```
# Install necessary libraries
if(!require(ggplot2)) install.packages("ggplot2")
if(!require(reshape2)) install.packages("reshape2")
if(!require(ggwordcloud)) install.packages("ggwordcloud")
if(!require(car)) install.packages("car")
install.packages("plotly")
install.packages("rgl")

# Load libraries
library(ggplot2)
library(reshape2)
library(ggwordcloud)
library(car)   # For scatter3d plot
library(plotly)
library(rgl)
# Load the dataset
housing_data <- read.csv("/content/Housing.csv")

# Word Chart: Showing frequencies of furnishing status
ggplot(housing_data, aes(label = furnishingstatus)) +
  geom_text_wordcloud(area_corr_power = 1) +
  theme_minimal() +
  labs(title = "Word Chart for Furnishing Status")

# Box and Whisker Plot: Price distribution by number of bedrooms
ggplot(housing_data, aes(x = as.factor(bedrooms), y = price)) +
  geom_boxplot() +
  labs(title = "Box and Whisker Plot: Price vs. Bedrooms",
       x = "Number of Bedrooms", y = "Price")

# Violin Plot: Price distribution by number of stories
ggplot(housing_data, aes(x = as.factor(stories), y = price, fill = as.factor(stories))) +
  geom_violin(trim = FALSE) +
  labs(title = "Violin Plot: Price vs. Stories",
       x = "Number of Stories", y = "Price") +
  theme(legend.position = "none")

# Regression Plot: Linear regression of Price vs Area
ggplot(housing_data, aes(x = bedrooms, y = price)) +
  geom_point() +
  geom_smooth(method = "lm", se = FALSE, color = "blue") +
  labs(title = "Linear Regression: Price vs. Bedrooms")

# Nonlinear Regression Plot: Price vs Area with polynomial regression
ggplot(housing_data, aes(x = area, y = price)) +
  geom_point() +
  geom_smooth(method = "loess", color = "red") +
  labs(title = "Nonlinear Regression: Price vs. Area")

# 3D Scatter Plot: Price, Area, and Bedrooms
scatter3d(housing_data$price, housing_data$area, housing_data$bedrooms, fit = "linear", surface = FALSE)

# Jitter Plot: Price vs. Area with jitter to show overlapping points
ggplot(housing_data, aes(x = area, y = price)) +
  geom_jitter(color = "darkgreen", width = 0.5) +
  labs(title = "Jitter Plot: Price vs. Area", x = "Area", y = "Price")
```

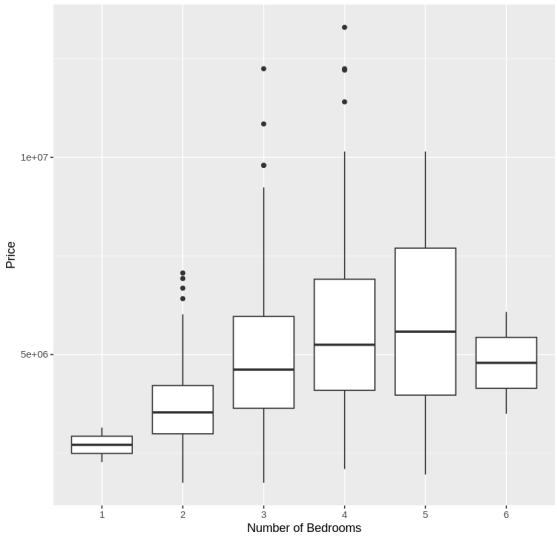
```
Installing package into ‘/usr/local/lib/R/site-library’
(as ‘lib’ is unspecified)

Installing package into ‘/usr/local/lib/R/site-library’
(as ‘lib’ is unspecified)

Warning message in geom_text_wordcloud(area_corr_power = 1):
“Ignoring unknown parameters: `area_corr_power`”
Warning message in wordcloud_boxes(data_points = points_valid_first, boxes = boxes, :
“Some words could not fit on page. They have been placed at their original positions.”
```

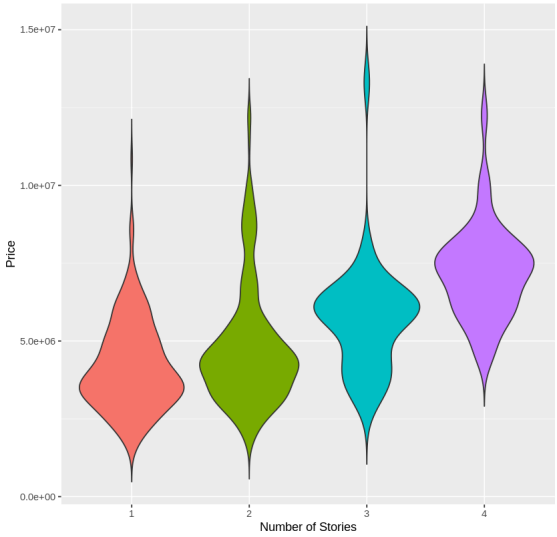
Word Chart for Furnishing Status

Box and Whisker Plot: Price vs. Bedrooms



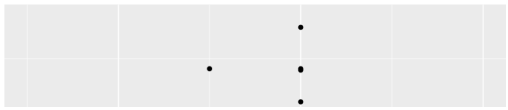

```
`geom_smooth()` using formula = 'y ~ x'
```

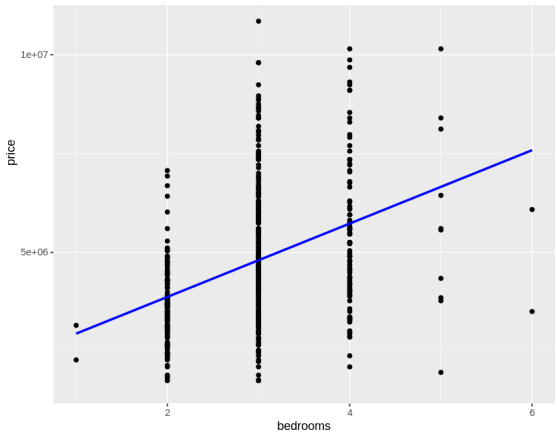
Violin Plot: Price vs. Stories



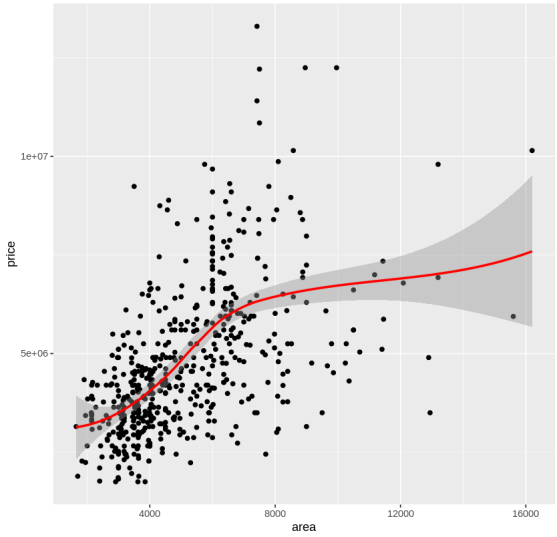

```
`geom_smooth()` using formula = 'y ~ x'
```

Linear Regression: Price vs. Bedrooms





Nonlinear Regression: Price vs. Area



Jitter Plot: Price vs. Area