

LISTA 7

ANÁLISE MULTIVARIADA 1

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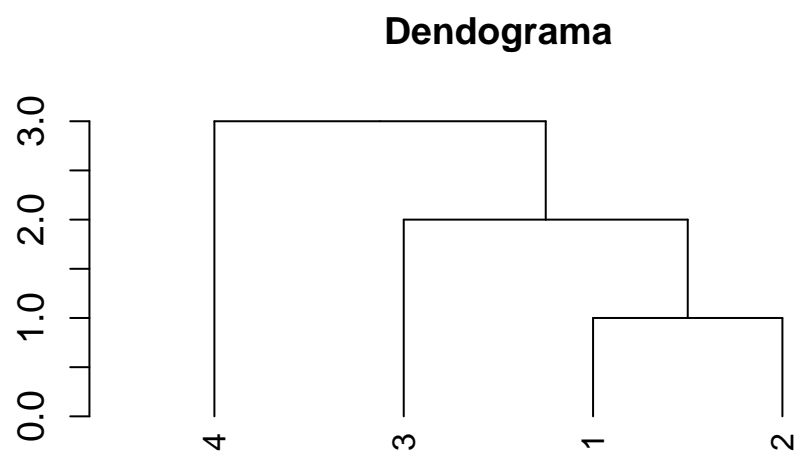
2023-12-12

12.5

```
d<-matrix(c(0,1,11,5,1,0,2,3,11,2,0,4,5,3,4,0),4,4)
d
```

	[,1]	[,2]	[,3]	[,4]
[1,]	0	1	11	5
[2,]	1	0	2	3
[3,]	11	2	0	4
[4,]	5	3	4	0

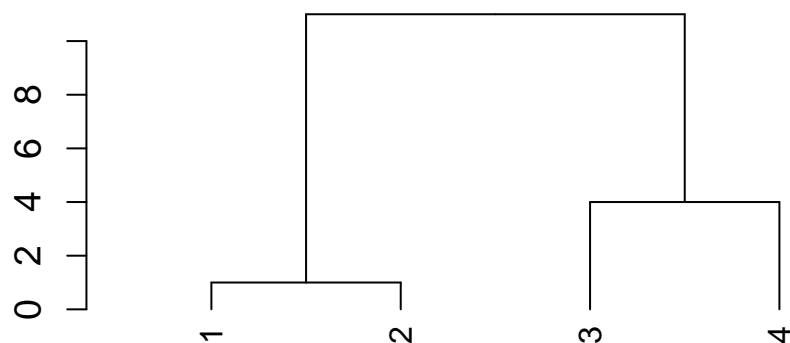
```
simples <- hclust(as.dist(d), method = "single")
plot(as.dendrogram(simples), hang = -1, cex.axis=1.2, cex.lab = 1.5,
     xlab="Ligação Simples", main="Dendograma")
```



Ligação Simples

```
completa <- hclust(as.dist(d), method = "complete")  
plot(as.dendrogram(completa), hang = -1, cex.axis=1.2, cex.lab = 1.5,  
      xlab="Ligação Completa", main="Dendrograma")
```

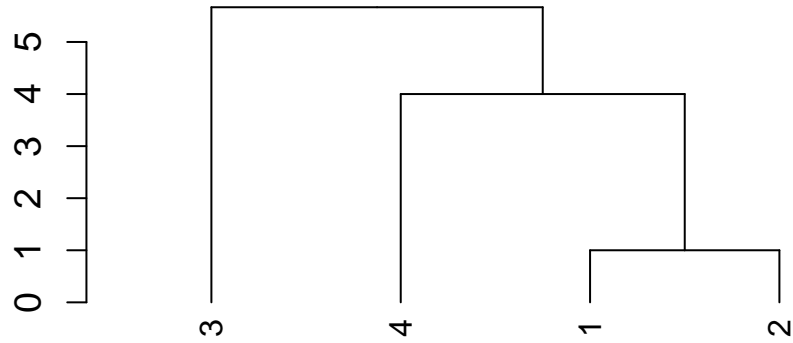
Dendrograma



Ligação Completa

```
media <- hclust(as.dist(d), method = "average")  
plot(as.dendrogram(media), hang = -1, cex.axis=1.2, cex.lab = 1.5,  
      xlab="Ligação Média", main="Dendrograma")
```

Dendrograma



Ligação Média

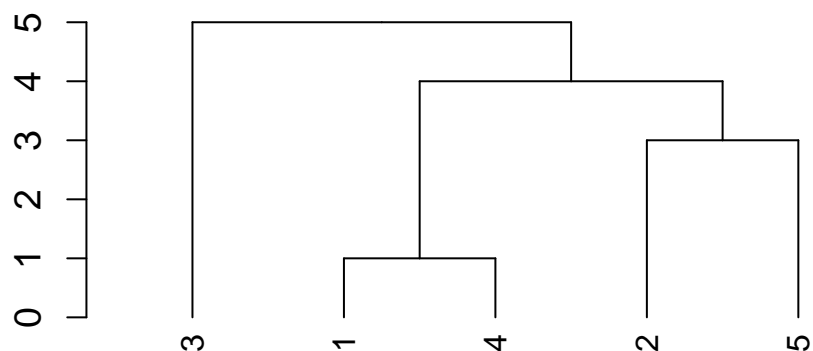
12.6

```
d6<-matrix(c(0,4,6,1,6,4,0,9,7,3,6,9,0,10,5,1,7,10,0,8,6,3,5,8,0),5,5)
d6
```

	[,1]	[,2]	[,3]	[,4]	[,5]
[1,]	0	4	6	1	6
[2,]	4	0	9	7	3
[3,]	6	9	0	10	5
[4,]	1	7	10	0	8
[5,]	6	3	5	8	0

```
simples6 <- hclust(as.dist(d6), method = "single")
plot(as.dendrogram(simples6), hang = -1, cex.axis=1.2, cex.lab = 1.5,
     xlab="Ligação Simples", main="Dendrograma")
```

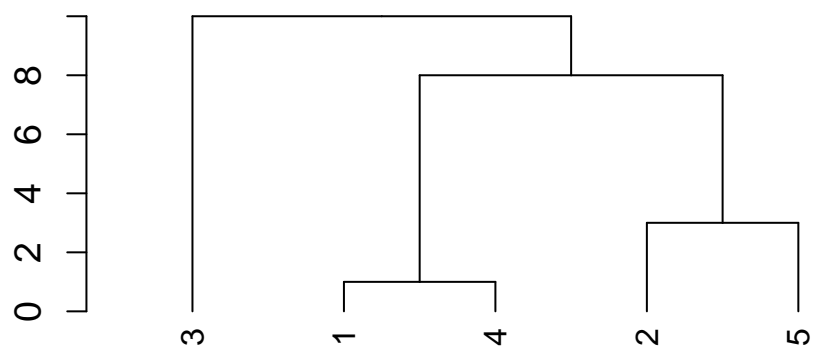
Dendrograma



Ligação Simples

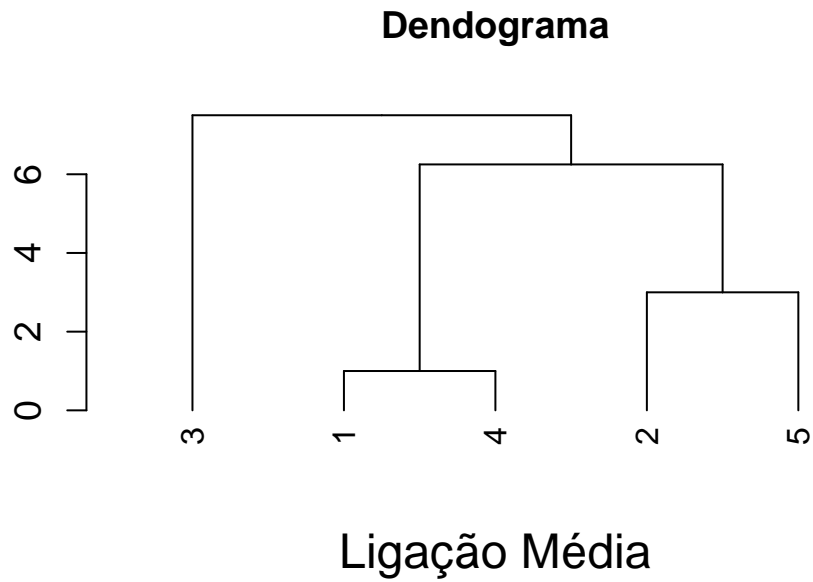
```
completa6 <- hclust(as.dist(d6), method = "complete")  
plot(as.dendrogram(completa6), hang = -1, cex.axis=1.2, cex.lab = 1.5,  
     xlab="Ligação Completa", main="Dendrograma")
```

Dendograma



Ligação Completa

```
media6 <- hclust(as.dist(d6), method = "average")  
plot(as.dendrogram(media6), hang = -1, cex.axis=1.2, cex.lab = 1.5,  
     xlab="Ligação Média", main="Dendograma")
```



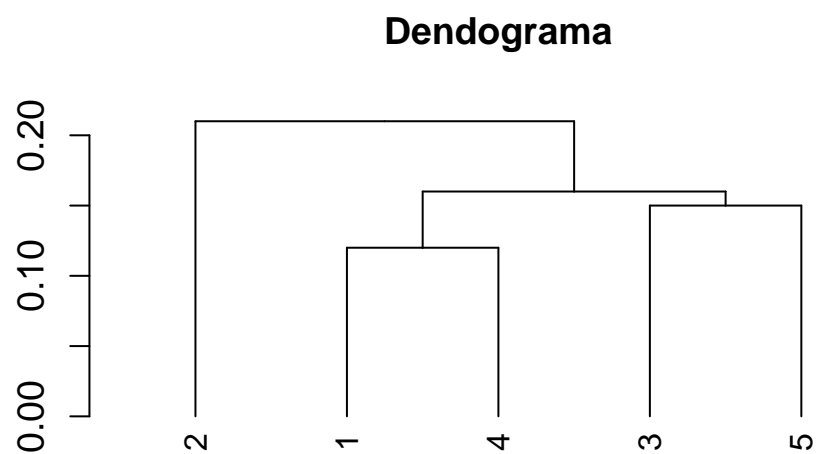
12.7

```
corr<-matrix(c(1,.63,.51,.12,.16,
               .63,1,.57,.32,.21,
               .51,.57,1,.18,.15,
               .12,.32,.18,1,.68,
               .16,.21,.15,.68,1),5,5)

corr
```

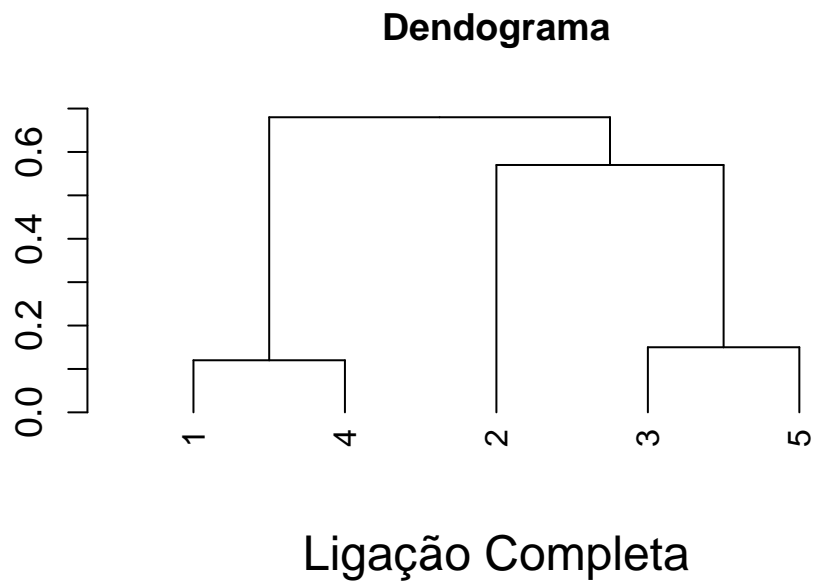
```
      [,1] [,2] [,3] [,4] [,5]
[1,] 1.00 0.63 0.51 0.12 0.16
[2,] 0.63 1.00 0.57 0.32 0.21
[3,] 0.51 0.57 1.00 0.18 0.15
[4,] 0.12 0.32 0.18 1.00 0.68
[5,] 0.16 0.21 0.15 0.68 1.00
```

```
simples7 <- hclust(as.dist(corr), method = "single")
plot(as.dendrogram(simples7), hang = -1, cex.axis=1.2, cex.lab = 1.5,
     xlab="Ligação Simples", main="Dendrograma")
```



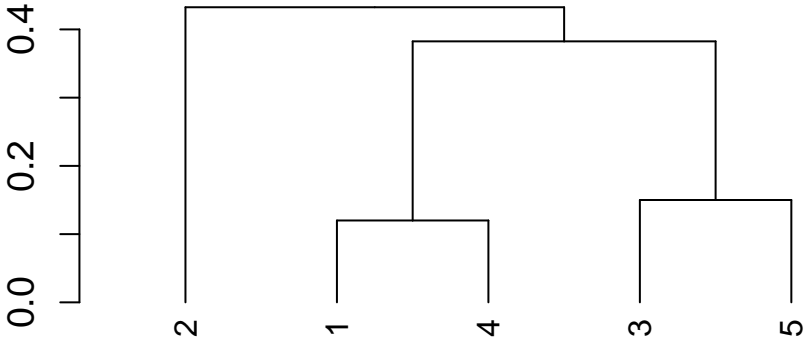
Ligação Simples

```
completa7 <- hclust(as.dist(corr), method = "complete")
plot(as.dendrogram(completa7), hang = -1, cex.axis=1.2, cex.lab = 1.5,
     xlab="Ligação Completa", main="Dendrograma")
```

```
media7 <- hclust(as.dist(corr), method = "average")  
plot(as.dendrogram(media7), hang = -1, cex.axis=1.2, cex.lab = 1.5,  
      xlab="Ligação Média", main="Dendrograma")
```

Dendograma



Ligação Média