For mixed effects linear modelling in R, we need to install the package *lme4*. This is the mixed effects model equivalent of *lm* which we used previously. We also want the *lmerTest* package and the *emmeans* package.

```
> install.packages("lme4")

> install.packages("lmerTest")

> install.packages("emmeans")
```

Gives us p-values for our model estimates.

Allows us to do pairwise comparisons.

Remember then to load them:

```
> library(lme4)

> library(lmerTest)

> library(emmeans)
```

```
> mixed_model <- lmer(rt ~ condition + (1 | subject) + (1 | item), data = fulldata)
> summary(mixed_model)
Linear mixed model fit by REML. t-tests use Satterthwaite's method ['lmerModLmerTest']
Formula: rt ~ condition + (1 | subject) + (1 | item)
   Data: fulldata

REML criterion at convergence: 1276.5

Scaled residuals:
     Min       1Q   Median       3Q      Max
-2.59882 -0.62360  0.07231  0.57203  2.91523

Random effects:
 Groups   Name        Variance Std.Dev.
 subject  (Intercept)  7952.1   89.17
 item     (Intercept)   436.3   20.89
 Residual             20938.7  144.70
Number of obs: 100, groups:  subject, 10; item, 5

Fixed effects:
               Estimate Std. Error      df t value Pr(>|t|)
(Intercept)     1067.99      36.07   12.62   29.61 4.82e-13 ***
conditionsmall   187.83      28.94   85.00    6.49 5.46e-09 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Correlation of Fixed Effects:
            (Intr)
conditnsmll -0.401
```

More variability in subjects than in scenarios.

The intercept corresponds to the RT to the Large Condition - going from Large to Small contexts increases RT by around 188 ms.