```
library("readxl")
library("ggplot2")
library("hrbrthemes")
library("dplyr")
library("tidyr")
library("viridis")

d1=read.table("student-mat.csv",sep=";",header=TRUE)
head(d1)

sum(is.na(d1))

school = d1$school
G3 = d1$G3

ggplot(d1, aes(x=school , y=G3 )) + geom_point()+geom_jitter(aes(y=G3 ,
x= school))

data <- d1[, c('school' , 'G3')]
head(data)

#1
ggplot(data, aes(x = G3, fill = school)) +
  geom_histogram(binwidth = 1, position = "dodge") +
  labs(title = "Distribution of Final Grades by School", x = "Final Grade
(G3)", y = "Frequency") +
  theme_minimal()

#2
ggplot(d1, aes(x = sex, y = G3, fill = sex)) +
  geom_boxplot() +
  labs(title = "Final Grades by Gender", x = "Gender", y = "Final Grade
(G3)") +
  theme_minimal()

#3
ggplot(d1, aes(x = address, y = G3, fill = address)) +
  geom_boxplot() +
  labs(title = "Final Grades by type of address", x = "Address Type", y =
"Final Grade (G3)") +
  theme_minimal()

#4
ggplot(d1, aes(x = G3, fill = famsize)) +
  geom_histogram(binwidth = 1, position = "dodge") +
  labs(title = "Final Grades Distribution by Family Size", x = "Final
Grade (G3)", y = "Frequency") +
  theme_minimal()

#5
ggplot(d1, aes(x = Pstatus, y = G3, fill = Pstatus)) +
  geom_boxplot() +
  labs(title = "Final Grades by Parents' Cohabitation Status", x =
"Parents' Cohabitation Status", y = "Final Grade (G3)") +
```

```
  theme_minimal()

#6
ggplot(d1, aes(x = factor(Medu), y = G3, fill = factor(Medu))) +
  geom_boxplot() +
  labs(title = "Final Grades by Mother's Education Level", x = "Mother's
Education Level", y = "Final Grade (G3)") +
  theme_minimal()

ggplot(d1, aes(x = factor(Fedu), y = G3, fill = factor(Fedu))) +
  geom_boxplot() +
  labs(title = "Final Grades by Father's Education Level", x = "Father's
Education Level", y = "Final Grade (G3)") +
  theme_minimal()

#7
ggplot(d1, aes(x = factor(studytime), y = G3, fill = factor(studytime)))
+
  geom_boxplot() +
  labs(title = "Final Grades by Weekly Study Time", x = "Weekly Study
Time", y = "Final Grade (G3)") +
  theme_minimal()

#8
ggplot(d1, aes(x = failures, y = G3)) +
  geom_point() +
  geom_smooth(method = "lm", se = FALSE, color = "red") +
  labs(title = "Final Grades by Number of Past Class Failures",
       x = "Number of past Failures", y = "Final Grade (G3)") +
  theme_minimal()

#9
ggplot(d1, aes(x = schoolsup, y = G3, fill = schoolsup)) +
  geom_boxplot() +
  labs(title = "Final Grades by Educational Support", x = "Educational
Support", y = "Final Grade (G3)") +
  theme_minimal()

#10
ggplot(d1, aes(x = factor(age), y = G3, fill = factor(age))) +
  geom_boxplot() +
  labs(title = "Final Grades Distribution Across Age Groups", x = "Age
Group", y = "Final Grade (G3)") +
  theme_minimal()
```