Exp 5

```
install.packages("wordcloud")
install.packages("plot3D")
```

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

also installing the dependency ‘misc3d’
```

```
library(dplyr)
library(wordcloud)
library(RColorBrewer)
library(gridExtra)
library(plot3D)
```

```
Warning message:
“no DISPLAY variable so Tk is not available”
```

```
df <- read.csv("/content/Housing.csv")
```

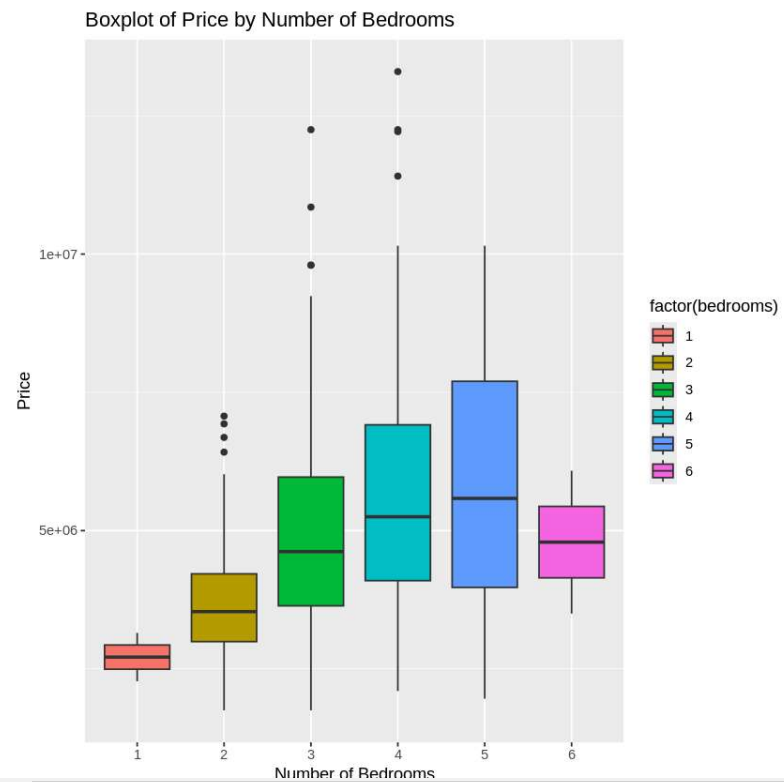
```
colnames(df)
```

```
'price' · 'area' · 'bedrooms' · 'bathrooms' · 'stories' · 'mainroad' · 'guestroom' · 'basement' · 'hotwaterheating' · 'airconditioning' · 'parking' · 'prefarea' · 'furnishingstatus'
```

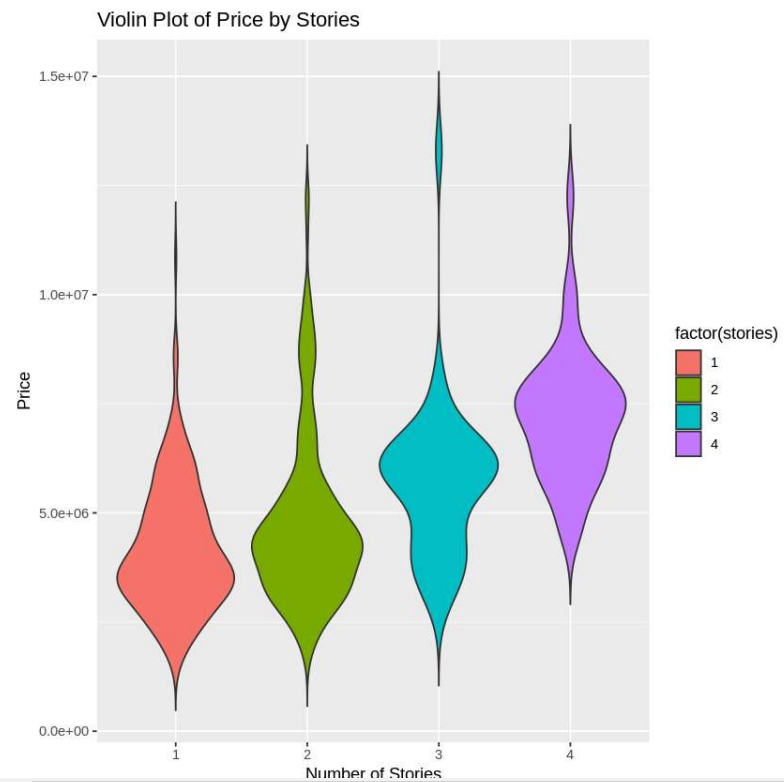
```
furnishing_freq <- table(df$furnishingstatus)
wordcloud(names(furnishing_freq), furnishing_freq, scale=c(3,0.5), colors=brewer.pal(8, "Dark2"))
```

furnished
unfurnished
semi-furnished

```
ggplot(df, aes(x=factor(bedrooms), y=price)) +
  geom_boxplot(aes(fill=factor(bedrooms))) +
  labs(title="Boxplot of Price by Number of Bedrooms", x="Number of Bedrooms", y="Price")
```

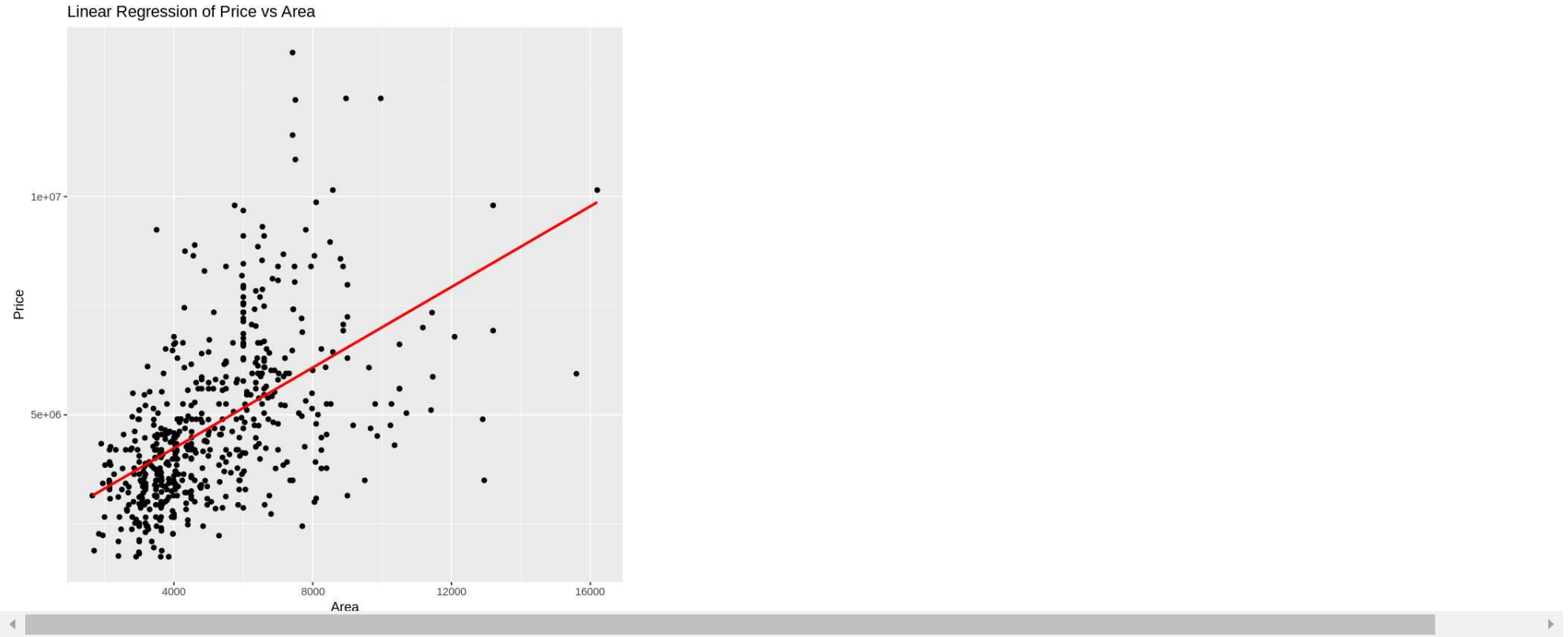



```
ggplot(df, aes(x=factor(stories), y=price, fill=factor(stories))) +
  geom_violin(trim=FALSE) +
  labs(title="Violin Plot of Price by Stories", x="Number of Stories", y="Price")
```



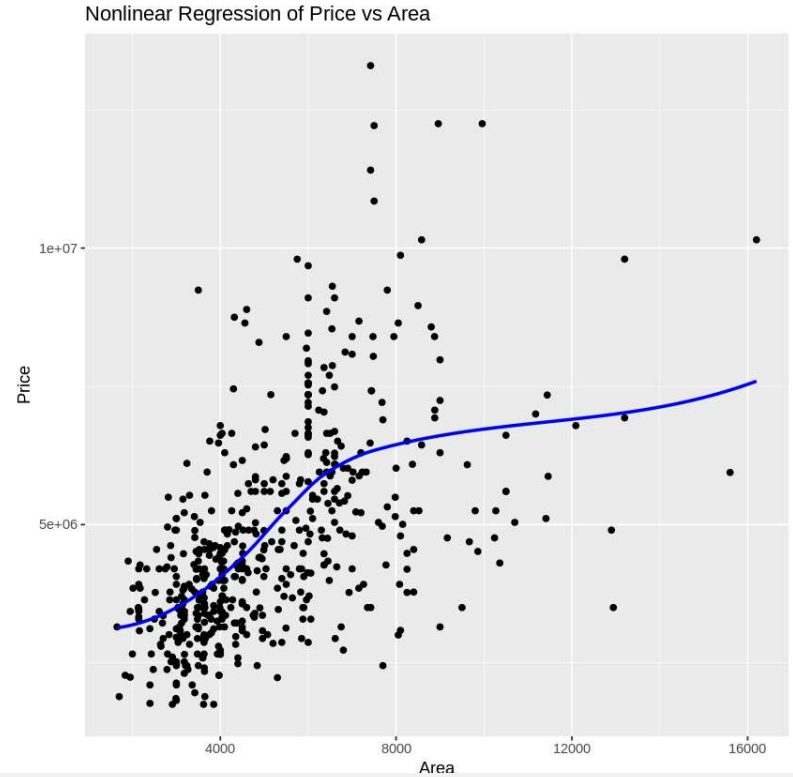

```
ggplot(df, aes(x=area, y=price)) +
  geom_point() +
  geom_smooth(method="lm", se=FALSE, color="red") +
  labs(title="Linear Regression of Price vs Area", x="Area", y="Price")
```

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

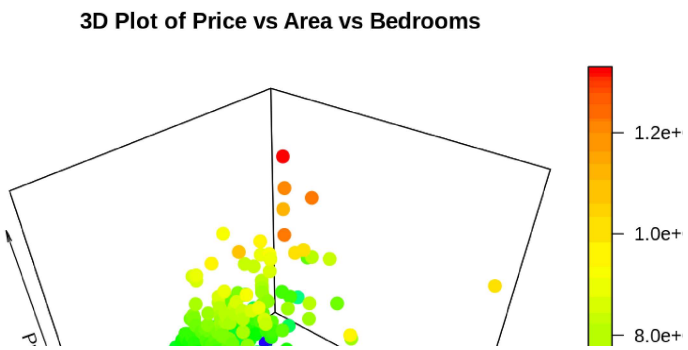



```
ggplot(df, aes(x=area, y=price)) +
  geom_point() +
  geom_smooth(method="loess", se=FALSE, color="blue") +
  labs(title="Nonlinear Regression of Price vs Area", x="Area", y="Price")
```

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




```
scatter3D(x = df$area, y = df$bedrooms, z = df$price,
          xlab = "Area", ylab = "Bedrooms", zlab = "Price",
          col = rainbow(100)[as.numeric(cut(df$price, breaks = 100))],
          pch = 19, cex = 1.5,
          main = "3D Plot of Price vs Area vs Bedrooms")
```


3D Plot of Price vs Area vs Bedrooms
1.2e+
1.0e+
8.0e+