Part 4

2025-03-18

```
library(ggplot2)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
mobiles_dataset<- "C:/Users/asus/Desktop/Homework 3/mobiles_dataset.csv"
```

```
data<- read.csv(mobiles_dataset)
```

```
head(data)
```

```
##   Company.Name           Model.Name Mobile.Weight RAM Front.Camera Back.Camera
## 1        Apple      iPhone 16 128GB          174g 6GB         12MP        48MP
## 2        Apple      iPhone 16 256GB          174g 6GB         12MP        48MP
## 3        Apple      iPhone 16 512GB          174g 6GB         12MP        48MP
## 4        Apple iPhone 16 Plus 128GB          203g 6GB         12MP        48MP
## 5        Apple iPhone 16 Plus 256GB          203g 6GB         12MP        48MP
## 6        Apple iPhone 16 Plus 512GB          203g 6GB         12MP        48MP
##    Processor Battery.Capacity.mAh Screen.Size.inches
## 1 A17 Bionic                3600                6.1
## 2 A17 Bionic                3600                6.1
## 3 A17 Bionic                3600                6.1
## 4 A17 Bionic                4200                6.7
## 5 A17 Bionic                4200                6.7
## 6 A17 Bionic                4200                6.7
##   Launched.Price.Pakistan.PKR Launched.Price.India.INR Launched.Price.China.CNY
## 1                      224999                   79999                    5799
## 2                      234999                   84999                    6099
## 3                      244999                   89999                    6499
## 4                      249999                   89999                    6199
## 5                      259999                   94999                    6499
## 6                      274999                  104999                    6999
##   Launched.Price.USA.USD Launched.Price.Dubai.AED Launched.Year
```

```
## 1                   799                   2799          2024
## 2                   849                   2999          2024
## 3                   899                   3199          2024
## 4                   899                   3199          2024
## 5                   949                   3399          2024
## 6                   999                   3599          2024
```

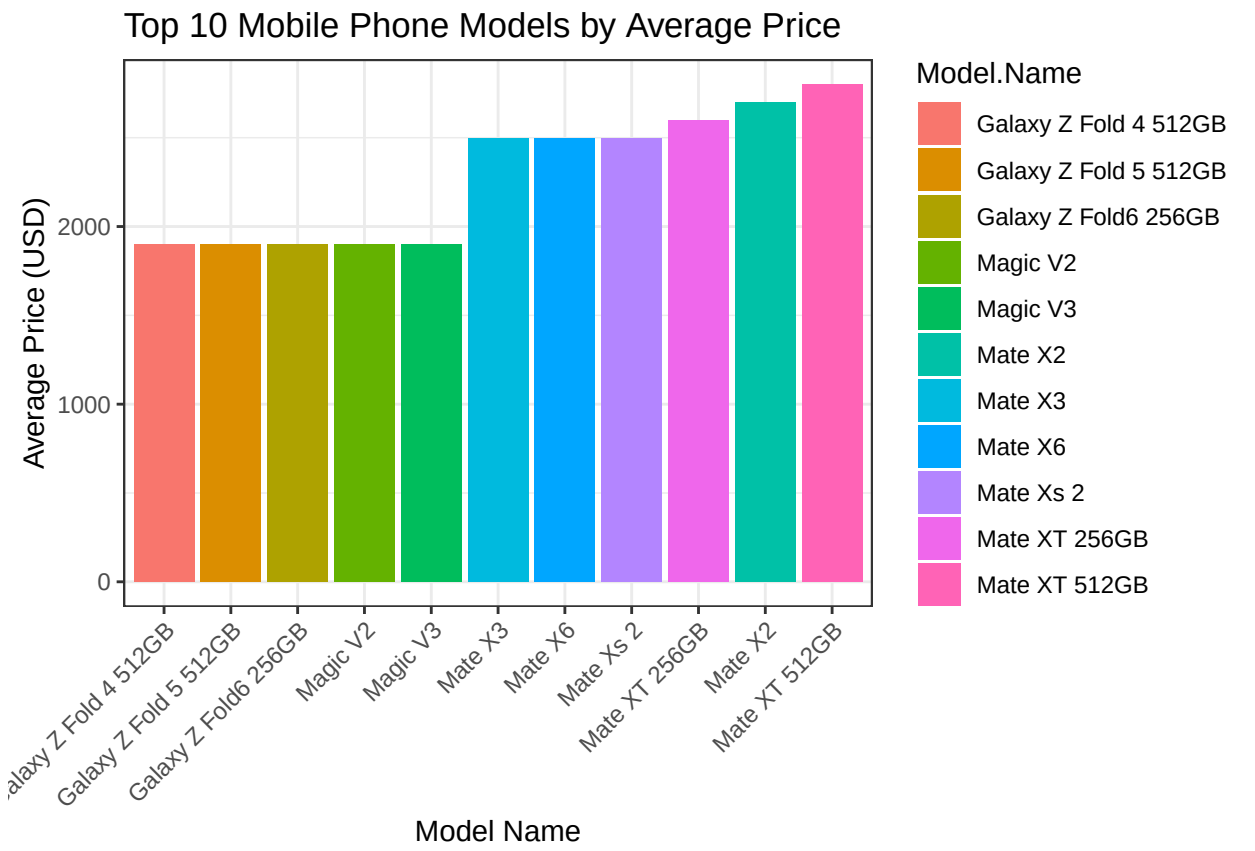
```r
colnames(data)
```

```
##  [1] "Company.Name"                "Model.Name"
##  [3] "Mobile.Weight"               "RAM"
##  [5] "Front.Camera"                "Back.Camera"
##  [7] "Processor"                   "Battery.Capacity.mAh"
##  [9] "Screen.Size.inches"          "Launched.Price.Pakistan.PKR"
## [11] "Launched.Price.India.INR"    "Launched.Price.China.CNY"
## [13] "Launched.Price.USA.USD"      "Launched.Price.Dubai.AED"
## [15] "Launched.Year"
```

```r
data <- data %>%
  mutate(
    Price_PKR_USD = Launched.Price.Pakistan.PKR * 0.0036,
    Price_INR_USD = Launched.Price.India.INR * 0.011,
    Price_CNY_USD = Launched.Price.China.CNY * 0.14,
    Price_AED_USD = Launched.Price.Dubai.AED * 0.27
  )
```

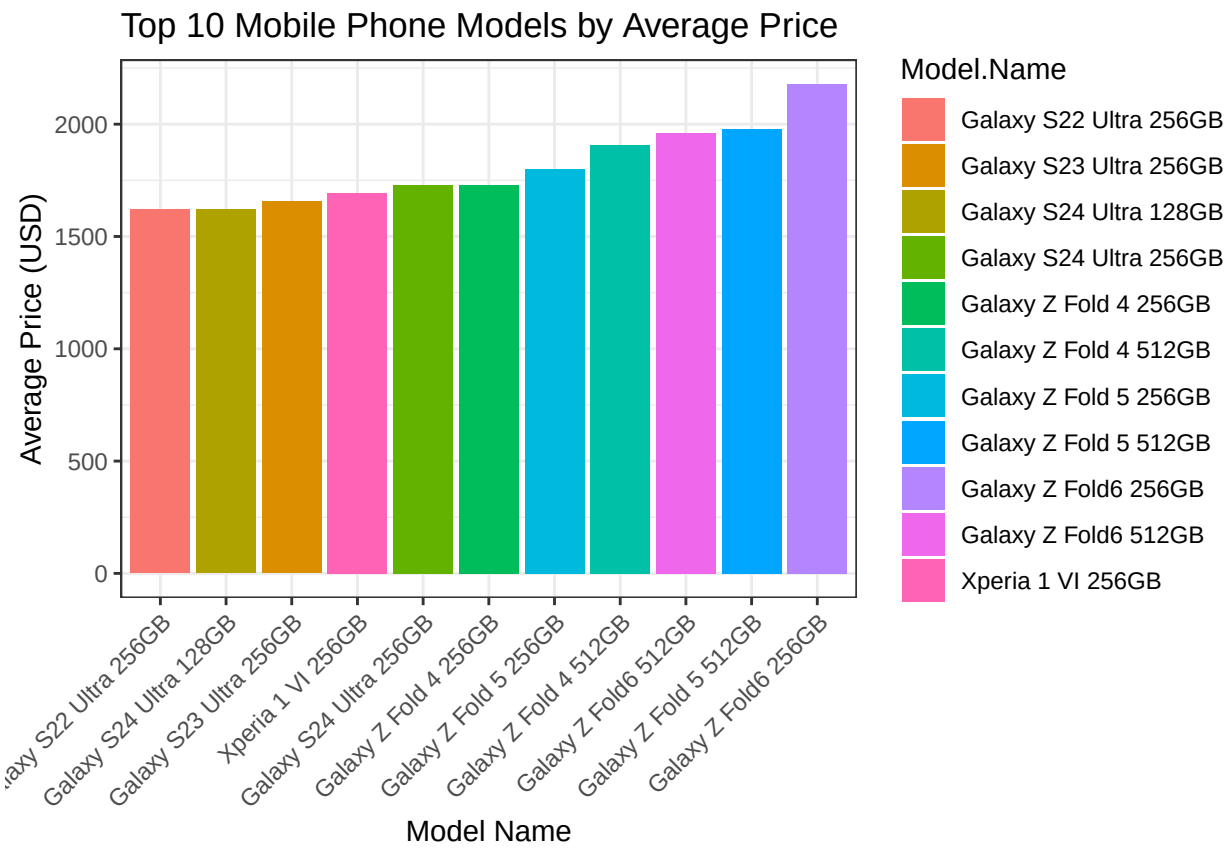
```r
data_summary <- data %>%
  group_by(Model.Name) %>%
  summarise(Average_Price = mean(Launched.Price.USA.USD, na.rm = TRUE)) %>%
  arrange(desc(Average_Price))

top_models <- data_summary %>% top_n(10, Average_Price)
ggplot(top_models, aes(x = reorder(Model.Name, Average_Price), y = Average_Price, fill = Model.Name)) +
  geom_bar(stat = "identity") +
  labs(
    x = "Model Name",
    y = "Average Price (USD)",
    title = "Top 10 Mobile Phone Models by Average Price"
  ) +
  theme_bw() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```



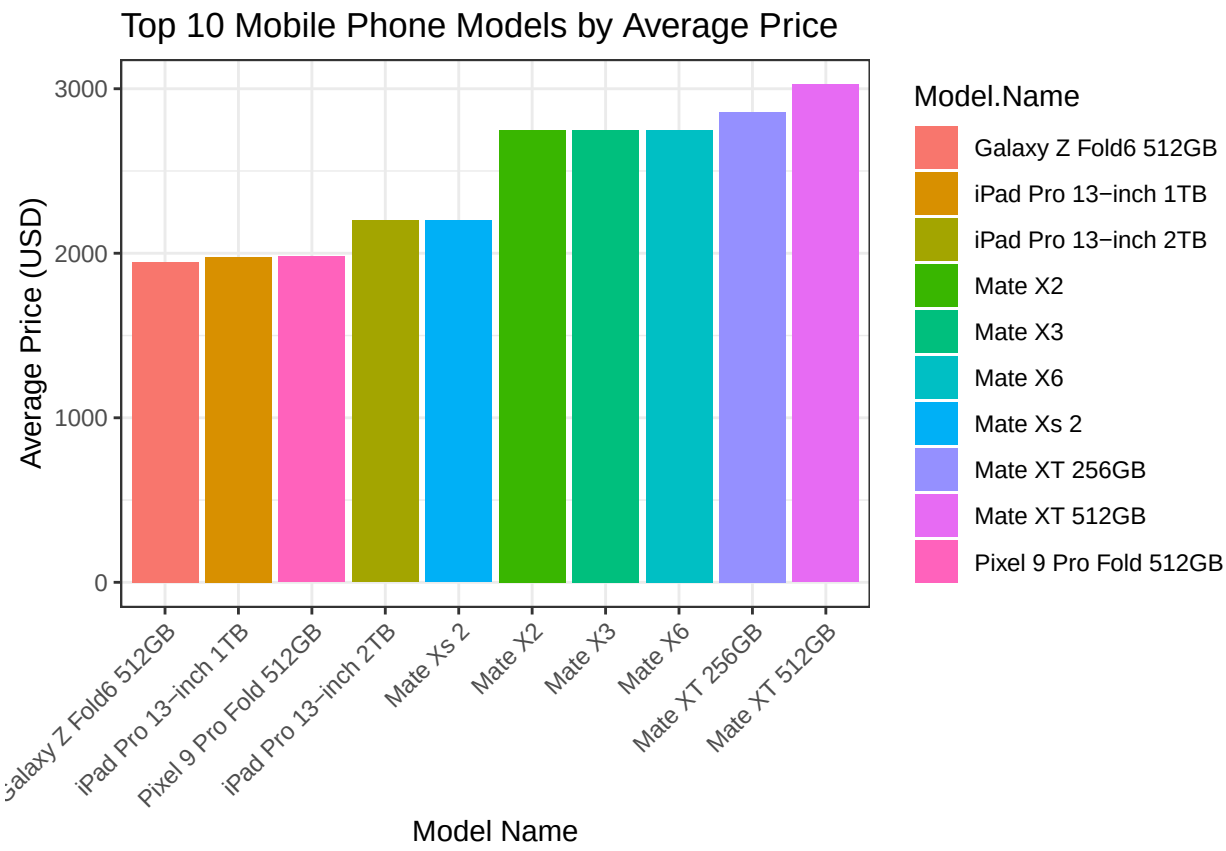

```r
data_summary <- data %>%
  group_by(Model.Name) %>%
  summarise(Average_Price = mean(Price_PKR_USD, na.rm = TRUE)) %>%
  arrange(desc(Average_Price))

top_models <- data_summary %>% top_n(10, Average_Price)
ggplot(top_models, aes(x = reorder(Model.Name, Average_Price), y = Average_Price, fill = Model.Name)) +
  geom_bar(stat = "identity") +
  labs(
    x = "Model Name",
    y = "Average Price (USD)",
    title = "Top 10 Mobile Phone Models by Average Price"
  ) +
  theme_bw() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```



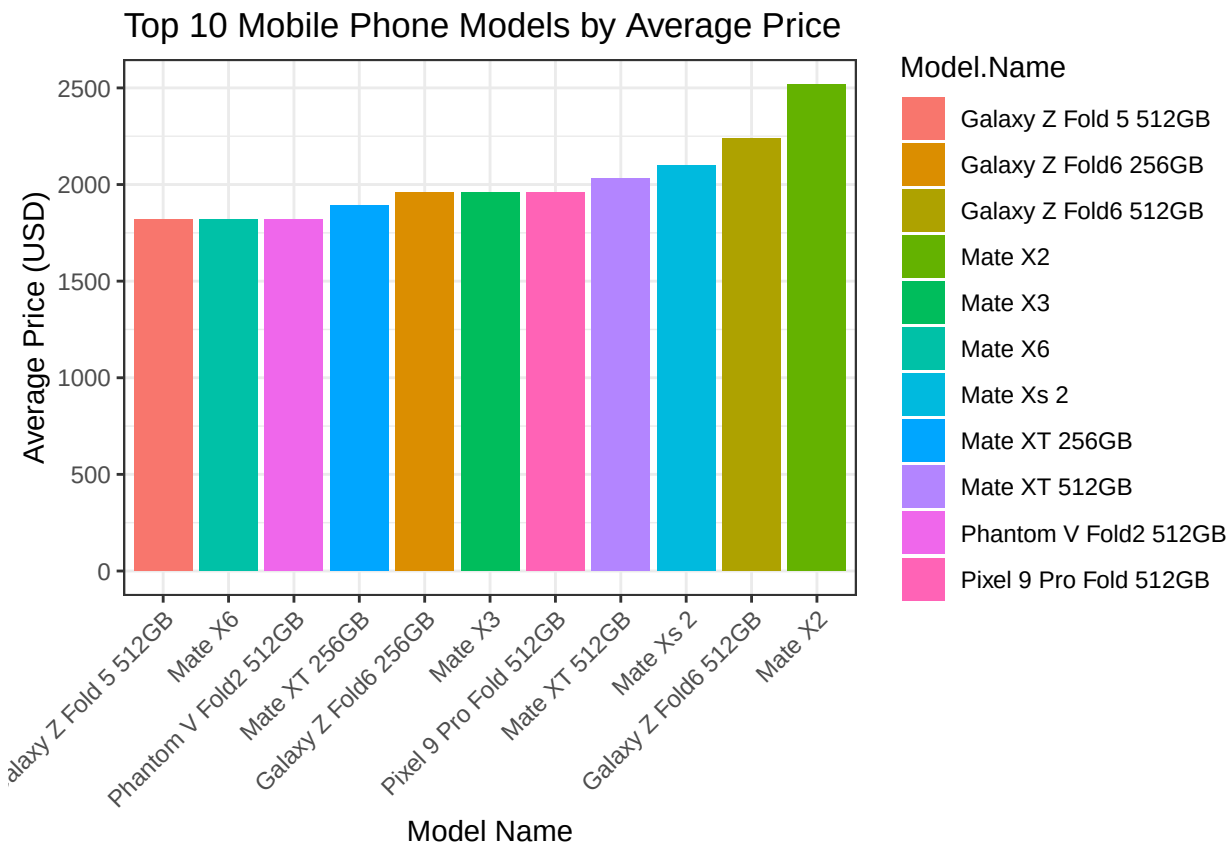

```
data_summary <- data %>%
  group_by(Model.Name) %>%
  summarise(Average_Price = mean(Price_INR_USD, na.rm = TRUE)) %>%
  arrange(desc(Average_Price))

top_models <- data_summary %>% top_n(10, Average_Price)
ggplot(top_models, aes(x = reorder(Model.Name, Average_Price), y = Average_Price, fill = Model.Name)) +
  geom_bar(stat = "identity") +
  labs(
    x = "Model Name",
    y = "Average Price (USD)",
    title = "Top 10 Mobile Phone Models by Average Price"
  ) +
  theme_bw() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```



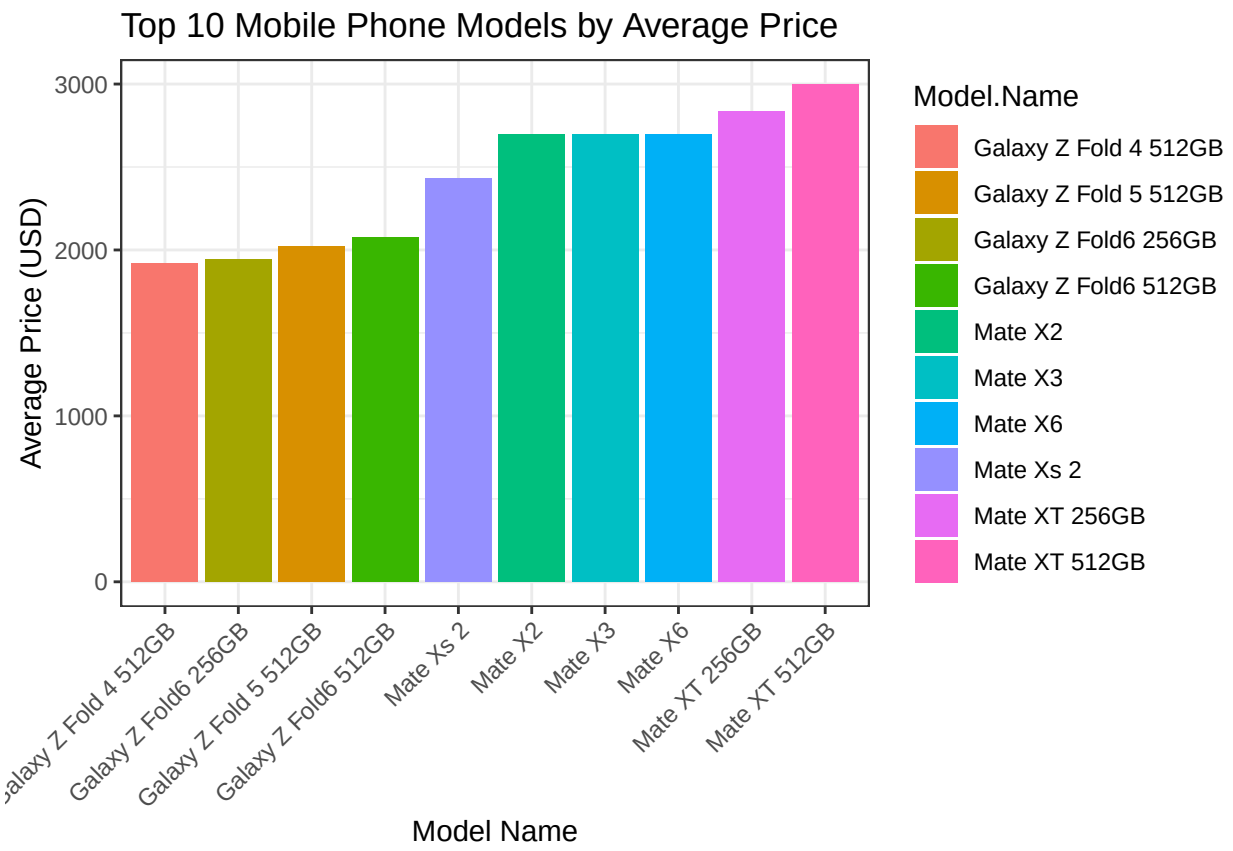

```r
data_summary <- data %>%
  group_by(Model.Name) %>%
  summarise(Average_Price = mean(Price_CNY_USD, na.rm = TRUE)) %>%
  arrange(desc(Average_Price))

top_models <- data_summary %>% top_n(10, Average_Price)
ggplot(top_models, aes(x = reorder(Model.Name, Average_Price), y = Average_Price, fill = Model.Name)) +
  geom_bar(stat = "identity") +
  labs(
    x = "Model Name",
    y = "Average Price (USD)",
    title = "Top 10 Mobile Phone Models by Average Price"
  ) +
  theme_bw() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```




```r
data_summary <- data %>%
  group_by(Model.Name) %>%
  summarise(Average_Price = mean(Price_AED_USD, na.rm = TRUE)) %>%
  arrange(desc(Average_Price))

top_models <- data_summary %>% top_n(10, Average_Price)
ggplot(top_models, aes(x = reorder(Model.Name, Average_Price), y = Average_Price, fill = Model.Name)) +
  geom_bar(stat = "identity") +
  labs(
    x = "Model Name",
    y = "Average Price (USD)",
    title = "Top 10 Mobile Phone Models by Average Price"
  ) +
  theme_bw() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```




```
# We can observe differences in prices across various regions for different mobile models,
#indicating that the model has an impact on pricing.
```