Lab 14 Activity

For today's activity, we'll work with a dataset that contains weight measurements on multiple occasions for Asian children born in Britain. Load in the necessary packages and the dataset using the following code:

```
library(tidyverse)
library(lmerTest)
dat <- rio::import("https://fabio-setti.netlify.app/data/Lab_14_asian.dta")
```

id: child identifier

occ: numbered occasion of each measurement

age: child's age (in years) at each measurement

weight: child's measured weight (kg)

brthwt: child's birthweight

gender: 1 = male, 2 = female

1. Fit a simple (no covariates) model with weight varying by `id` using these data. Do you notice something strange about some parameters? Considering the nature of these data, what do you think might be the problem?

2. Add one covariate to the model that you think will lead to the highest ICC. Calculate the residual ICC.

- Additionally, has the problem from the previous question been fixed?

3. Given the variables available in this dataset, what combination of variables do you think might give the most realistic and accurate model of weight? Be creative, and remember what you learned about regression - many of the same principles apply! What ICC do you get?

4. Create a compelling plot of these data using `ggplot`.