# 1st-step: The Data------

## Import and rename-----

library(readxl)

my\_data <- read\_excel(file.choose())

## Checking------

head(my\_data)

tail(my\_data)

View(my\_data)

table(my\_data$Tret) # Balanced

## data type------

str(my\_data) # before modification

my\_data$treatment <- as.character(my\_data$Tret)

my\_data$block <- as.character(my\_data$Rep)

my\_data$DependentVar <- as.numeric(my\_data$DV)

str(my\_data) # after modification

# 2nd-step: The ANOVA test ----

# APPROACH I: Using Base R (type I)------

## Using aov() & anova() -----

### 1st -build a model-----

mod1 <- aov(DependentVar~treatment+block,data=my\_data)

### 2nd-ANOVA table-----

anova(mod1)

## Using lm() & anova() -----

### 1st -build a model-----

mod2 <- lm(DependentVar~treatment+block,data=my\_data)

### 2nd-ANOVA table-----

anova(mod2)

#APPROACH II: Using a package ------

library(car) # type II and III

#type II anova table-----

### 1st -build a model----

mod3 <- lm(DependentVar~treatment+block,data=my\_data)

### 2nd-Anova table-----

Anova(mod3)

# type III anova table----

### 1st -build a model----

mod4 <- lm(DependentVar~treatment+block,data=my\_data)

### 2nd-Anova table-----

Anova(mod4, type =3)