

# SWP1 - Group 6

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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
```

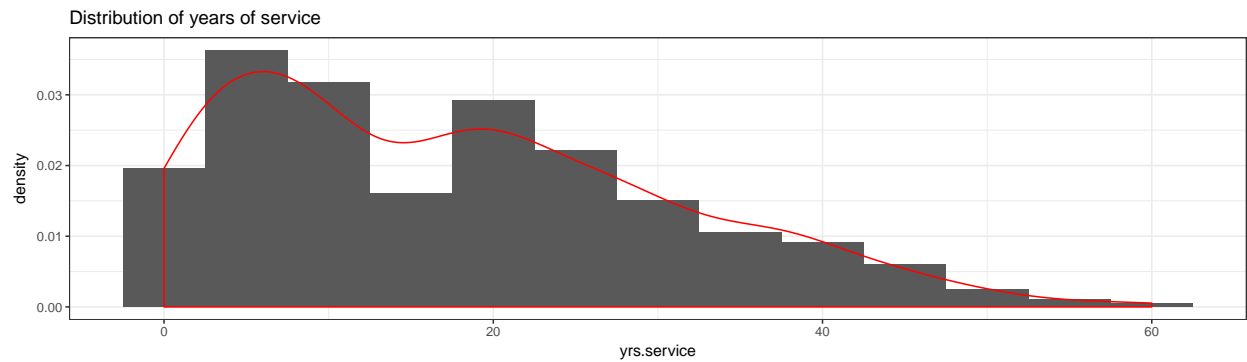
**5:**

```
##      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
```

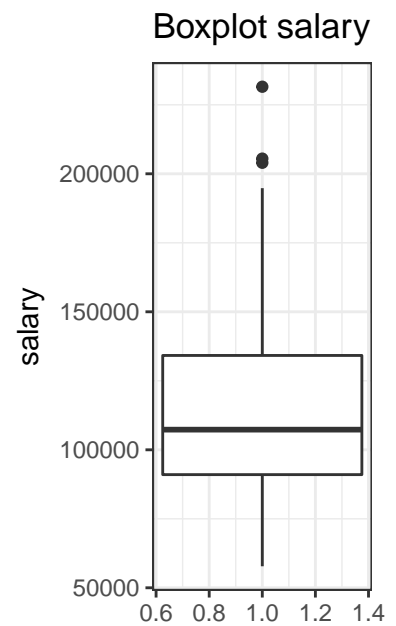
6:

```
## # A tibble: 6 x 4
##   sex    rank      n  prop
##   <fct> <fct>   <int> <dbl>
## 1 Female AsstProf    11 0.0277
## 2 Female AssocProf   10 0.0252
## 3 Female Prof       18 0.0453
## 4 Male   AsstProf    56 0.141
## 5 Male   AssocProf   54 0.136
## 6 Male   Prof      248 0.625
```

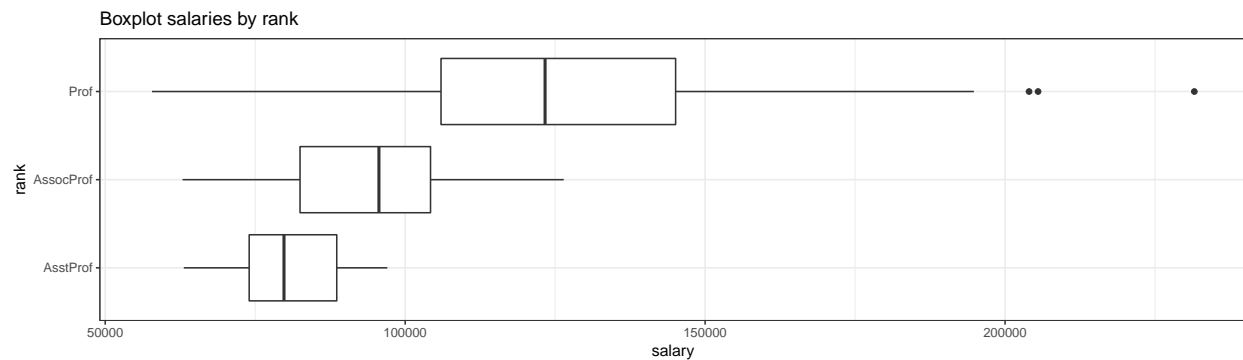
7:



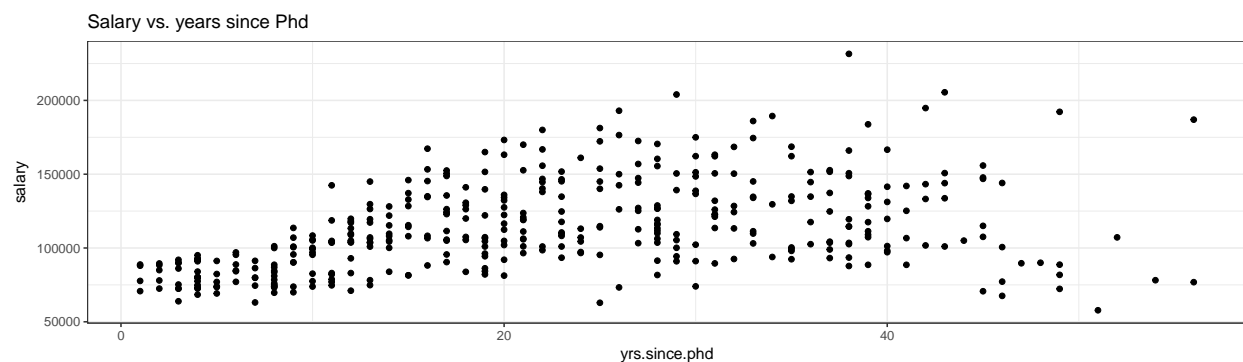
8:



9:



10:



11:

Correlation between salary and years since phd: 0.41

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

```
## [1] 0.3347447
```

```
##
```

```
## 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|)
```

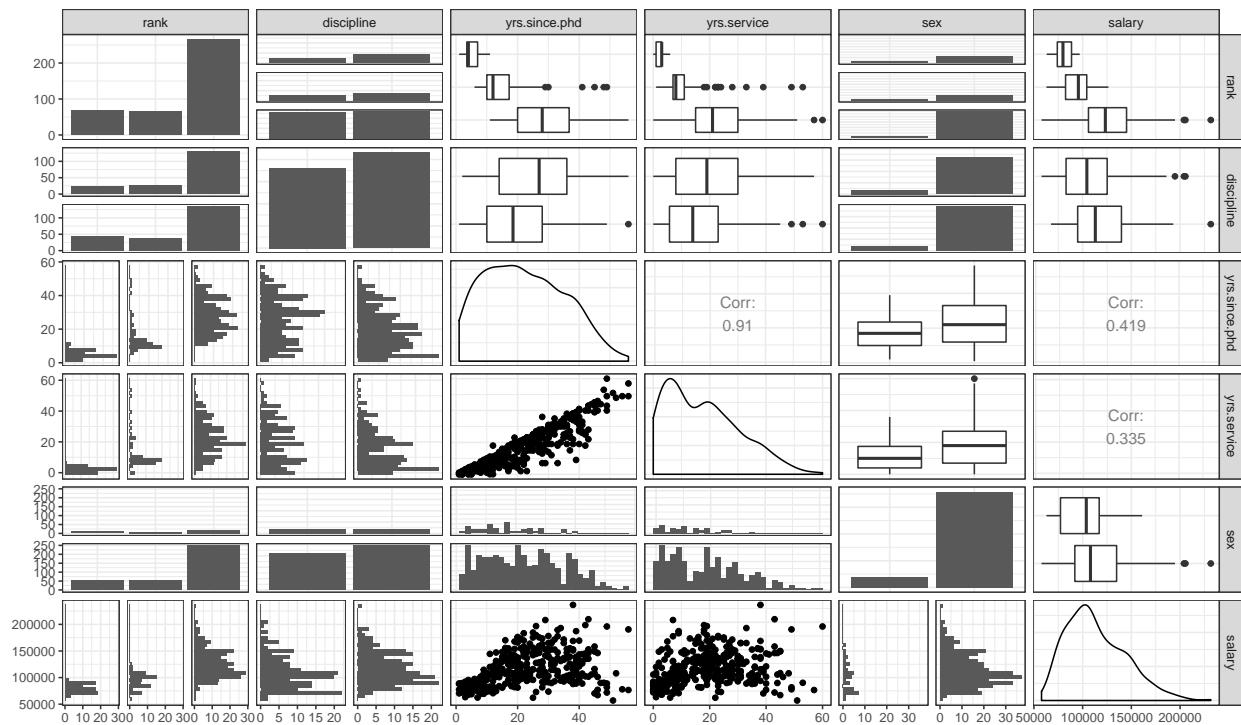
```
## (Intercept)   91718.7    2765.8   33.162  <2e-16 ***
```

```
## 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
```

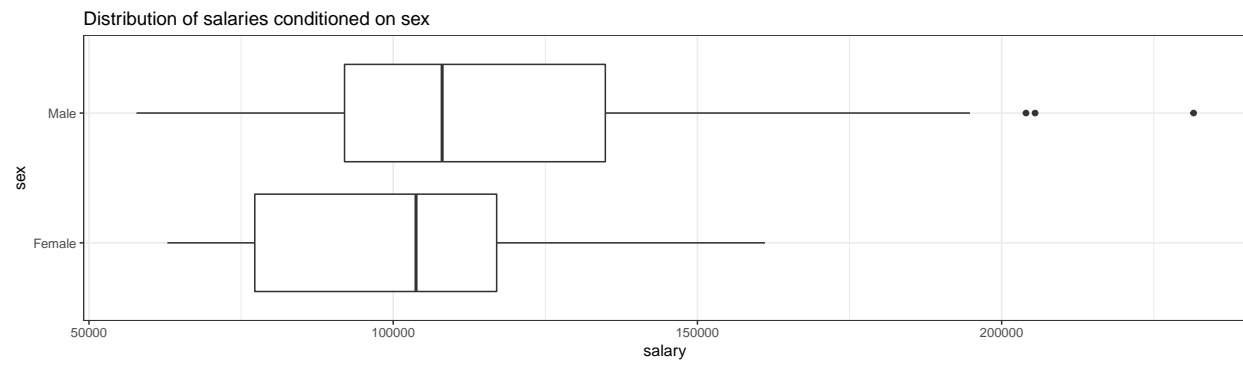
12:



13:

```
## # A tibble: 6 x 3
## # Groups:   rank [?]
##   rank    sex  mean.salary
##   <fct>   <fct>      <dbl>
## 1 AsstProf Female    78050.
## 2 AsstProf Male     81311.
## 3 AssocProf Female   88513.
## 4 AssocProf Male    94870.
## 5 Prof    Female   121968.
## 6 Prof    Male    127121.
```

14:



15:

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