SWP1

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1:

Observations: 397 - Variables: 6

```
## [1] 397   6
```

2:

Nr. of professors with more than 40 yrs of experience: 21

```
## [1] 21
```

3:

Nr. of professors with salary higher than 150000: 54

```
## [1] 54
```

4:

Mean salary of professors with more than 20 yrs of experience: $122103.90

```
## [1] 122103.9
```

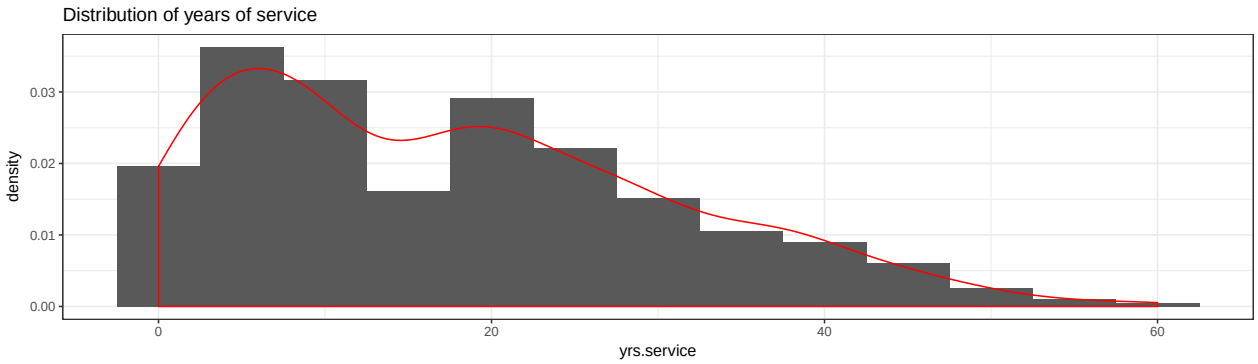
5:

```
##         rank     discipline yrs.since.phd    yrs.service        sex
##  AsstProf : 67   A:181      Min.   : 1.00   Min.   : 0.00   Female: 39
##  AssocProf: 64   B:216      1st Qu.:12.00   1st Qu.: 7.00   Male  :358
##  Prof     :266              Median :21.00   Median :16.00
##                             Mean   :22.31   Mean   :17.61
##                             3rd Qu.:32.00   3rd Qu.:27.00
##                             Max.   :56.00   Max.   :60.00
##      salary
##  Min.   : 57800
##  1st Qu.: 91000
##  Median :107300
##  Mean   :113706
##  3rd Qu.:134185
##  Max.   :231545
```

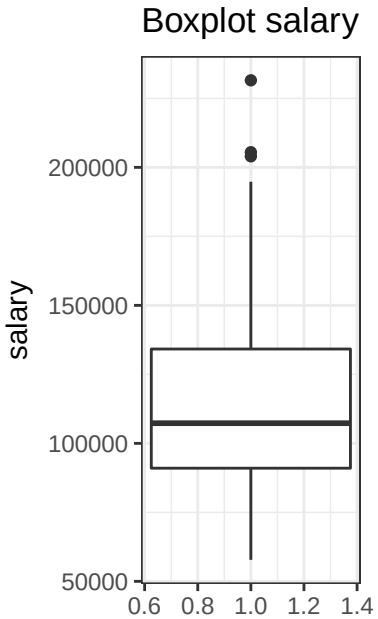
6:

```
## # A tibble: 6 x 4
##      sex      rank     n       prop
##   <fctr>    <fctr> <int>      <dbl>
## 1 Female  AsstProf    11 0.02770781
## 2 Female AssocProf    10 0.02518892
## 3 Female      Prof    18 0.04534005
## 4   Male  AsstProf    56 0.14105793
## 5   Male AssocProf    54 0.13602015
## 6   Male      Prof   248 0.62468514
```

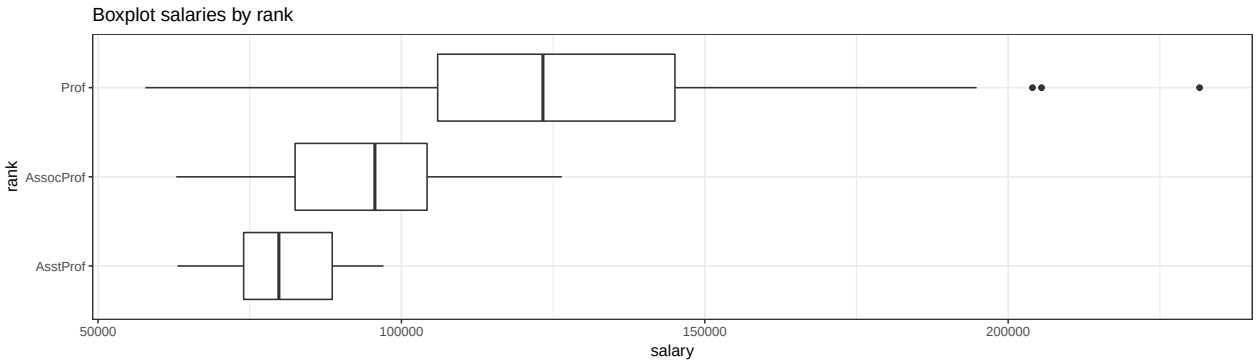
7:



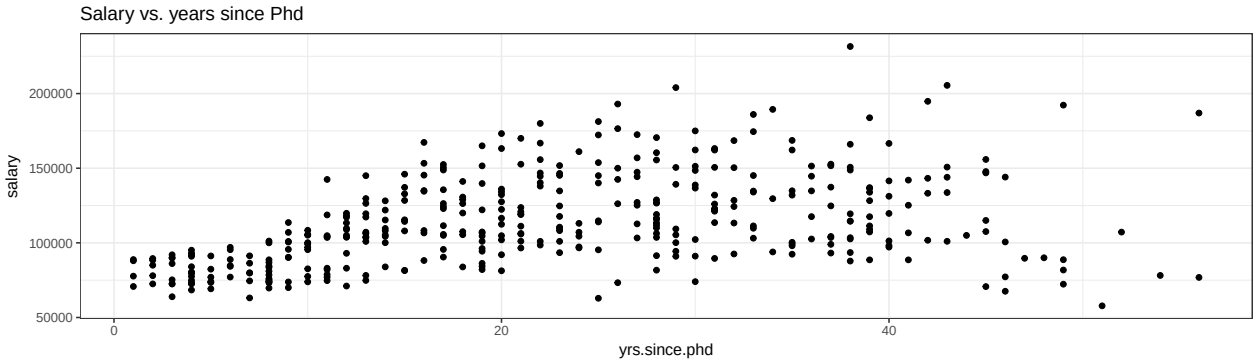
8:



9:



10:



11:

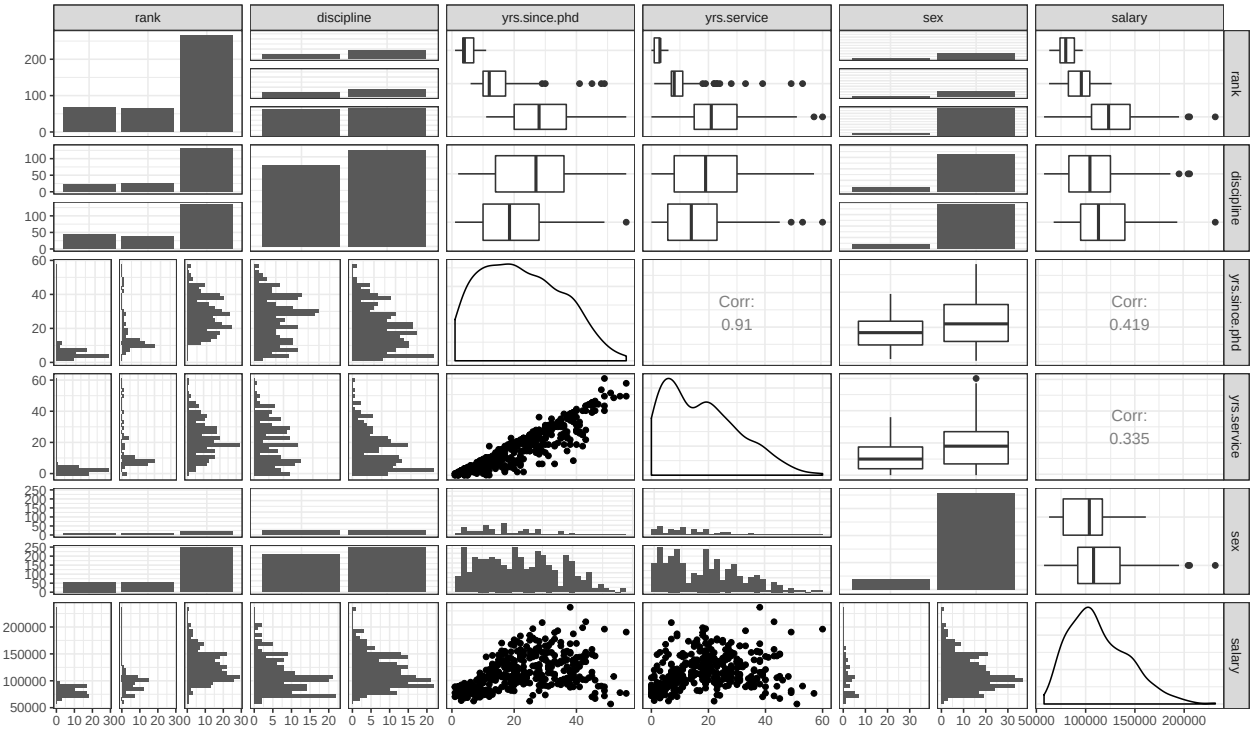
Correlation between salary and years since phd: 0.41

```
## [1] 0.4192311
```

```
##
## Call:
## lm(formula = "salary ~ yrs.since.phd", data = Salaries)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -84171 -19432  -2858  16086 102383
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    91718.7     2765.8  33.162   <2e-16 ***
## yrs.since.phd    985.3      107.4   9.177   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 27530 on 395 degrees of freedom
## Multiple R-squared:  0.1758, Adjusted R-squared:  0.1737
```

```
## F-statistic: 84.23 on 1 and 395 DF,  p-value: < 2.2e-16
```

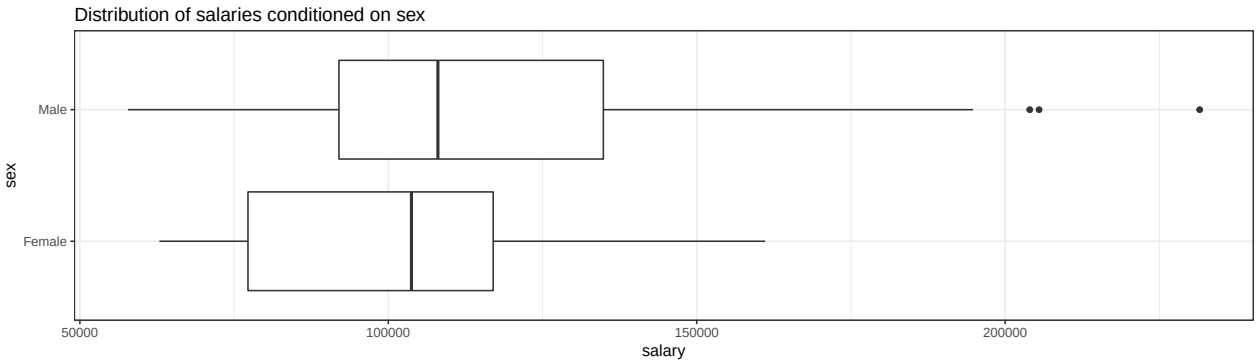
12:



13:

```
## # A tibble: 6 x 3
## # Groups:   rank [?]
##        rank    sex mean.salary
##      <fctr> <fctr>       <dbl>
## 1  AsstProf Female    78049.91
## 2  AsstProf   Male    81311.46
## 3 AssocProf Female    88512.80
## 4 AssocProf   Male    94869.70
## 5      Prof Female   121967.61
## 6      Prof   Male   127120.82
```

14:



15:

```
##
##  Pearson's Chi-squared test with Yates' continuity correction
##
## data:  cont
## X-squared = 2.0875e-29, df = 1, p-value = 1
```