Anàlisi de components principals

Vicent Caselles Ballester

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Exercici 1

First I'm gonna create a function that converts a covariance matrix into a correlation matrix:

```
cov2cor_vc <- function(cov){
  # from:
  # https://math.stackexchange.com/questions/186959/correlation-matrix-from-covariance-matrix
  D <- diag(sqrt(diag(cov)))
  cor <- solve(D) %*% cov %*% solve(D)
  cor
}
```

Let's try it out:

```
cov1 <- matrix(c(8,5,5,4), ncol=2)
cov2cor_vc(cov1)
```

```
##           [,1]      [,2]
## [1,] 1.0000000 0.8838835
## [2,] 0.8838835 1.0000000
```

```
# We see that if we use the "built-in" function from R we get the same
cov2cor(cov1)
```

```
##           [,1]      [,2]
## [1,] 1.0000000 0.8838835
## [2,] 0.8838835 1.0000000
```