First_Year_Project

2023-02-07

```
## Indlæser krævet pakke: pacman
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## Indlæser krævet pakke: ggplot2
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## Indlæser krævet pakke: ggpmisc
```

```
## Indlæser krævet pakke: ggpp
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```
##
## Vedhæfter pakke: 'ggpp'
```

```
## Det følgende objekt er maskeret fra 'package:ggplot2':
##
##     annotate
```

```
## Indlæser krævet pakke: ggpubr
```

```
## Indlæser krævet pakke: ggsignif
```

Question one

Begin with describing and fitting a full model in which the intercepts and slopes of the extinction times versus numbers of pairs may be different in all four combinations of size and migratory status.
We start by importing the dataset directly from s

```r
head(data <- read.csv('Factors Affecting Extinction.csv', header=T))
```

```
##          Species Time Pairs Size Status
## 1     Sparrowhawk 3.03  1.00    L      R
## 2         Buzzard 5.46  2.00    L      R
## 3         Kestrel 4.10  1.21    L      R
## 4       Peregrine 1.68  1.13    L      R
## 5 Grey_partridge 8.85  5.17    L      R
## 6           Quail 1.49  1.00    L      M
```

There are four different combinations of Size and Status, LR, LM, SR and SM. If we want to find the correlation between *extinction time* as a function of *pairs*, we can make a regression line with *pairs* as the predictor value and *extinction time* as the predicted value.

```
ggplot(data, aes(x = Pairs, y = Time)) +
  geom_point() +
  facet_grid(Size ~ Status) +
  theme(legend.position = "top") +
  geom_smooth(method = "lm", formula = y ~ x) +

  stat_poly_eq(formula = y ~ x,
  aes(label = paste(after_stat(eq.label), after_stat(rr.label), sep = "~~~")),
  parse = TRUE)
```