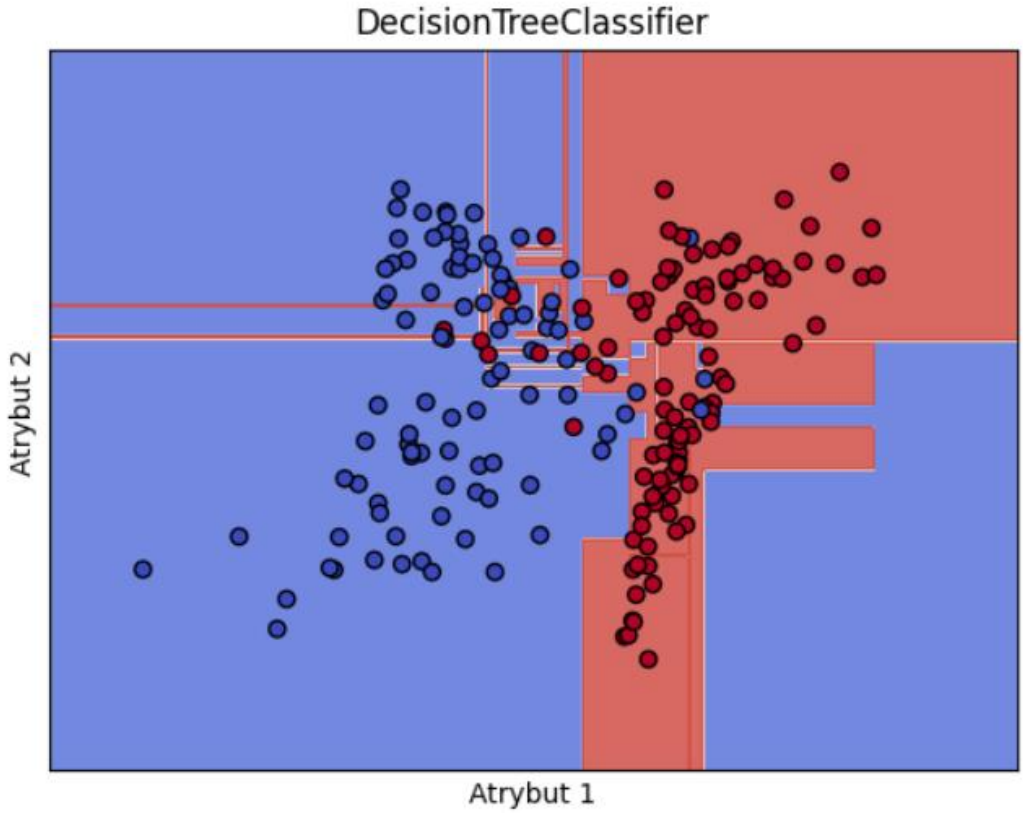
7. Krzywe dyskryminacyjne dla wszystkich klasyfikatorów




QuadraticDiscriminantAnalysis
Atrybut 2
Atrybut 1


KNeighborsClassifier
Atrybut 2
Atrybut 1


SVC
Atrybut 2
Atrybut 1


DecisionTreeClassifier
Atrybut 2
Atrybut 1