

Lab 14 Sprawozdanie

Kod programu:

```
Get Started lab14.r wykres4.jpg Extension: R
root > lab14.r
1  if(!require("ggplot2")){
2    install.packages("ggplot2")
3    library("ggplot2")
4  }
5  if(!require("GGally")){
6    install.packages("GGally")
7    library("GGally")
8  }
9  library("ggplot2")
10 library("GGally")
11 library(cluster)
12 library(magrittr)
13 #zad1
14 nazwa <- 1:10
15 nazwa %<>% log2() %>% sin() %>% sum() %>% sqrt()
16 print(nazwa)
17 data(iris)
18 print(head(iris))
19 agg <- iris %>%
20   aggregate(.~Species, ., mean)
21 print(agg)
22 #zad2
23 a <- ggplot(iris, aes(x = Sepal.Width)) +
24   geom_histogram(aes(fill=Species, color = Species), bins=20) +
25   geom_vline(data=agg, aes(xintercept=Sepal.Width, color = Species), linetype="dashed") +
26   labs(x='x_axis', y='y_axis', title='title')
27 ggsave("/home/wykres1.jpg",plot=a)
28 #zad3
29 x <-iris[,1:4]
30 y <- iris[,5]
31 sum_sqr <- c()
32 for (i in 1:10){
33   kmeans_result <- kmeans(x, i)
34   sum_sqr <- append(sum_sqr, kmeans_result$tot.withinss)
35 }
36 a <- ggplot(data.frame(iteration = 1:length(sum_sqr), value = sum_sqr), aes(x=iteration, y=sum_sqr)) +
37   geom_line()
38 ggsave("/home/wykres2.jpg", plot=a)
39
40 kmeans_result <- kmeans(x,3)
41 a <- ggplot(iris, aes(x=Sepal.Width, y=Petal.Width, color=kmeans_result$cluster)) + geom_point()
42 ggsave("/home/wykres3.jpg", plot=a)
43
44 a <- ggplot(iris, aes(x=Sepal.Width, y=Petal.Width, color=Species)) + geom_point()
45 ggsave("/home/wykres4.jpg", plot=a)
```

Wysłałem kod w postaci screna i jako plik tekstowy, gdyż nie potrafiłem znaleźć ścieżki do właściwego pliku.

Rezultat na terminalu:

```
> source("/root/lab14.r", encoding = "UTF-8")
[1] 2.066735
  Sepal.Length Sepal.Width Petal.Length Petal.Width Species
1         5.1         3.5         1.4         0.2  setosa
2         4.9         3.0         1.4         0.2  setosa
3         4.7         3.2         1.3         0.2  setosa
4         4.6         3.1         1.5         0.2  setosa
5         5.0         3.6         1.4         0.2  setosa
6         5.4         3.9         1.7         0.4  setosa
  Species Sepal.Length Sepal.Width Petal.Length Petal.Width
1   setosa         5.006         3.428         1.462         0.246
2 versicolor         5.936         2.770         4.260         1.326
3  virginica         6.588         2.974         5.552         2.026
Saving 7 x 7 in image
Saving 7 x 7 in image
Saving 7 x 7 in image
Saving 7 x 7 in image
```

Wygenerowane wykresy:







