library(stringr)  
options(knitr.kable.NA = '')  
root <- fs::path\_abs(".")  
create\_Experiments\_instructions\_DF <- function(variants, repeats, parameter, unit, variant\_text, nor\_text, variants\_filenames\_text = "Variants/Filenames") {  
 # Check if variants and repeats are of the same length  
 if (length(variants) != length(repeats)) {  
 stop("Length of variants and repeats must be the same.")  
 }  
   
 # Create the dataframe  
 df <- data.frame(  
 Variant = rep(variants, times = repeats),  
 Number\_of\_Repeats = unlist(lapply(repeats, function(r) c(r, rep(NA, r - 1)))),  
 Variants\_Filenames = unlist(lapply(seq\_along(variants), function(i) {  
 variant <- variants[i]  
 repeatCount <- repeats[i]  
 c(paste(parameter, variant, 1, sep = "-"),   
 if (repeatCount > 1) paste(parameter, variant, 2:repeatCount, sep = "-") else NULL)  
 }))  
 )  
   
 # Replace dots with 'd' in Variants\_Filenames column  
 df$Variants\_Filenames <- gsub("\\.", "d", df$Variants\_Filenames)  
   
 # Initialize a last seen variant variable  
 last\_seen\_variant <- ""  
   
 # Format the Variant column  
 df$Variant <- sapply(df$Variant, function(v) {  
 if (v == last\_seen\_variant) {  
 NA # Leave cell empty if it is the same as the last seen variant  
 } else {  
 last\_seen\_variant <<- v  
 v # Display the variant if it is different from the last seen  
 }  
 })  
 rm(last\_seen\_variant)  
 # Add unit to header  
 variant\_text <- paste0(variant\_text, " [", unit, "]")  
   
 # Rename columns  
 colnames(df) <- c(variant\_text, nor\_text, variants\_filenames\_text)  
   
 return(df)  
}  
  
  
variants <- c(-10,-5,0,5,10)  
repeats <- c(7,7,7,7,7)  
parameter <- "y-axis-tilt-gfa"  
unit <- "°"  
  
df <- create\_Experiments\_instructions\_DF(variants, repeats, parameter, unit, "degrees off of normal", "n","Variants/Filenames")  
knitr::kable(df, caption = "Frontal images: Overview on the groups and repeats for which an image must be taken. For each \_Variant\_, its value (e.g. -5, 0, 10) denotes the respective angle in degrees of the camera relative to the subject. 0 degrees denotes the lens camera's sensor being perpendicular to the calibration-plate. Positive tilts point the camera upwards toward the ceiling, negative tilts point the camera towards the floor.")

Frontal images: Overview on the groups and repeats for which an image must be taken. For each *Variant*, its value (e.g. -5, 0, 10) denotes the respective angle in degrees of the camera relative to the subject. 0 degrees denotes the lens camera’s sensor being perpendicular to the calibration-plate. Positive tilts point the camera upwards toward the ceiling, negative tilts point the camera towards the floor.

| degrees off of normal [°] | n | Variants/Filenames |
| --- | --- | --- |
| -10 | 7 | y-axis-tilt-gfa–10-1 |
|  |  | y-axis-tilt-gfa–10-2 |
|  |  | y-axis-tilt-gfa–10-3 |
|  |  | y-axis-tilt-gfa–10-4 |
|  |  | y-axis-tilt-gfa–10-5 |
|  |  | y-axis-tilt-gfa–10-6 |
|  |  | y-axis-tilt-gfa–10-7 |
| -5 | 7 | y-axis-tilt-gfa–5-1 |
|  |  | y-axis-tilt-gfa–5-2 |
|  |  | y-axis-tilt-gfa–5-3 |
|  |  | y-axis-tilt-gfa–5-4 |
|  |  | y-axis-tilt-gfa–5-5 |
|  |  | y-axis-tilt-gfa–5-6 |
|  |  | y-axis-tilt-gfa–5-7 |
| 0 | 7 | y-axis-tilt-gfa-0-1 |
|  |  | y-axis-tilt-gfa-0-2 |
|  |  | y-axis-tilt-gfa-0-3 |
|  |  | y-axis-tilt-gfa-0-4 |
|  |  | y-axis-tilt-gfa-0-5 |
|  |  | y-axis-tilt-gfa-0-6 |
|  |  | y-axis-tilt-gfa-0-7 |
| 5 | 7 | y-axis-tilt-gfa-5-1 |
|  |  | y-axis-tilt-gfa-5-2 |
|  |  | y-axis-tilt-gfa-5-3 |
|  |  | y-axis-tilt-gfa-5-4 |
|  |  | y-axis-tilt-gfa-5-5 |
|  |  | y-axis-tilt-gfa-5-6 |
|  |  | y-axis-tilt-gfa-5-7 |
| 10 | 7 | y-axis-tilt-gfa-10-1 |
|  |  | y-axis-tilt-gfa-10-2 |
|  |  | y-axis-tilt-gfa-10-3 |
|  |  | y-axis-tilt-gfa-10-4 |
|  |  | y-axis-tilt-gfa-10-5 |
|  |  | y-axis-tilt-gfa-10-6 |
|  |  | y-axis-tilt-gfa-10-7 |

print(df)

degrees off of normal [°] n Variants/Filenames  
1 -10 7 y-axis-tilt-gfa--10-1  
2 NA NA y-axis-tilt-gfa--10-2  
3 NA NA y-axis-tilt-gfa--10-3  
4 NA NA y-axis-tilt-gfa--10-4  
5 NA NA y-axis-tilt-gfa--10-5  
6 NA NA y-axis-tilt-gfa--10-6  
7 NA NA y-axis-tilt-gfa--10-7  
8 -5 7 y-axis-tilt-gfa--5-1  
9 NA NA y-axis-tilt-gfa--5-2  
10 NA NA y-axis-tilt-gfa--5-3  
11 NA NA y-axis-tilt-gfa--5-4  
12 NA NA y-axis-tilt-gfa--5-5  
13 NA NA y-axis-tilt-gfa--5-6  
14 NA NA y-axis-tilt-gfa--5-7  
15 0 7 y-axis-tilt-gfa-0-1  
16 NA NA y-axis-tilt-gfa-0-2  
17 NA NA y-axis-tilt-gfa-0-3  
18 NA NA y-axis-tilt-gfa-0-4  
19 NA NA y-axis-tilt-gfa-0-5  
20 NA NA y-axis-tilt-gfa-0-6  
21 NA NA y-axis-tilt-gfa-0-7  
22 5 7 y-axis-tilt-gfa-5-1  
23 NA NA y-axis-tilt-gfa-5-2  
24 NA NA y-axis-tilt-gfa-5-3  
25 NA NA y-axis-tilt-gfa-5-4  
26 NA NA y-axis-tilt-gfa-5-5  
27 NA NA y-axis-tilt-gfa-5-6  
28 NA NA y-axis-tilt-gfa-5-7  
29 10 7 y-axis-tilt-gfa-10-1  
30 NA NA y-axis-tilt-gfa-10-2  
31 NA NA y-axis-tilt-gfa-10-3  
32 NA NA y-axis-tilt-gfa-10-4  
33 NA NA y-axis-tilt-gfa-10-5  
34 NA NA y-axis-tilt-gfa-10-6  
35 NA NA y-axis-tilt-gfa-10-7