Lab 8 – k środki – wskazówki

Działanie algorytmu

https://www.statystyka.eu/analiza-skupien/metoda-k-srednich.php

https://medium.com/@rishit.dagli/build-k-means-from-scratch-in-python-e46bf68aa875

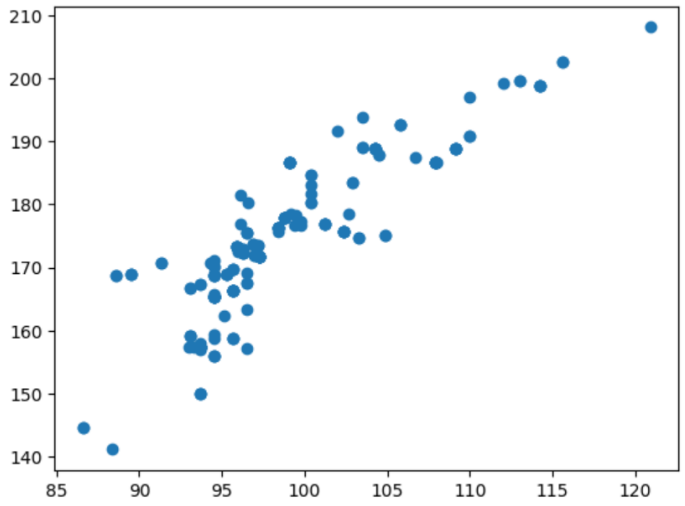
https://medium.com/@avijit.bhattacharjee1996/implementing-k-means-clustering-from-scratch-in-python-a277c23563ac

https://towardsdatascience.com/create-your-own-k-means-clustering-algorithm-in-python-d7d4c9077670

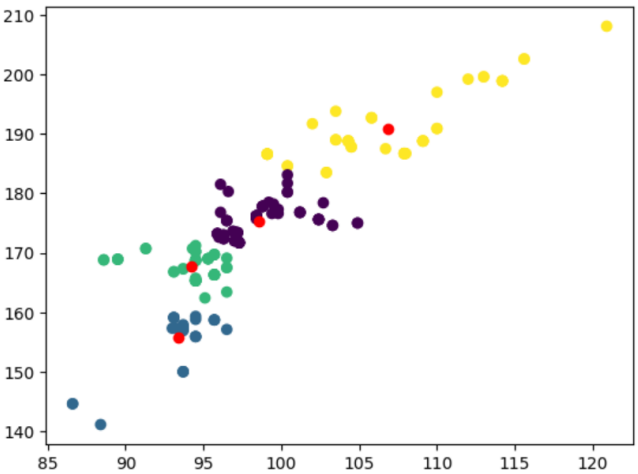
Biblioteki

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

Wizualizacja danych wejściowych

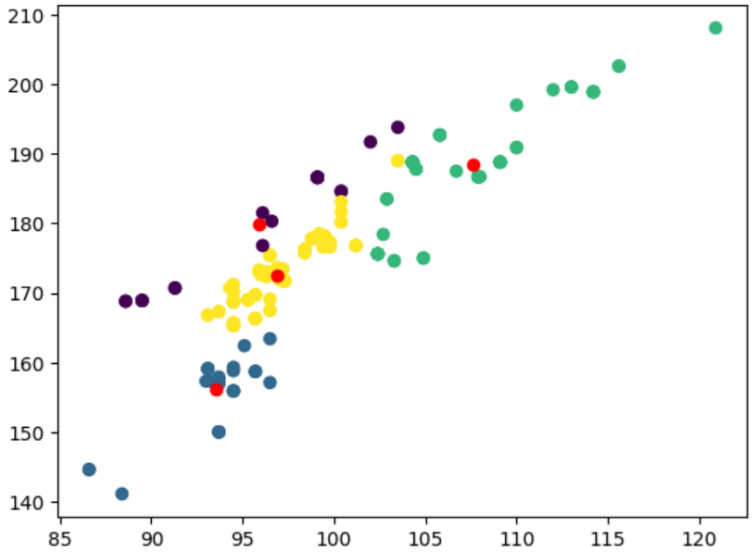


Dla k=4, odległość euklidesowa




```
F(C)= 0.03216930231486902
F(C)= 0.0482414234073027
F(C)= 0.07116807664646572
F(C)= 0.07601401744832029
F(C)= 0.07851334009809867
F(C)= 0.07869170350952076
```

Dla k = 4, odległość Mahalanobisa




```
F(C)= 1.1032606059482568
F(C)= 1.1849627785089505
F(C)= 1.1488156527606923
F(C)= 1.0740673447879159
F(C)= 0.985906407100056
F(C)= 0.955664371980897
```