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title: "Barplot with one-way ANOVA and TukeyHSD test lettering"
author: "Gulfam"
date: "12/27/2021"
output:
  html_document: default
  pdf_document: default
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```{r}
library(ggplot2)
#install.packages('ggthemes')
library(ggthemes)
#install.packages('multcompView')
library(multcompView)
chickwts
#calculate mean and sd and plot

mean_data <- group_by(chickwts , feed) %>%
  summarise(mean=mean(weight), sd = sd (weight)) %>%
  arrange(desc(mean))
#check this data
tibble(mean_data)

#for standard error use this.......inside summarise function....se =
sd(weight)/sqrt(no. of treatments)
library(stats)
anova <- aov(weight~feed, data=chickwts)
summary(anova)

tukey <- TukeyHSD(anova)
tukey

gl <- multcompLetters4(anova,tukey)
gl

gl <- as.data.frame.list(gl$feed)
gl
mean_data$gl <- gl$Letters

p <- ggplot(mean_data , aes(feed,mean)) + geom_bar(stat =
'identity',aes(fill = feed),show.legend = FALSE,width = .4)+
  geom_errorbar(aes(ymin=mean-sd,ymax=mean+sd),width=.1)+
  geom_text(aes(label=gl, y = mean + sd), vjust = -.4) +
  scale_fill_brewer(palette = 'BrBG', direction = 1) +
  labs(x = 'feed type',
       y = 'chicken weight(g)',
       title = 'Bar Plot',
       subtitle = 'Aesthetic',
       fill = 'feed type') +
  ylim(0,410) + ggthemes::theme_par()
p
tiff('Barplot.tiff', units = 'in', width = 10,height = 6, res = 300,
compression = 'lzw')
p
dev.off()
```
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