Raport 4

Eksploracja danych

Mikołaj Langner, Marcin Kostrzewa
nr albumów: 255716, 255749

2021-05-28

Spis treści

1 Wstęp

2 Zadanie 1

2.1 a)

2.2 b)

```
##  Setting default kernel parameters
```

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##  Setting default kernel parameters
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##  Setting default kernel parameters
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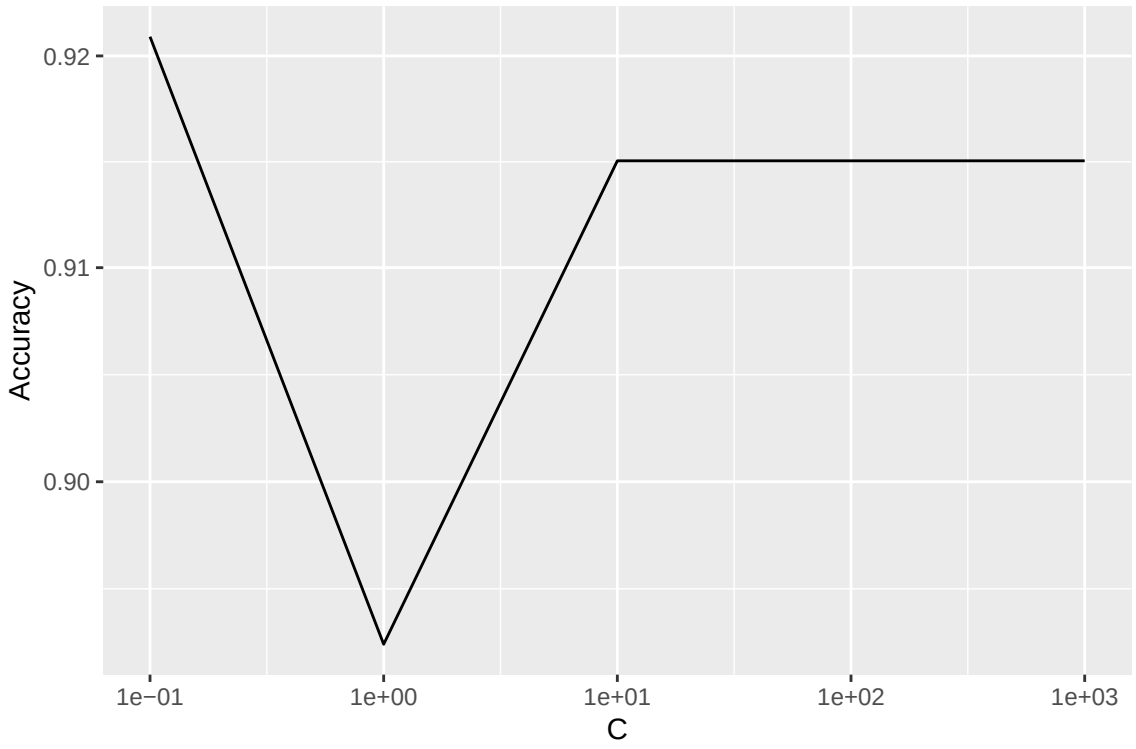
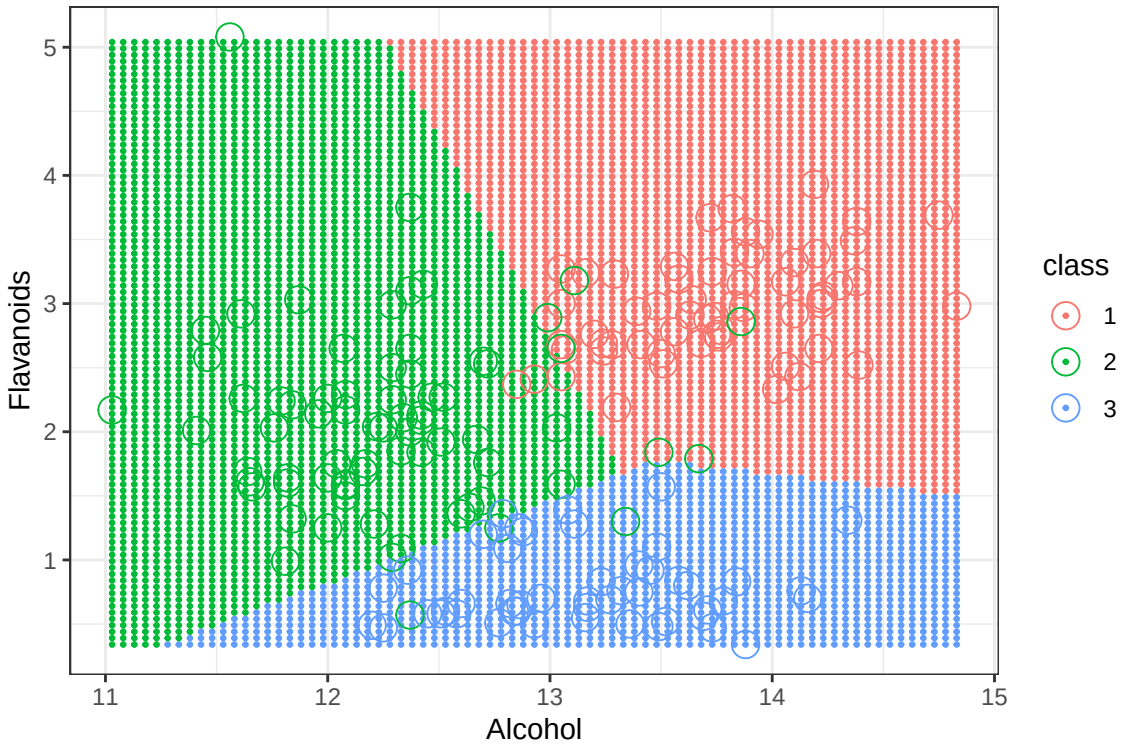
##  Setting default kernel parameters
```

% latex table generated in R 3.6.1 by xtable 1.8-4 package % Sat Jun 19 00:31:50 2021

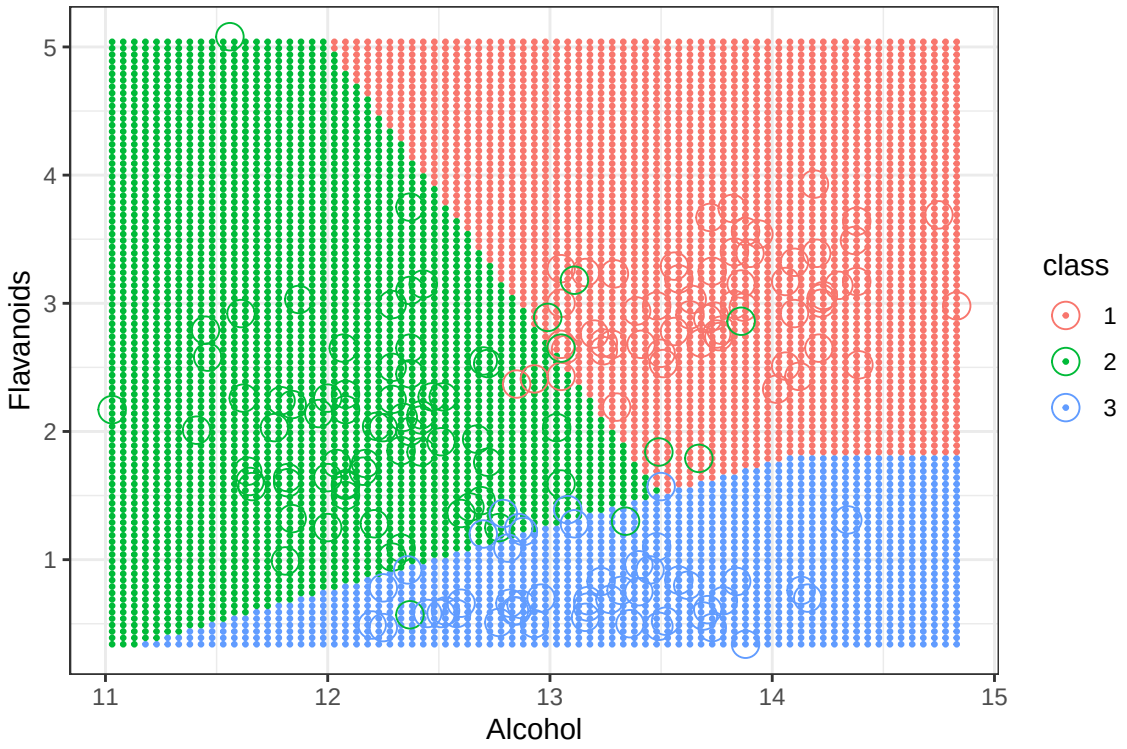
% latex table generated in R 3.6.1 by xtable 1.8-4 package % Sat Jun 19 00:31:55 2021



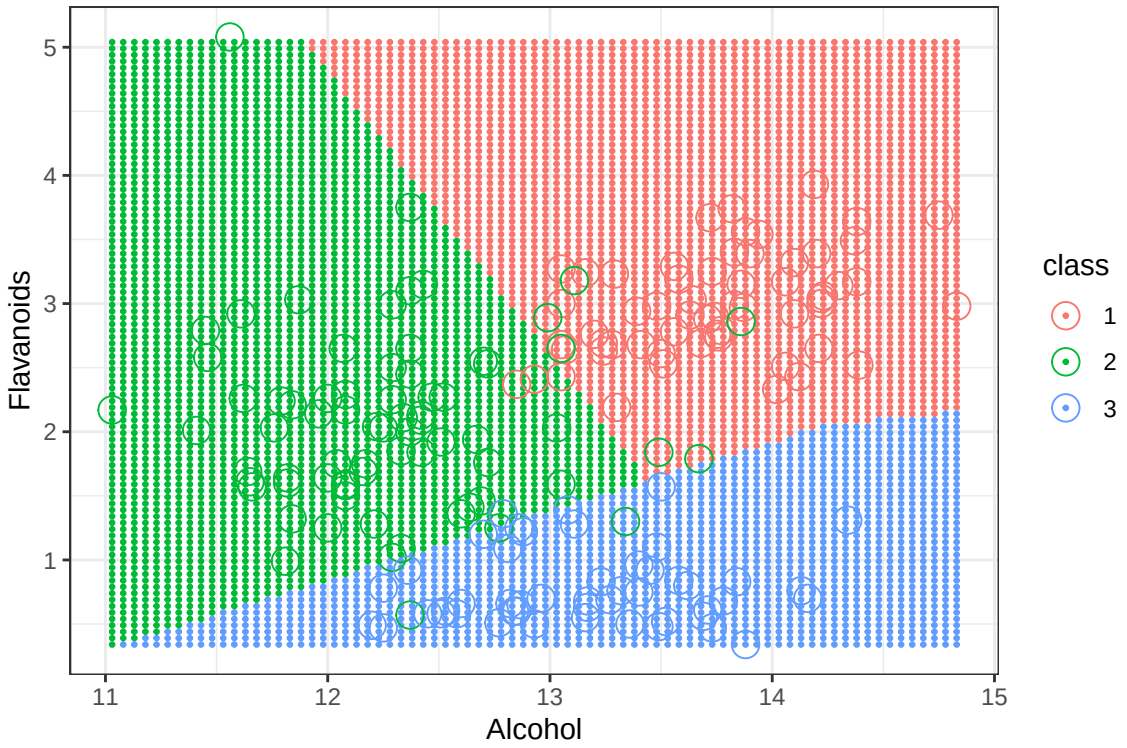
Rysunek 1: Dokladnosc klasyfikatora od parametru kosztu



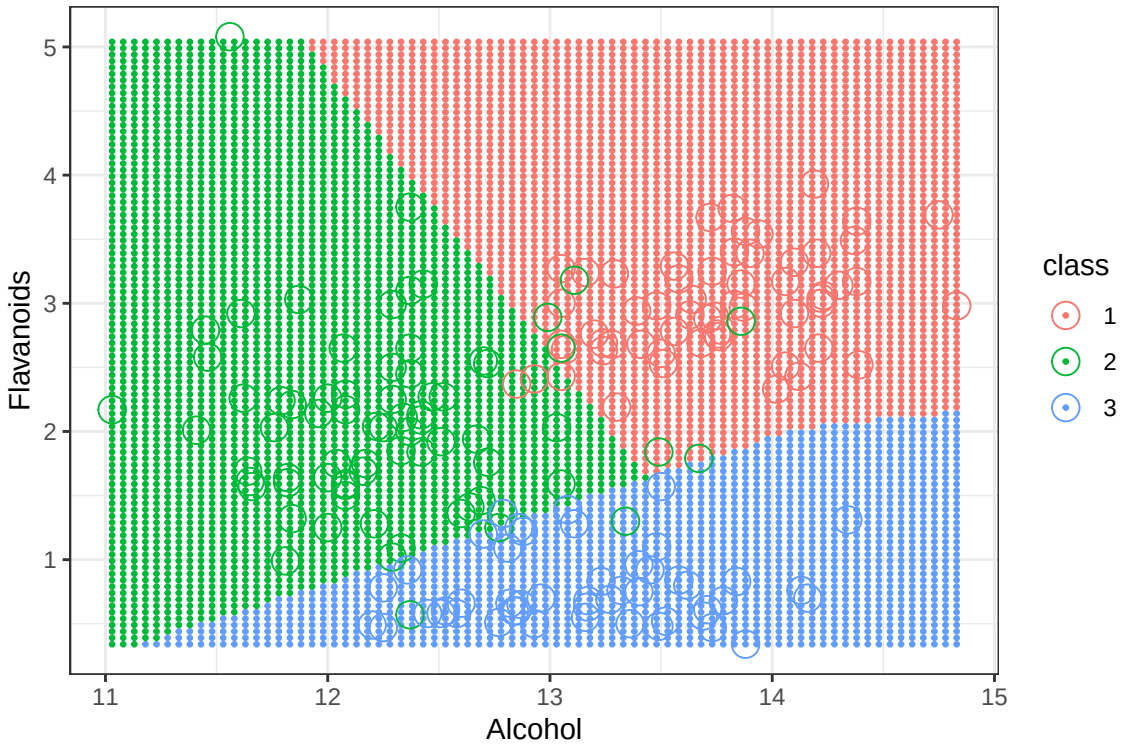
Rysunek 2: Obszary decyzyjne dla $C = 0.1$



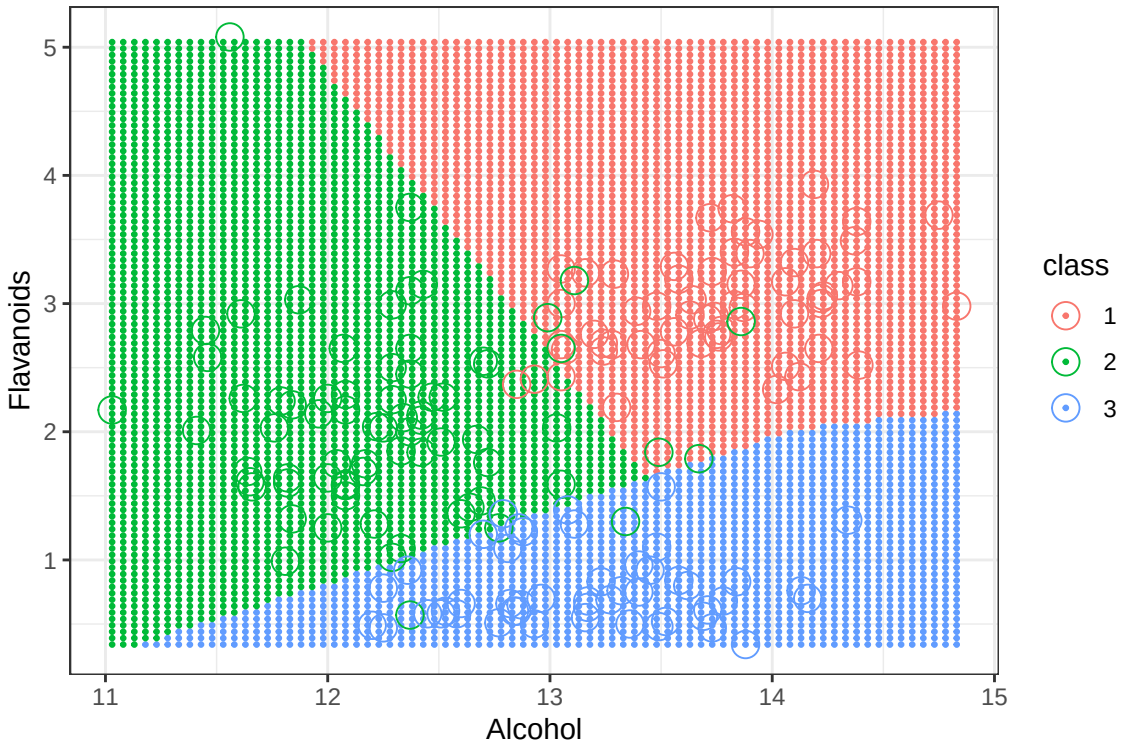
Rysunek 3: Obszary decyzyjne dla $C = 1$



Rysunek 4: Obszary decyzyjne dla $C = 10$



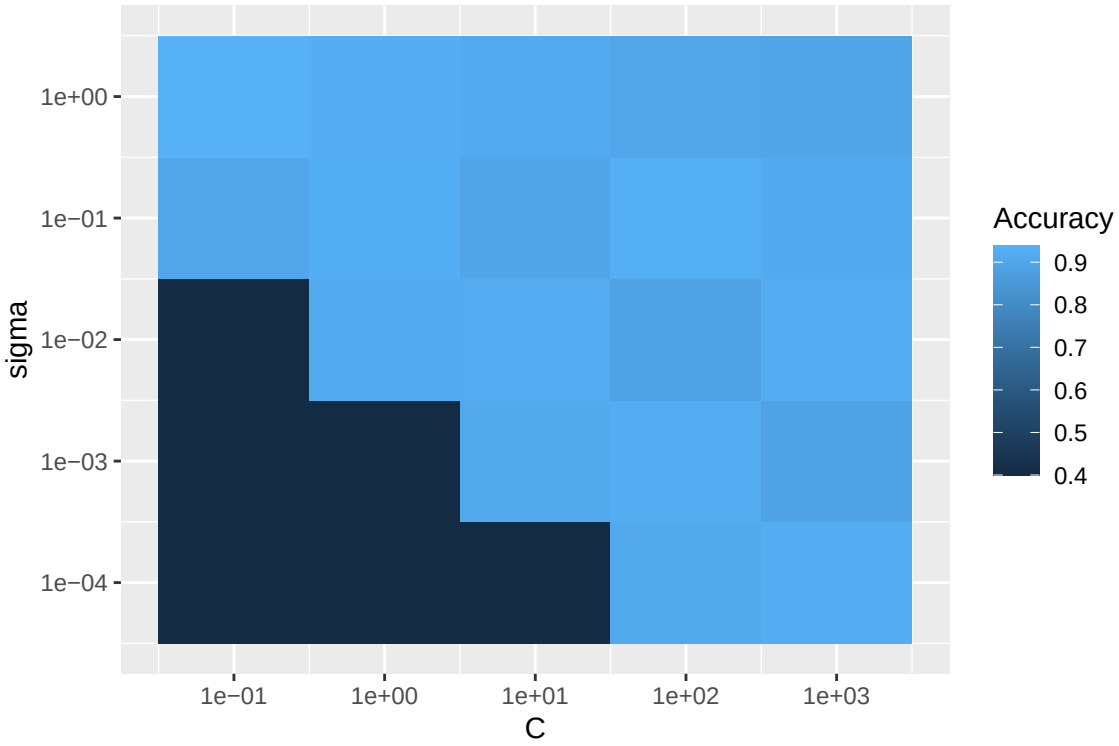
Rysunek 5: Obszary decyzyjne dla $C = 100$



Rysunek 6: Obszary decyzyjne dla $C = 1000$

linear	polynomial	radial
0.928	0.938	0.938

Tabela 1: Porównanie klasyfikatorów dla róznych jader

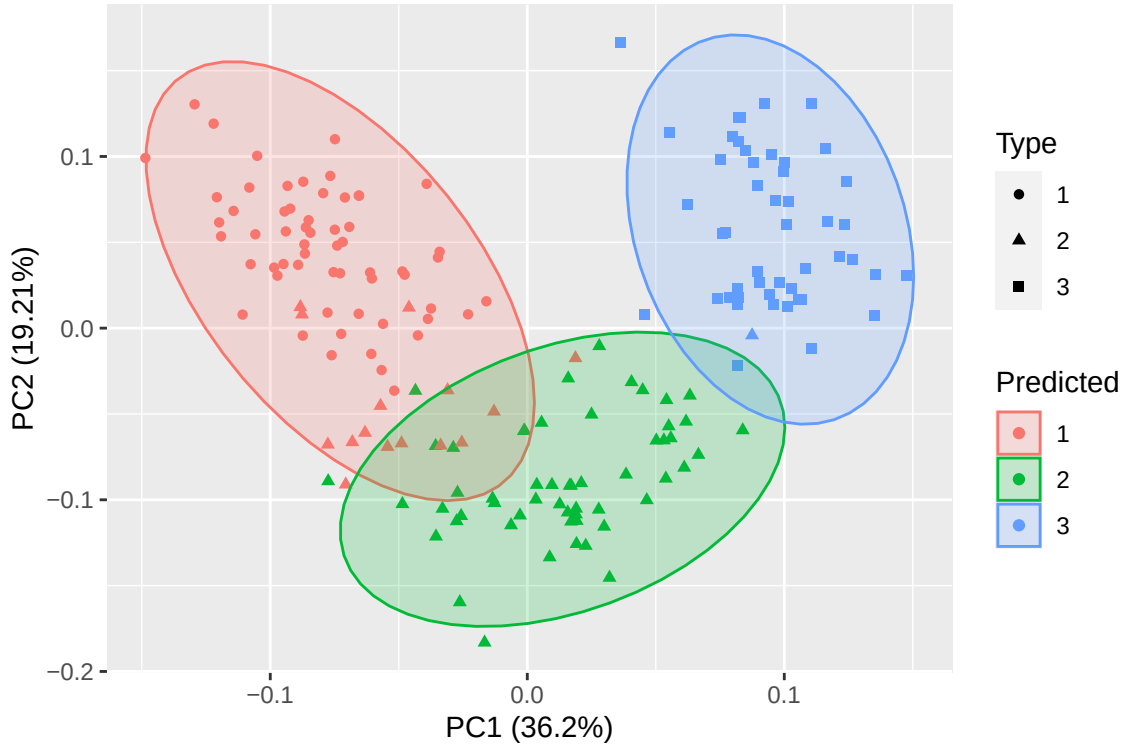


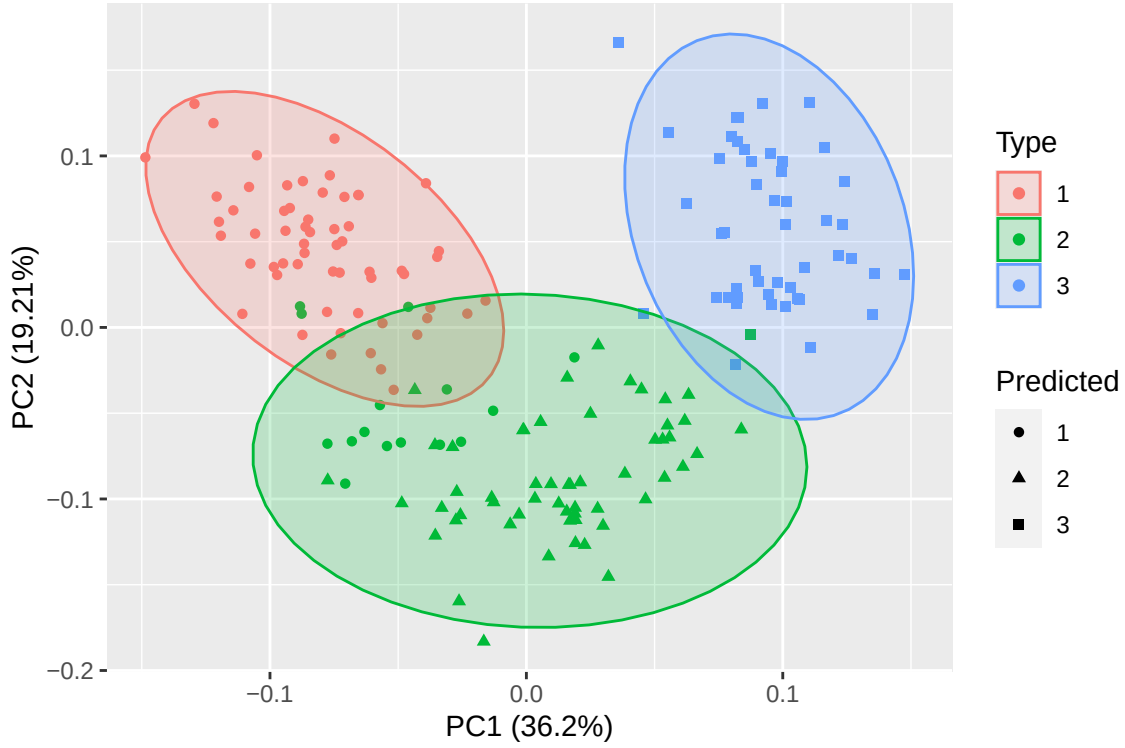
Rysunek 7: Mapa ciepla dokladnosci klasyfikatora

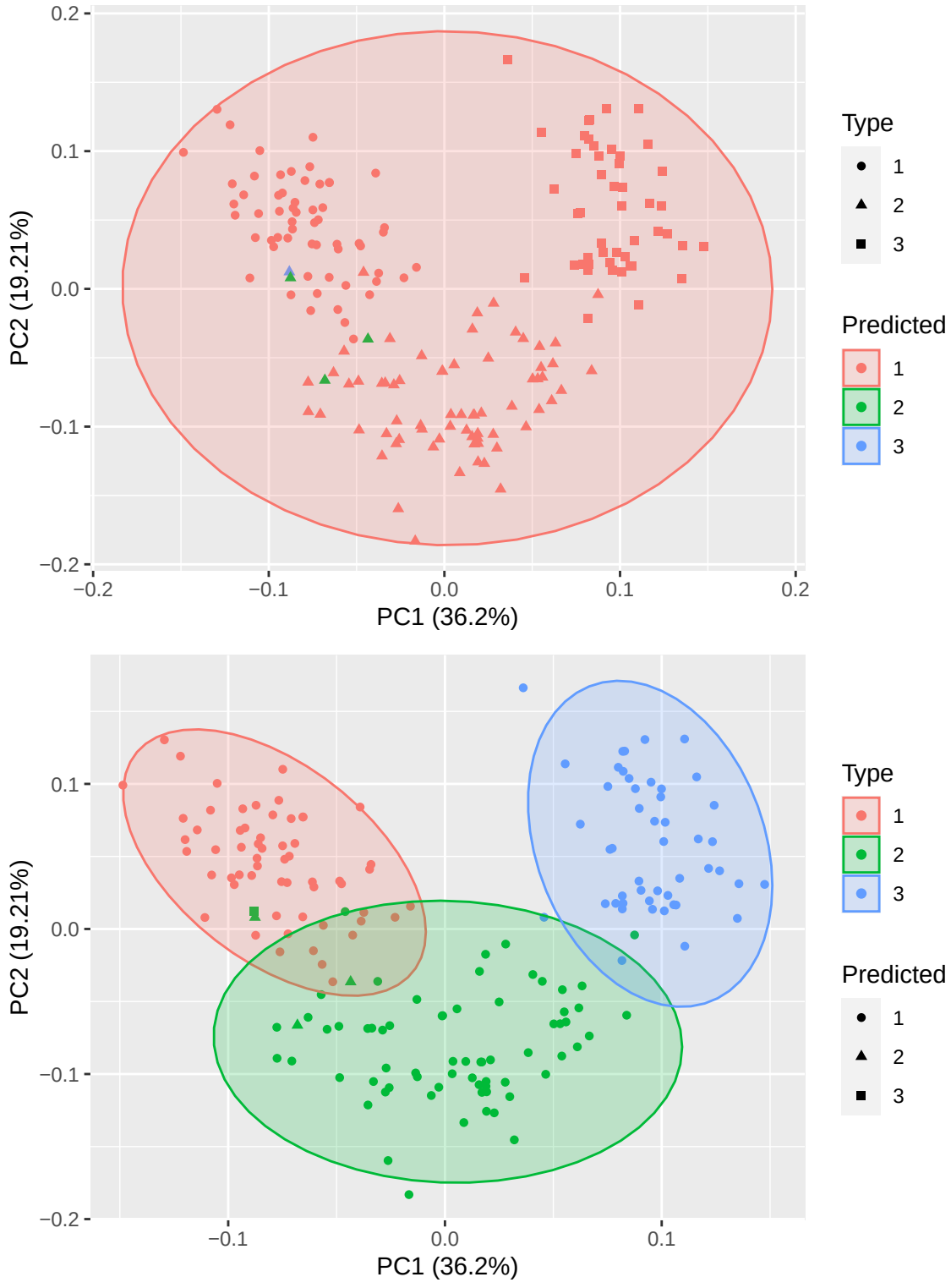
sigma	C
1.00	0.10

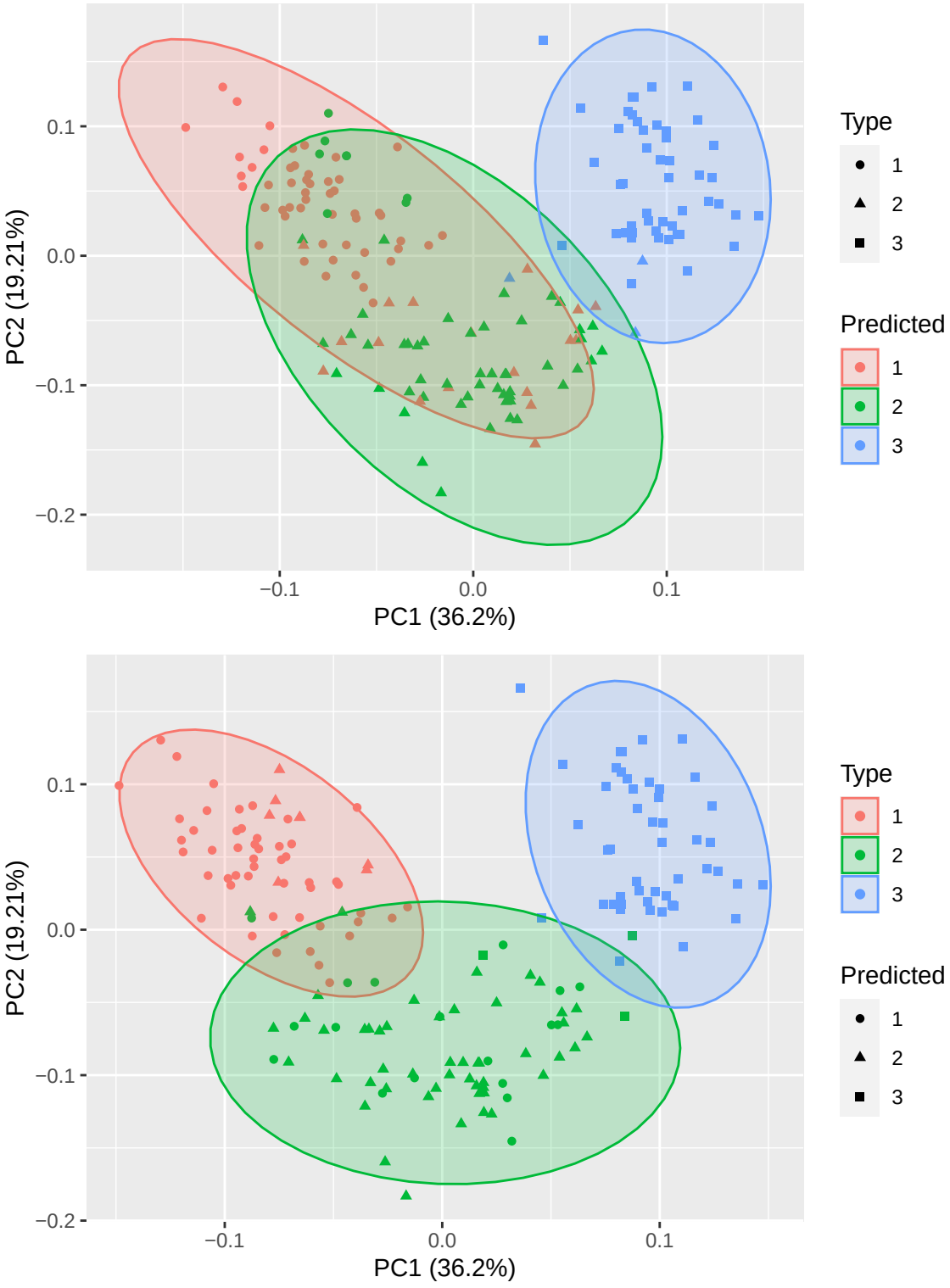
Tabela 2: Parametry dla najlepszego klasyfikatora

3 Zadanie 2






0.2
0.1
0.0
−0.1
−0.2
PC2 (19.21%)
−0.2
−0.1
0.0
0.1
0.2
PC1 (36.2%)
Type
1
2
3
Predicted
1
2
3
0.1
0.0
−0.1
−0.2
PC2 (19.21%)
−0.1
0.0
0.1
PC1 (36.2%)
Type
1
2
3
Predicted
1
2
3

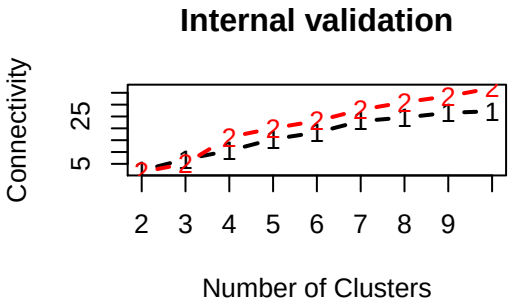


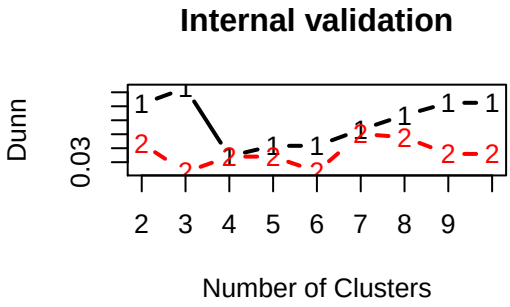

```
## Warning in clValid(wine %>% select(-Type), nClust = cl.range, clMethods =
## cl.methods, : rownames for data not specified, using 1:nrow(data)
```

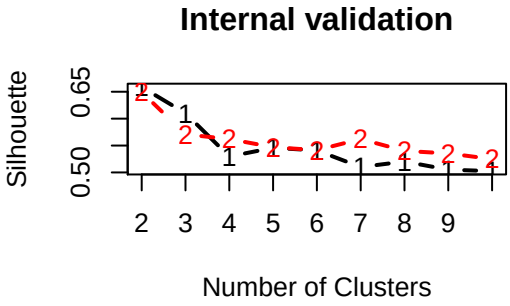
```
##
```

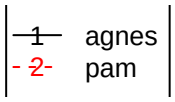
```
## Clustering Methods:
##  agnes pam
##
## Cluster sizes:
##  2 3 4 5 6 7 8 9 10
##
## Validation Measures:
##                            2       3       4       5       6       7       8       9
##
## agnes Connectivity   2.2329  6.9567 10.5615 15.4302 18.2468 23.0460 24.5746 26.5770 2
##       Dunn           0.0716  0.0830  0.0343  0.0417  0.0417  0.0532  0.0636  0.0725
##       Silhouette     0.6587  0.6101  0.5296  0.5458  0.5409  0.5101  0.5202  0.5051
## pam   Connectivity   1.5286  5.1048 16.2798 20.0643 23.1155 27.8393 31.0163 33.5841 3
##       Dunn           0.0434  0.0229  0.0340  0.0340  0.0233  0.0502  0.0478  0.0359
##       Silhouette     0.6494  0.5708  0.5620  0.5469  0.5414  0.5622  0.5401  0.5353
##
## Optimal Scores:
##
##              Score  Method Clusters
## Connectivity 1.5286 pam    2
## Dunn         0.0830 agnes  3
## Silhouette   0.6587 agnes  2
```

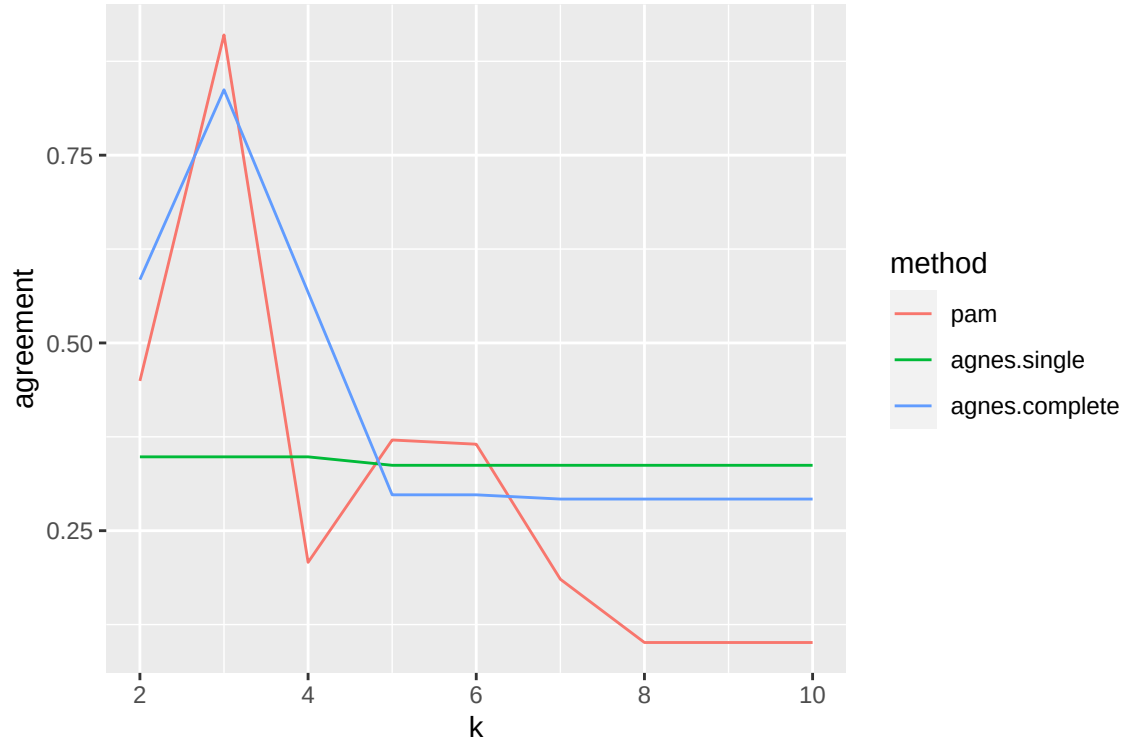
```
##                   Score Method Clusters
## Connectivity 1.52857143    pam        2
## Dunn         0.08304858  agnes        3
## Silhouette   0.65872930  agnes        2
```







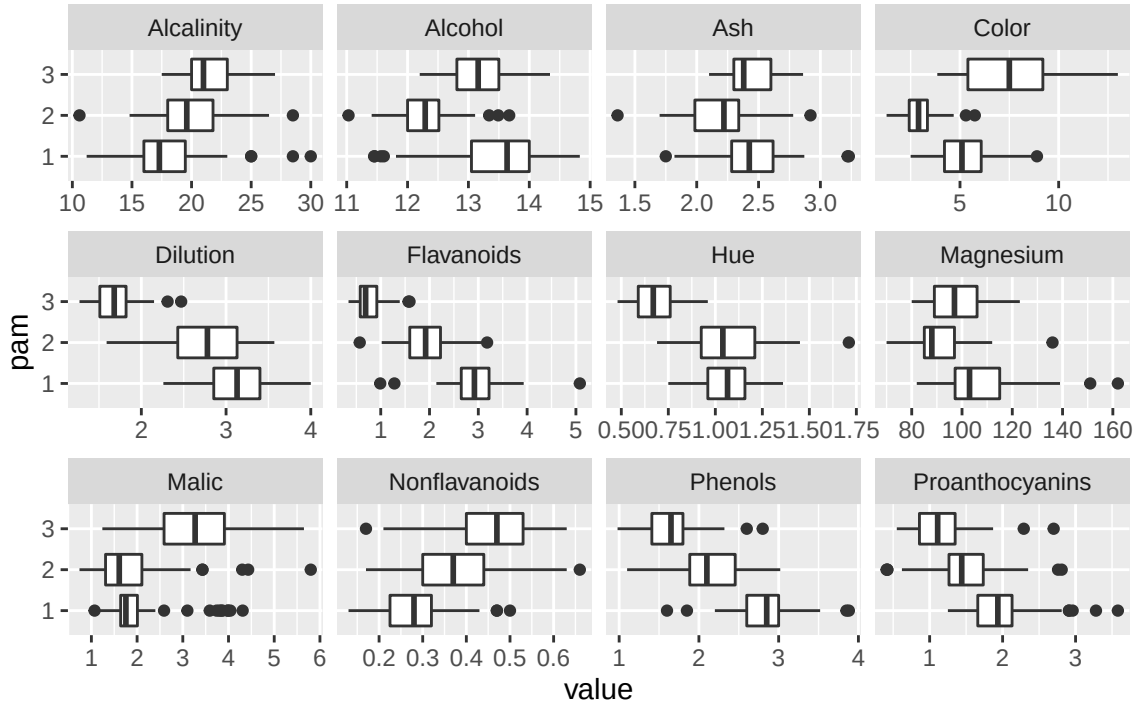




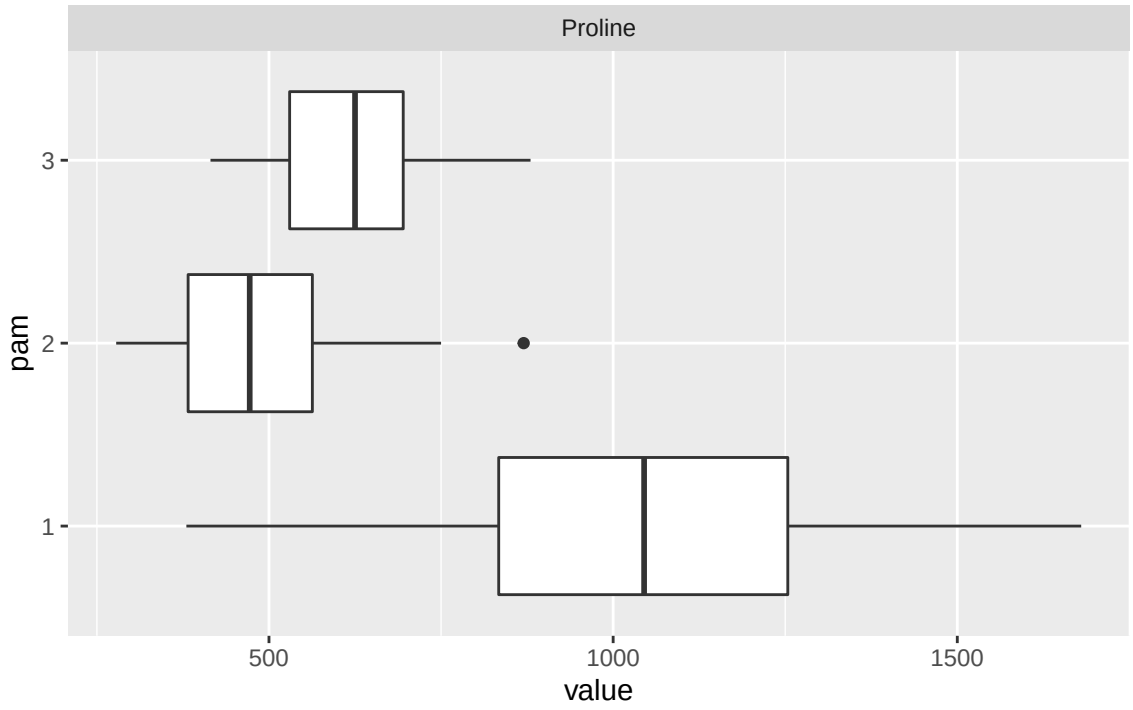

```
wine.pam <- pam(scale(wine %>% select(-Type)), 3)
wine.agnes <- cutree(agnes(scale(wine %>% select(-Type)), method='complete'), 3)
```

```
wine$pam <- as.factor(wine.pam$clustering)
wine$agnes <- as.factor(wine.agnes)

plot_boxplot(wine, by='pam')
```

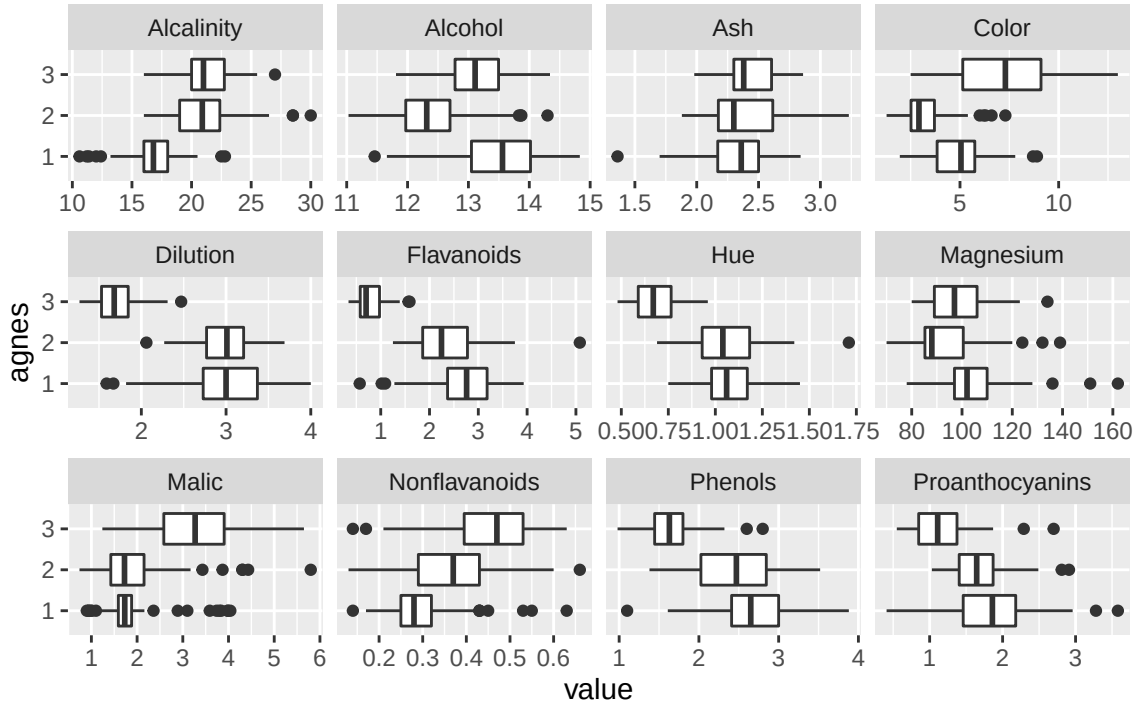


Page 1

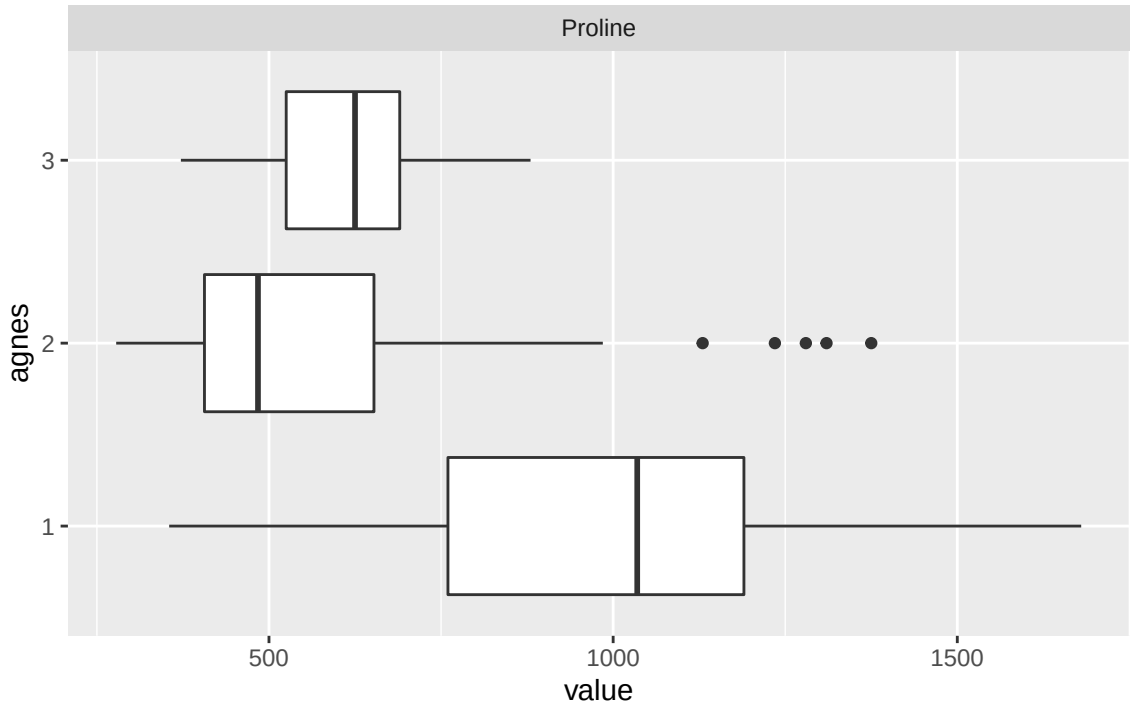


Page 2

```
plot_boxplot(wine, by='agnes')
```



Page 1



Page 2

```
wine.pam$medoids
```

```
##         Alcohol      Malic         Ash Alcalinity   Magnesium    Phenols
## [1,]  0.5904981 -0.4711544  0.15849862  0.3009543  0.01809398  0.6469393
## [2,] -0.9246039 -0.5427655 -0.89856839 -0.1482061 -1.38222271 -1.0307762
## [3,]  0.3934117  0.8088930  0.04914686  0.6003946 -0.54203270 -0.5833854
##         Flavanoids Nonflavanoids Proanthocyanins       Color        Hue
## [1,]  0.9518166597   -0.81841060      0.47016154  0.01807806  0.3611585
## [2,]  0.0007311716    0.06545479      0.06831575 -0.71522236  0.1861586
## [3,] -1.2707199546    0.70826598     -0.59560339  1.45017064 -1.7825902
##        Dilution    Proline
## [1,]  1.2089101  0.5497067
## [2,]  0.7863692 -0.7522631
## [3,] -1.3967588 -0.3076880
```