Assignment 4

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## Exercises

### Exercise 1

data = read.table("fruitflies.txt", header=TRUE)

**Point 1**

Adding a column *loglongevity* to data-frame, containing the logarithm of the number of days until death:

# 1. prepare an array of results  
loglongevity = c(1:length(data$longevity))  
# 2. calculate logarithm values of longevity for each fly in datafrane  
for (i in 1:length(data$longevity)) {  
 loglongevity[i] = log(data$longevity[i])  
}  
# 3. bind new array of results with current dataframe  
data = cbind(data,loglongevity)

As a result, our dataframe was expanded by new column called *loglongevity* that will be used as an outcome variable in further processing.

|  |  |  |  |
| --- | --- | --- | --- |
| thorax | longevity | activity | loglongevity |
| 0.64 | 40 | isolated | 3.688880 |
| 0.70 | 37 | isolated | 3.610918 |
| 0.72 | 44 | isolated | 3.784190 |
| 0.72 | 47 | isolated | 3.850148 |
| 0.72 | 47 | isolated | 3.850148 |
| 0.76 | 47 | isolated | 3.850148 |
| 0.78 | 68 | isolated | 4.219508 |
| 0.80 | 47 | isolated | 3.850148 |
| 0.84 | 54 | isolated | 3.988984 |
| 0.84 | 61 | isolated | 4.110874 |
| 0.84 | 71 | isolated | 4.262680 |
| 0.84 | 75 | isolated | 4.317488 |
| 0.84 | 89 | isolated | 4.488636 |
| 0.88 | 58 | isolated | 4.060443 |
| 0.88 | 59 | isolated | 4.077537 |
| 0.88 | 62 | isolated | 4.127134 |
| 0.88 | 79 | isolated | 4.369448 |
| 0.88 | 96 | isolated | 4.564348 |
| 0.92 | 58 | isolated | 4.060443 |
| 0.92 | 62 | isolated | 4.127134 |
| 0.92 | 70 | isolated | 4.248495 |
| 0.92 | 72 | isolated | 4.276666 |
| 0.92 | 75 | isolated | 4.317488 |
| 0.92 | 96 | isolated | 4.564348 |
| 0.94 | 75 | isolated | 4.317488 |
| 0.68 | 21 | low | 3.044522 |
| 0.68 | 40 | low | 3.688880 |
| 0.72 | 44 | low | 3.784190 |
| 0.76 | 54 | low | 3.988984 |
| 0.78 | 36 | low | 3.583519 |
| 0.80 | 40 | low | 3.688880 |
| 0.80 | 56 | low | 4.025352 |
| 0.80 | 60 | low | 4.094345 |
| 0.84 | 48 | low | 3.871201 |
| 0.84 | 53 | low | 3.970292 |
| 0.84 | 60 | low | 4.094345 |
| 0.84 | 60 | low | 4.094345 |
| 0.84 | 65 | low | 4.174387 |
| 0.84 | 68 | low | 4.219508 |
| 0.88 | 60 | low | 4.094345 |
| 0.88 | 81 | low | 4.394449 |
| 0.88 | 81 | low | 4.394449 |
| 0.90 | 48 | low | 3.871201 |
| 0.90 | 48 | low | 3.871201 |
| 0.90 | 56 | low | 4.025352 |
| 0.90 | 68 | low | 4.219508 |
| 0.90 | 75 | low | 4.317488 |
| 0.90 | 81 | low | 4.394449 |
| 0.92 | 48 | low | 3.871201 |
| 0.92 | 68 | low | 4.219508 |
| 0.64 | 16 | high | 2.772589 |
| 0.64 | 19 | high | 2.944439 |
| 0.68 | 19 | high | 2.944439 |
| 0.72 | 32 | high | 3.465736 |
| 0.72 | 33 | high | 3.496508 |
| 0.74 | 33 | high | 3.496508 |
| 0.76 | 30 | high | 3.401197 |
| 0.76 | 42 | high | 3.737670 |
| 0.76 | 42 | high | 3.737670 |
| 0.78 | 33 | high | 3.496508 |
| 0.80 | 26 | high | 3.258097 |
| 0.80 | 30 | high | 3.401197 |
| 0.82 | 40 | high | 3.688880 |
| 0.82 | 54 | high | 3.988984 |
| 0.84 | 34 | high | 3.526361 |
| 0.84 | 34 | high | 3.526361 |
| 0.84 | 47 | high | 3.850148 |
| 0.84 | 47 | high | 3.850148 |
| 0.88 | 42 | high | 3.737670 |
| 0.88 | 47 | high | 3.850148 |
| 0.88 | 54 | high | 3.988984 |
| 0.88 | 54 | high | 3.988984 |
| 0.88 | 56 | high | 4.025352 |
| 0.88 | 60 | high | 4.094345 |
| 0.92 | 44 | high | 3.784190 |

**Point 2**

**Point 3**

**Point 4**

**Point 5**

**Point 6**

**Point 7**

**Point 8**

**Point 9**

**Point 10**

### Exercise 2

**Point 1**

**Point 2**

**Point 3**

**Point 4**

**Point 5**

**Point 6**

**Point 7**

**Point 8**

### Exercise 3

**Point 1**

**Point 2**

**Point 3**

**Point 4**

**Point 5**