Stock Price Analysis with Basic R Operations

1. Calculate 2 to the power of 5

Question: What is two to the power of five?

In [11]:
```
result <- 2^5
paste('Two to the power of 5 is',result)
```

'Two to the power of 5 is 32'

2. Create a Vector of Stock Prices

Question: Create a vector called stock.prices with the following data points: 23, 27, 23, 21, 34.

In [13]:
```
stock.price <- c(23,27,23,21,34)
print(stock.price)
```

```
[1] 23 27 23 21 34
```

3. Assign Day Names to Stock Prices

Question: Assign names to the price data points relating to the days of the week, starting with Mon, Tue, Wed, etc.

In [14]:
```
week.days <- c("Mon","Tue","Wed","Thr","Fri")
names(stock.price) <- week.days
print(stock.price)
```

```
Mon Tue Wed Thr Fri
 23  27  23  21  34
```

4. Calculate the Average Stock Price

Question: What was the average (mean) stock price for the week?

In [22]:
```
average <- mean(stock.price)
print(average)
```

```
[1] 25.6
```

5. Create a Logical Vector for Prices Over $23

Question: Create a vector called over.23 consisting of logicals that correspond to the days where the stock price was more than $23.

In [16]:
```
over.23 <- stock.price > 23
print(over.23)
```

```
  Mon   Tue   Wed   Thr   Fri 
FALSE  TRUE FALSE FALSE  TRUE 
```

6. Filter Stock Prices Greater Than $23

Question: Use the over.23 vector to filter out the stock.prices vector and only return the day and prices where the price was over $23.

In [17]:
```
print(stock.price[over.23])
```

```
Tue Fri 
 27  34 
```

7. Find the Day with the Highest Stock Price

Question: Find the day the price was the highest.

In [19]:
```
print(stock.price[stock.price == max(stock.price)] )
```

```
Fri 
 34 
```

8. Calculate the Total Weekly Stock Price

Question: What is the total stock price for the week?

In [21]:
```
total <- sum(stock.price)
paste("The total stock price for the week is",total)
```

'The total stock price for the week is 128'

9. Identify Days with Stock Prices Below Average

Question: Which days had stock prices below the weekly average?

In [28]:
```
below.average <- stock.price[stock.price < average]
names(below.average)
```

'Mon' · 'Wed' · 'Thr'

10. Visualize the Stock Prices

Question: Create a bar plot to visualize stock prices across the days of the week.

In [31]:
```
install.packages('ggplot2')
library(ggplot2)
```

```
The downloaded binary packages are in
        /var/folders/17/y6yqqy7n54j29b_bxf1w8h880000gn/T//RtmpFM8dWQ/downloa
ded_packages
```

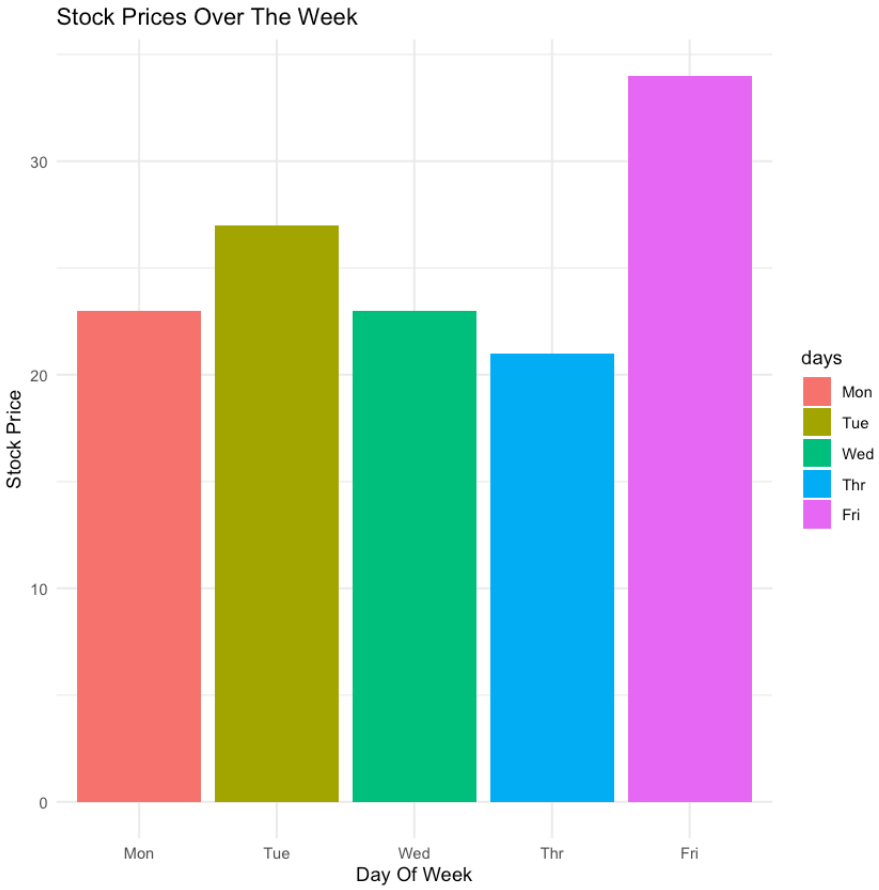
In [52]:
```
# create dataframe

df <- data.frame( days = names(stock.price), price = stock.price)

# Set the order of the days
df$days <- factor(df$days, levels = c("Mon", "Tue", "Wed", "Thr", "Fri"))

barchart <- ggplot(df, aes(x=days,y=price,fill=days)) +
    geom_bar(stat = "identity") +
    theme_minimal() +
    labs(x="Day Of Week",y="Stock Price", title="Stock Prices Over The Week"

barchart
```


Stock Prices Over The Week
Stock Price
30
20
10
0
Mon
Tue
Wed
Thr
Fri
Day Of Week
days
Mon
Tue
Wed
Thr
Fri