Cognitive Modeling LC1

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```
## set working direcotry
setwd("/home/harm/Uni/cogmod/LC1/") ##<======= SET THIS TO YOUR LC1 FOLDER!
```

ANSWER SECTION

Q1 Try *?log* to read how to use log function. What are the two ways to calculate the log of 10 using base 10?

```
log(10, 10)
log10(10)
```

Q2 if you assing an integer value to a variable (e.g. k = 1), will the data value also be integer

No, k will be of class numeric

```
k = 1
class(k)
```

```
## [1] "numeric"
```

Q3 the seq function is very useful ot make sequences of numbers, which will be saved as vectors. Look up how seq works and make a sequence starting at 0 ending at 100 in steps of 2?

```
seq(0,100,2)
```

```
##  [1]   0   2   4   6   8  10  12  14  16  18  20  22  24  26  28  30  32
## [18]  34  36  38  40  42  44  46  48  50  52  54  56  58  60  62  64  66
## [35]  68  70  72  74  76  78  80  82  84  86  88  90  92  94  96  98 100
```

Q4 find the minimum and maximum of the random numbers you just generated, and also the position in the list:

```r
set.seed(123)
rr =runif(100, 0, 1)
max(rr)
```

```
## [1] 0.9942698
```

```r
which.max(rr)
```

```
## [1] 24
```

```r
min(rr)
```

```
## [1] 0.0006247733
```

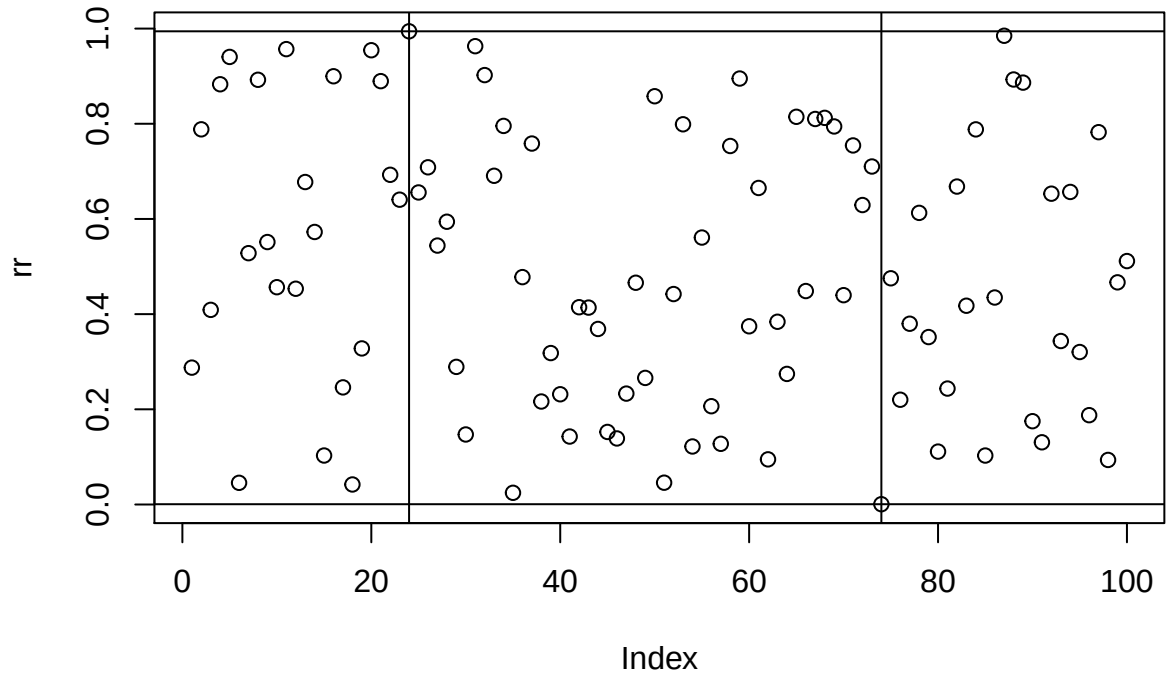
```r
which.min(rr)
```

```
## [1] 74
```

Q5 try to plot all random numbers using plot() and identify the min and max in it using abline() to add (h)orizontal and (v)ertical lines

(hint: use ?plot and ?abline)

```r
plot(rr)
abline(h = max(rr), v = which.max(rr))
abline(h = min(rr), v = which.min(rr))
```



Q6 Below are two lists, can you combine them using rbind, if not, why not and how could you change that?

No, for *rbind* the number of columns must be the same. Thus change ncol to same value

```
L1 = matrix( c(2, 4, 3, 1, 5, 7), nrow=3, ncol=2, byrow = TRUE)
L2  = matrix( c(2, 4, 3, 1, 5, 7), nrow=2, ncol=2, byrow = F)
rbind(L1,L2)
```

```
##      [,1] [,2]
## [1,]    2    4
## [2,]    3    1
## [3,]    5    7
## [4,]    2    3
## [5,]    4    1
```

Q7 can you now select all cars that drove more that 30 kilometers in distance?

```
test = subset(cars, cars$dist > 30)
# First 10 rows
test[1:10,]
```

```
##    speed dist
## 9     10   34
## 17    13   34
## 18    13   34
## 19    13   46
## 21    14   36
## 22    14   60
## 23    14   80
## 26    15   54
## 27    16   32
## 28    16   40
```

Q8 can you use ifelse to tell for each element in the following list if it is even or odd ? (hint modulo: x %% y)

```
a = c(5,7,2,9)
ifelse(a %% 2 == 0, 1, 0)
```

```
## [1] 0 0 1 0
```