Data_Exploration.R

015004

Tue Jan 22 10:50:52 2019

```
##################
# Load packages #
##################

library(JM)
```

```
## Loading required package: MASS
```

```
## Loading required package: nlme
```

```
## Loading required package: splines
```

```
## Loading required package: survival
```

```
####################
# Data Exploration #
####################

## What is the mean and sd for age?
mean(pbc2$age)
```

```
## [1] 49.26098
```

```
mean(pbc2$age, na.rm = T)
```

```
## [1] 49.26098
```

```
sd(pbc2$age)
```

```
## [1] 10.06196
```

```
## What is the mean and sd for follow-up years?
mean(pbc2$years)
```

```
## [1] 8.051561
```

```
mean(pbc2$years, na.rm = T)
```

```
## [1] 8.051561
```

```
sd(pbc2$years)
```

```
## [1] 3.480676
```

```
## What is the mean and sd for age in males?
tapply(pbc2.id$age, pbc2.id$sex, mean)
```

```
##     male   female
## 56.20346 49.21389
```

```
## What is the mean follow-up year per patient?
tapply(pbc2$year, pbc2$id, mean)
```

```
##         1         2         3         4         5         6         7
## 0.2628409 4.2221857 0.8781897 2.2799099 1.7851276 2.8177819 2.5713034
```

```
##         8         9        10        11        12        13        14
## 2.8358066 2.3346684 0.0000000 4.6793433 0.2464133 5.1473004 1.5934728
##        15        16        17        18        19        20        21
## 4.2144144 5.3023091 0.9464097 0.0000000 6.0805680 1.2724510 4.5800935
##        22        23        24        25        26        27        28
## 0.4983025 0.2491512 5.1563566 4.6775180 1.7531851 0.0000000 0.5056036
##        29        30        31        32        33        34        35
## 4.5356478 0.4362428 4.6006279 6.6180799 3.9056511 5.6536211 0.8987241
##        36        37        38        39        40        41        42
## 4.7662309 0.1971307 4.4825320 2.7396370 6.2638265 1.5373453 6.6629134
##        43        44        45        46        47        48        49
## 6.4834082 4.3590267 3.6831186 2.6564725 2.4829075 3.1440514 0.7241814
##        50        51        52        53        54        55        56
## 3.2121953 4.0863542 2.9764295 0.9902165 1.3092761 1.7084657 2.0767167
##        57        58        59        60        61        62        63
## 4.1370058 6.5580166 2.6448363 5.9474066 5.7283274 3.8152995 0.5238565
##        64        65        66        67        68        69        70
## 1.7550104 1.7454277 5.2917786 3.5932538 5.7570756 1.4647903 4.9267921
##        71        72        73        74        75        76        77
## 5.1246503 1.7641368 6.1583251 1.6797174 1.3114664 0.0000000 0.2573650
##        78        79        80        81        82        83        84
## 1.0082412 5.6590436 0.8987241 3.5560180 3.6255613 6.0738145 0.5065163
##        85        86        87        88        89        90        91
## 4.1414860 0.0000000 0.2491512 0.9336327 2.3156007 3.1589579 0.4992151
##        92        93        94        95        96        97        98
## 0.0000000 5.7786661 0.5156427 0.0000000 5.4731136 0.7892071 5.6675063
##        99       100       101       102       103       104       105
## 5.2502885 0.7139141 4.9143486 4.5034315 0.0000000 3.6964736 3.6512978
##       106       107       108       109       110       111       112
## 2.9695543 4.3941219 2.7108887 3.7342569 2.3510960 2.6954879 4.2213837
##       113       114       115       116       117       118       119
## 1.1296682 4.3826724 4.7710638 4.4463914 1.3563684 2.3714348 0.1546928
##       120       121       122       123       124       125       126
## 2.5428485 0.0000000 4.0860804 0.2121892 0.0000000 3.0984193 1.1570474
##       127       128       129       130       131       132       133
## 4.9404626 1.1811412 4.6346238 1.7157668 0.8809276 1.7960793 3.7734701
##       134       135       136       137       138       139       140
## 4.5787245 3.7985982 3.4248409 4.5248786 1.6336290 1.9005768 4.5538550
##       141       142       143       144       145       146       147
## 0.4964772 3.1200185 0.5037783 0.9637499 0.9500602 2.5928157 1.3897711
##       148       149       150       151       152       153       154
## 1.6792611 0.8962144 3.1985057 4.1307832 0.9418465 3.6967473 0.0000000
##       155       156       157       158       159       160       161
## 0.5101668 0.8521794 4.1524377 3.1294491 0.8973552 2.6438095 4.2505053
##       162       163       164       165       166       167       168
## 0.0000000 1.9521411 0.0000000 1.2178294 2.8104808 2.1552039 3.9713613
##       169       170       171       172       173       174       175
## 1.4193407 0.0000000 3.7287811 2.2849946 3.3262756 4.0359763 3.6737488
##       176       177       178       179       180       181       182
## 1.7499909 0.0000000 1.7810207 0.4727485 3.7375424 0.0000000 1.4072938
##       183       184       185       186       187       188       189
## 2.5965803 1.2331618 1.3881284 0.9527982 0.8911948 3.1376629 1.3125616
##       190       191       192       193       194       195       196
## 0.9753860 0.0000000 3.6597853 0.9042000 1.6394699 0.0000000 3.4391770
```

```
##       197       198       199       200       201       202       203
## 3.4102386 2.6284087 0.5411967 3.9779572 3.6066696 0.5160990 3.2642159
##       204       205       206       207       208       209       210
## 2.6722155 1.2331618 2.7129422 2.4731292 1.3069032 0.2970649 3.6053006
##       211       212       213       214       215       216       217
## 3.5606724 1.7404081 0.3408718 0.8754518 0.9322637 2.2818655 0.8829811
##       218       219       220       221       222       223       224
## 3.5234366 1.7207863 1.7626766 2.8269083 0.7837312 0.0000000 2.9733874
##       225       226       227       228       229       230       231
## 3.0324049 3.2897699 1.4086628 1.0007119 0.4718359 0.9165206 0.9822309
##       232       233       234       235       236       237       238
## 1.0328825 0.0000000 0.2450444 0.2601029 0.5900230 0.5284197 0.5156427
##       239       240       241       242       243       244       245
## 0.8396306 2.6817983 0.9815464 2.6287510 0.2505202 1.6064779 0.6050816
##       246       247       248       249       250       251       252
## 1.8321286 0.9288413 2.4360694 0.5156427 0.6105574 0.0000000 0.4992151
##       253       254       255       256       257       258       259
## 2.7707809 0.8446501 2.0151134 1.7385828 0.4827876 2.6783759 2.3201183
##       260       261       262       263       264       265       266
## 0.0000000 2.3847333 0.6050816 1.4144124 0.8836655 0.8761362 2.6526589
##       267       268       269       270       271       272       273
## 0.0000000 0.2245099 2.0988157 2.3965977 2.7043862 1.7874092 0.5996057
##       274       275       276       277       278       279       280
## 1.5124302 1.8350947 0.2833753 1.3054430 0.9412989 2.1089851 2.2141997
##       281       282       283       284       285       286       287
## 0.0000000 0.9391085 0.8631311 2.2302361 0.0000000 0.2601029 0.9281568
##       288       289       290       291       292       293       294
## 0.2724236 0.9548516 2.2271070 1.1488336 1.3224181 0.2683167 2.6029851
##       295       296       297       298       299       300       301
## 0.3326580 0.4745738 0.4654474 0.5256817 0.0000000 0.1984996 0.5868288
##       302       303       304       305       306       307       308
## 2.2741211 1.3778611 0.0000000 1.5277626 0.2464133 1.3076333 1.3859380
##       309       310       311       312
## 1.5272150 1.7654145 1.1512978 1.3393933
```

```
## What is the mean age of all patients atthe end of the study?
mean(tapply(pbc2$age, pbc2$id, tail, n = 1))
```

```
## [1] 50.02038
```

```
## What is the mean age of all patients at baseline?
mean(tapply(pbc2$age, pbc2$id, head, n = 1))
```

```
## [1] 50.02038
```