Uni-Students-Moodle-App-Views-Responses-

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// load the csv file

```
#install.packages("readr")
#install.packages("dplyr")
library(readr)
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
```

```
uni_students_satisfaction <- read_csv("Uni-Students-Moodle-App-Views-Responses.csv")
```

```
## Rows: 175 Columns: 35
```

```
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr  (3): Timestamp, name, sex
## dbl (32): age, U6, RA1, RA5, OE7, EOU3, EOU5, EOU6, EU4, A1, AF1, AF2, Affec...
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
head(uni_students_satisfaction)
```

```
## # A tibble: 6 x 35
##   Timestamp    name    age sex      U6   RA1   RA5   OE7  EOU3  EOU5  EOU6   EU4
##   <chr>        <chr> <dbl> <chr> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
## 1 3/9/2024 10~ Cord~    20 Male      3     3     3     3     1     4     4     4
## 2 3/9/2024 10~ Tole~    19 Fema~     3     3     3     3     3     4     3     3
## 3 3/9/2024 10~ Suma~    19 Male      3     3     3     3     3     3     3     3
## 4 3/9/2024 11~ Mari~    20 Fema~     3     3     3     3     4     3     4     4
## 5 3/9/2024 11~ Codi~    19 Fema~     3     3     3     3     3     3     3     3
## 6 3/9/2024 11~ Jamp~    19 Fema~     5     4     4     4     4     4     5     4
## # i 23 more variables: A1 <dbl>, AF1 <dbl>, AF2 <dbl>, Affect1 <dbl>,
## #   SN1 <dbl>, SN2 <dbl>, SF2 <dbl>, SF4 <dbl>, PBC2 <dbl>, PBC3 <dbl>,
## #   PBC5 <dbl>, FC3 <dbl>, SE1 <dbl>, SE4 <dbl>, SE6 <dbl>, SE7 <dbl>,
## #   ANX1 <dbl>, ANX2 <dbl>, ANX3 <dbl>, ANX4 <dbl>, BI1 <dbl>, BI2 <dbl>,
## #   BI3 <dbl>
```

```r
summary(uni_students_satisfaction)
```

```
##   Timestamp             name                age            sex
##  Length:175         Length:175         Min.   :18.00   Length:175
##  Class :character   Class :character   1st Qu.:19.00   Class :character
##  Mode  :character   Mode  :character   Median :20.00   Mode  :character
##                                        Mean   :20.19
##                                        3rd Qu.:21.00
##                                        Max.   :26.00
##        U6              RA1             RA5             OE7
##  Min.   :1.000   Min.   :1.000   Min.   :1.000   Min.   :1.000
##  1st Qu.:3.000   1st Qu.:3.000   1st Qu.:3.000   1st Qu.:3.000
##  Median :4.000   Median :4.000   Median :3.000   Median :3.000
##  Mean   :3.629   Mean   :3.623   Mean   :3.503   Mean   :3.486
##  3rd Qu.:4.000   3rd Qu.:4.000   3rd Qu.:4.000   3rd Qu.:4.000
##  Max.   :5.000   Max.   :5.000   Max.   :5.000   Max.   :5.000
##       EOU3            EOU5            EOU6            EU4              A1
##  Min.   :1.000   Min.   :1.000   Min.   :1.000   Min.   :1.000   Min.   :1.00
##  1st Qu.:3.000   1st Qu.:3.000   1st Qu.:3.000   1st Qu.:3.000   1st Qu.:3.00
##  Median :3.000   Median :3.000   Median :4.000   Median :4.000   Median :3.00
##  Mean   :3.429   Mean   :3.549   Mean   :3.737   Mean   :3.634   Mean   :3.44
##  3rd Qu.:4.000   3rd Qu.:4.000   3rd Qu.:4.500   3rd Qu.:4.000   3rd Qu.:4.00
##  Max.   :5.000   Max.   :5.000   Max.   :5.000   Max.   :5.000   Max.   :5.00
##       AF1             AF2            Affect1          SN1             SN2
##  Min.   :1.000   Min.   :1.000   Min.   :1.00   Min.   :1.00   Min.   :1.000
##  1st Qu.:3.000   1st Qu.:3.000   1st Qu.:3.00   1st Qu.:3.00   1st Qu.:3.000
##  Median :3.000   Median :3.000   Median :3.00   Median :3.00   Median :4.000
##  Mean   :3.486   Mean   :3.434   Mean   :3.52   Mean   :3.44   Mean   :3.531
##  3rd Qu.:4.000   3rd Qu.:4.000   3rd Qu.:4.00   3rd Qu.:4.00   3rd Qu.:4.000
##  Max.   :5.000   Max.   :5.000   Max.   :5.00   Max.   :5.00   Max.   :5.000
##       SF2             SF4             PBC2            PBC3
##  Min.   :1.000   Min.   :1.000   Min.   :1.000   Min.   :1.000
##  1st Qu.:3.000   1st Qu.:3.000   1st Qu.:3.000   1st Qu.:3.000
##  Median :4.000   Median :4.000   Median :4.000   Median :3.000
##  Mean   :3.657   Mean   :3.691   Mean   :3.543   Mean   :3.549
##  3rd Qu.:4.000   3rd Qu.:4.000   3rd Qu.:4.000   3rd Qu.:4.000
##  Max.   :5.000   Max.   :5.000   Max.   :5.000   Max.   :5.000
##       PBC5            FC3             SE1             SE4             SE6
##  Min.   :1.000   Min.   :1.00   Min.   :1.000   Min.   :1.000   Min.   :1.00
##  1st Qu.:3.000   1st Qu.:3.00   1st Qu.:3.000   1st Qu.:3.000   1st Qu.:3.00
##  Median :3.000   Median :3.00   Median :4.000   Median :4.000   Median :4.00
##  Mean   :3.411   Mean   :3.52   Mean   :3.617   Mean   :3.634   Mean   :3.68
##  3rd Qu.:4.000   3rd Qu.:4.00   3rd Qu.:4.000   3rd Qu.:4.000   3rd Qu.:4.00
##  Max.   :5.000   Max.   :5.00   Max.   :5.000   Max.   :5.000   Max.   :5.00
##       SE7             ANX1            ANX2            ANX3            ANX4
##  Min.   :1.000   Min.   :1.000   Min.   :1.000   Min.   :1.00   Min.   :1.000
##  1st Qu.:3.000   1st Qu.:2.000   1st Qu.:3.000   1st Qu.:3.00   1st Qu.:3.000
##  Median :4.000   Median :3.000   Median :3.000   Median :3.00   Median :3.000
##  Mean   :3.629   Mean   :2.983   Mean   :3.543   Mean   :3.48   Mean   :3.446
##  3rd Qu.:4.000   3rd Qu.:4.000   3rd Qu.:4.000   3rd Qu.:4.00   3rd Qu.:4.000
##  Max.   :5.000   Max.   :5.000   Max.   :5.000   Max.   :5.00   Max.   :5.000
##       BI1             BI2             BI3
##  Min.   :1.000   Min.   :1.00   Min.   :1.000
##  1st Qu.:3.000   1st Qu.:3.00   1st Qu.:3.000
```

```
##  Median :3.000   Median :3.00   Median :3.000
##  Mean   :3.349   Mean   :3.36   Mean   :3.366
##  3rd Qu.:4.000   3rd Qu.:4.00   3rd Qu.:4.000
##  Max.   :5.000   Max.   :5.00   Max.   :5.000
```

```
#View(uni_students_satisfaction)
```

// columns of questions

```
question_columns <- c("U6", "RA1", "RA5", "OE7", "EOU3", "EOU5", "EOU6", "EU4", "A1", "AF1", "AF2", "Af
```

```
#View(uni_students_satisfaction)
```

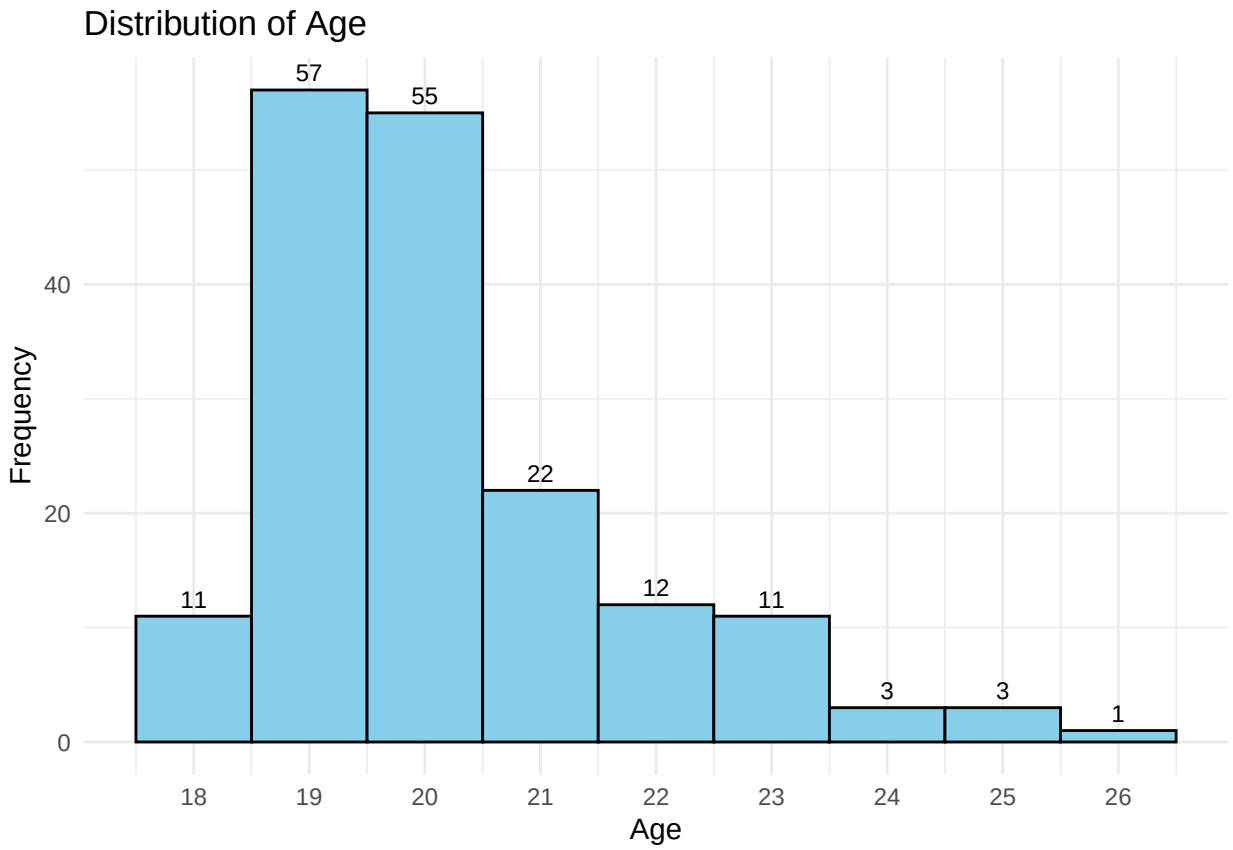
//age

```
library(dplyr)
library(ggplot2)
respondents_age <- uni_students_satisfaction %>%
  summarize(
    total_count = n(),                # Total count of records
    mean_age = mean(age, na.rm = TRUE),        # Mean age
    median_age = median(age, na.rm = TRUE),    # Median age
    min_age = min(age, na.rm = TRUE),          # Minimum age
    max_age = max(age, na.rm = TRUE)           # Maximum age
  )

respondents_age
```

```
## # A tibble: 1 x 5
##   total_count mean_age median_age min_age max_age
##         <int>    <dbl>      <dbl>   <dbl>   <dbl>
## 1         175     20.2         20      18      26
```

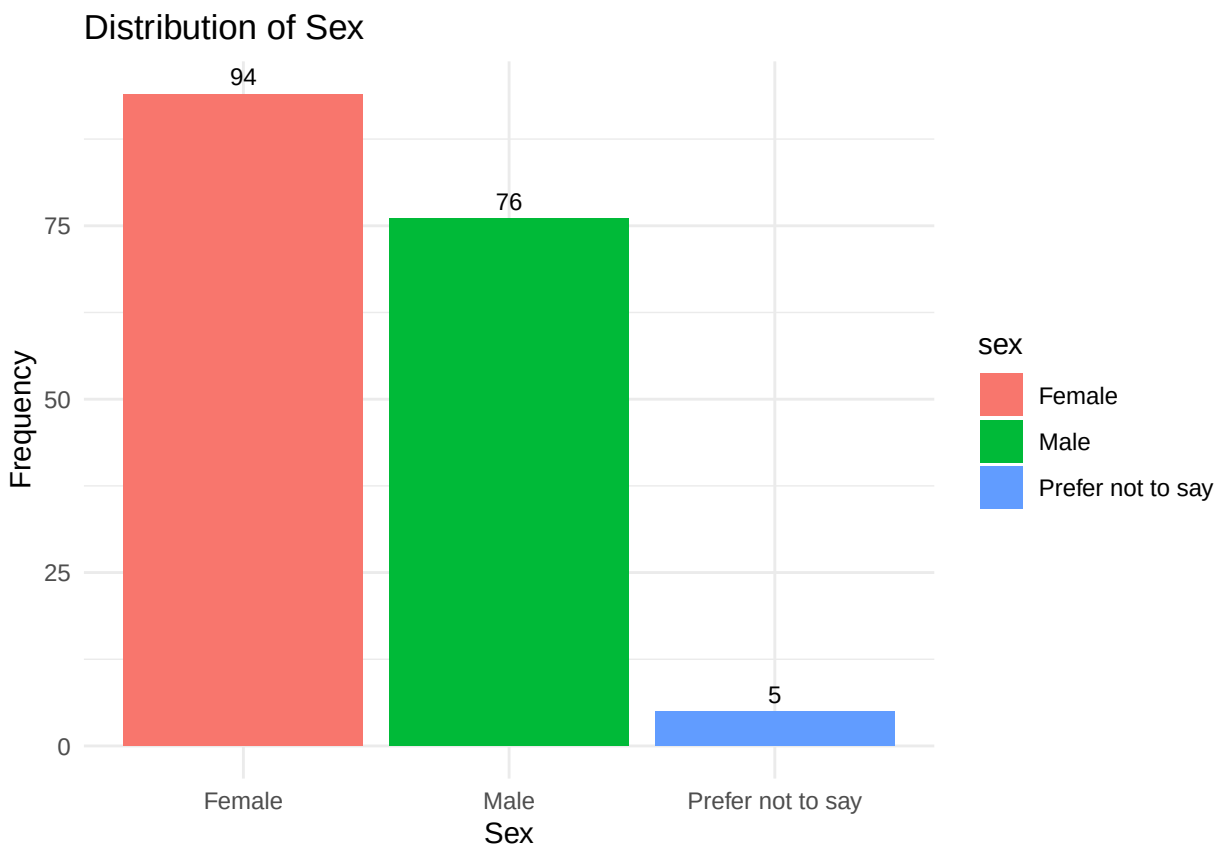
```
ggplot(uni_students_satisfaction, aes(x = age)) +
  geom_histogram(binwidth = 1, fill = "skyblue", color = "black") +
  geom_text(stat = "count", aes(label = ..count..), vjust = -0.5, size = 3, color = "black") + # Add co
  labs(title = "Distribution of Age",
       x = "Age",
       y = "Frequency") +
  scale_x_continuous(breaks = seq(18, 26, by = 1)) +
  theme_minimal()
```

```
## Warning: The dot-dot notation (`..count..`) was deprecated in ggplot2 3.4.0.
## i Please use `after_stat(count)` instead.
## This warning is displayed once every 8 hours.
## Call `lifecycle::last_lifecycle_warnings()` to see where this warning was
## generated.
```



//sex

```
ggplot(uni_students_satisfaction, aes(x = sex, fill = sex)) +
  geom_bar() +
  geom_text(stat = "count", aes(label = ..count..), vjust = -0.5, size = 3, color = "black") + # Add co
  labs(title = "Distribution of Sex",
       x = "Sex",
       y = "Frequency") +
  theme_minimal()
```



Performance Expectancy:

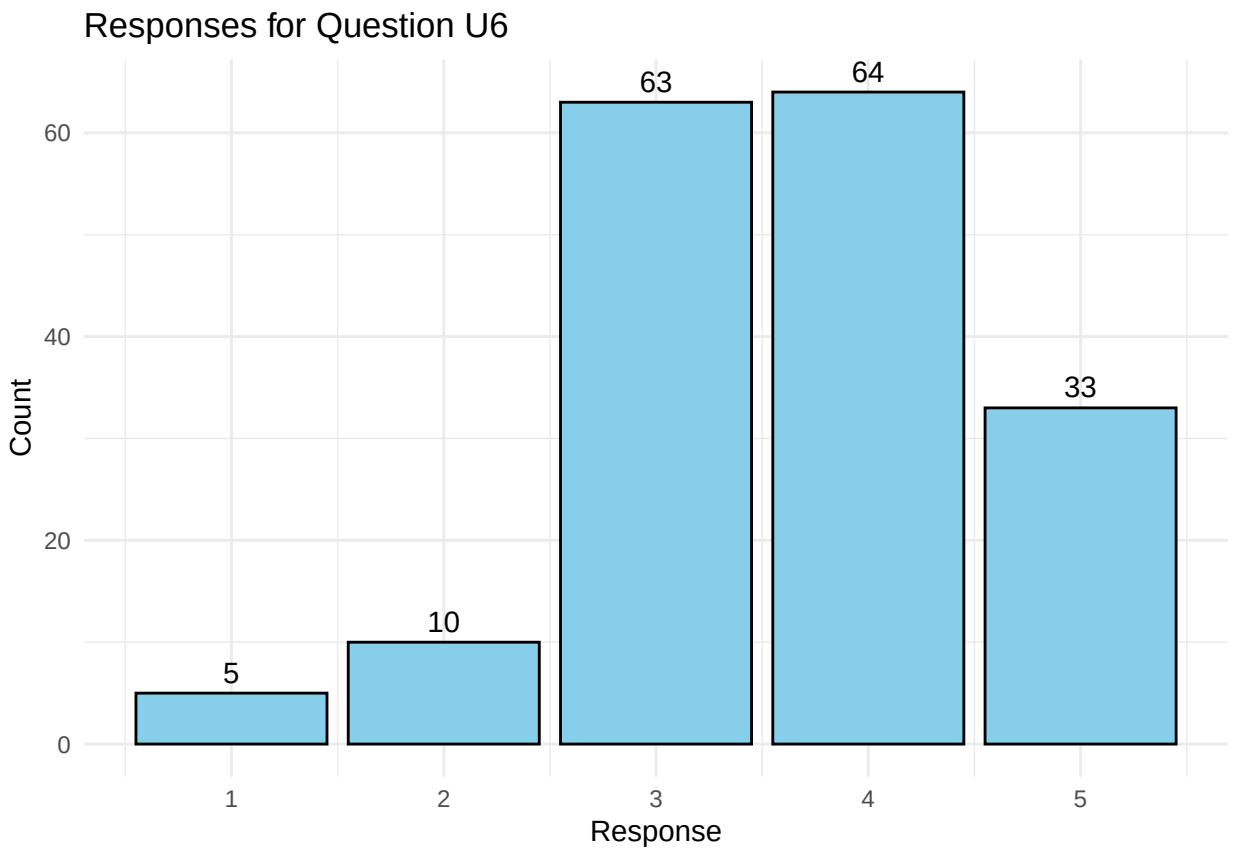
U6: How helpful do you think the Moodle app would be for your studies?

```
library(dplyr)

U6_response_counts <- uni_students_satisfaction %>%
  count(U6)

U6_response_counts
```

```
## # A tibble: 5 x 2
##      U6     n
##   <dbl> <int>
## 1     1     5
## 2     2    10
## 3     3    63
## 4     4    64
## 5     5    33
```

```
library(ggplot2)

ggplot(U6_response_counts, aes(x = U6, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question U6",
```

```
       x = "Response",
       y = "Count") +
  theme_minimal()
```



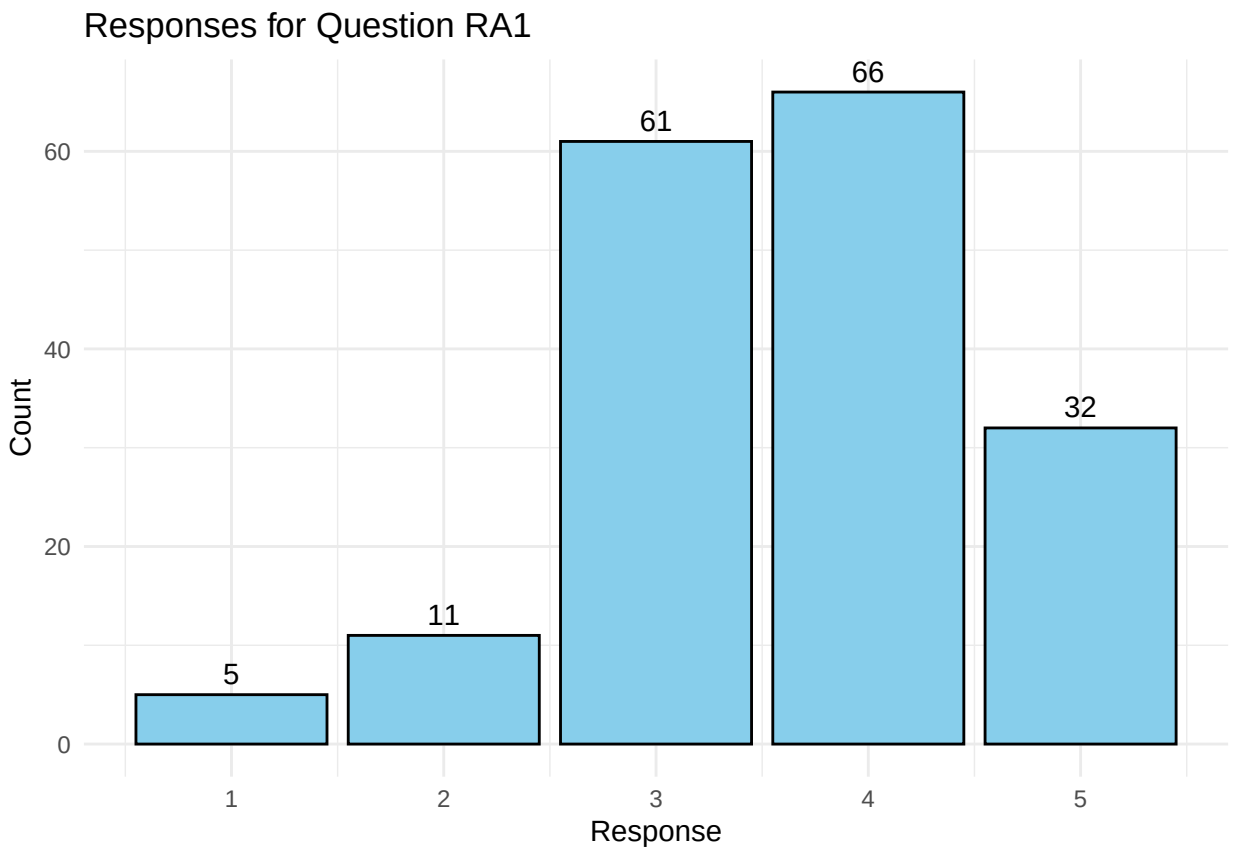
RA1: Do you believe the Moodle app would make completing tasks easier for you?

```
library(dplyr)

RA1_response_counts <- uni_students_satisfaction %>%
  count(RA1)

RA1_response_counts
```

```
## # A tibble: 5 x 2
##     RA1     n
##   <dbl> <int>
## 1     1     5
## 2     2    11
## 3     3    61
## 4     4    66
## 5     5    32
```

```
library(ggplot2)

ggplot(RA1_response_counts, aes(x = RA1, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question RA1",
```

```
       x = "Response",
       y = "Count") +
  theme_minimal()
```



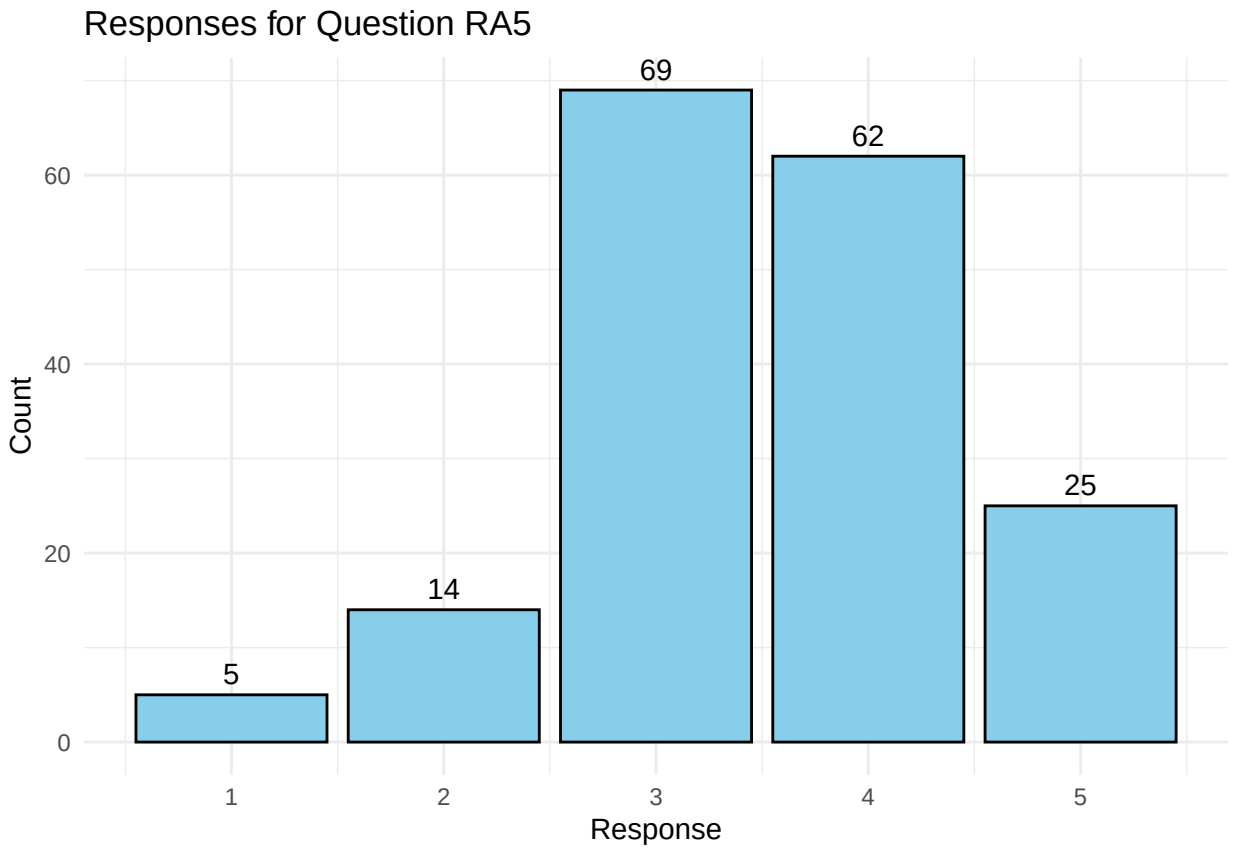
RA5: Will using the Moodle app improve your productivity as a student?

```
library(dplyr)

RA5_response_counts <- uni_students_satisfaction %>%
  count(RA5)

RA5_response_counts
```

```
## # A tibble: 5 x 2
##     RA5     n
##   <dbl> <int>
## 1     1     5
## 2     2    14
## 3     3    69
## 4     4    62
## 5     5    25
```

```
library(ggplot2)

ggplot(RA5_response_counts, aes(x = RA5, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question RA5",
```

```
       x = "Response",
       y = "Count") +
  theme_minimal()
```



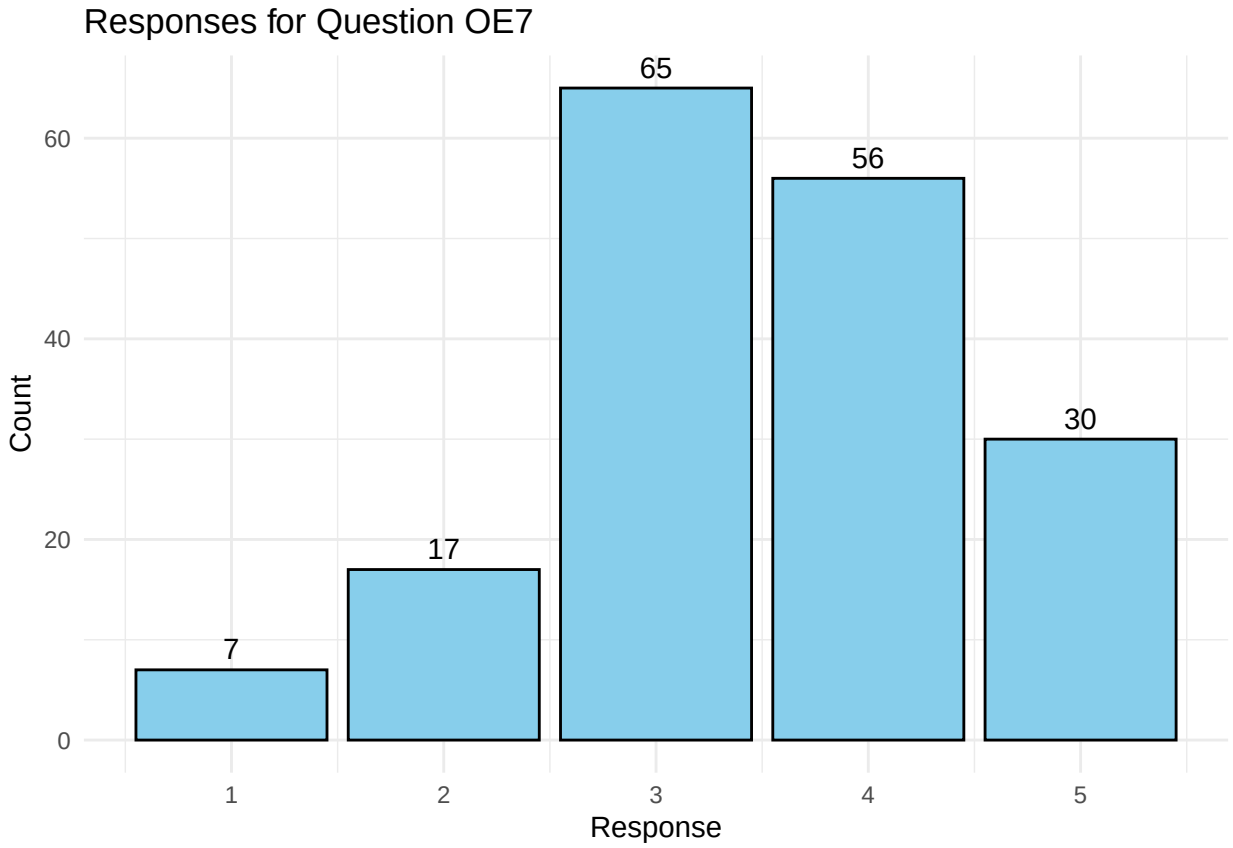
OE7: Would using the Moodle app motivate you to do better academically?

```
library(dplyr)

OE7_response_counts <- uni_students_satisfaction %>%
  count(OE7)

OE7_response_counts
```

```
## # A tibble: 5 x 2
##     OE7     n
##   <dbl> <int>
## 1     1     7
## 2     2    17
## 3     3    65
## 4     4    56
## 5     5    30
```

```
library(ggplot2)

ggplot(OE7_response_counts, aes(x = OE7, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question OE7",
```

```
       x = "Response",
       y = "Count") +
  theme_minimal()
```



Effort Expectancy:

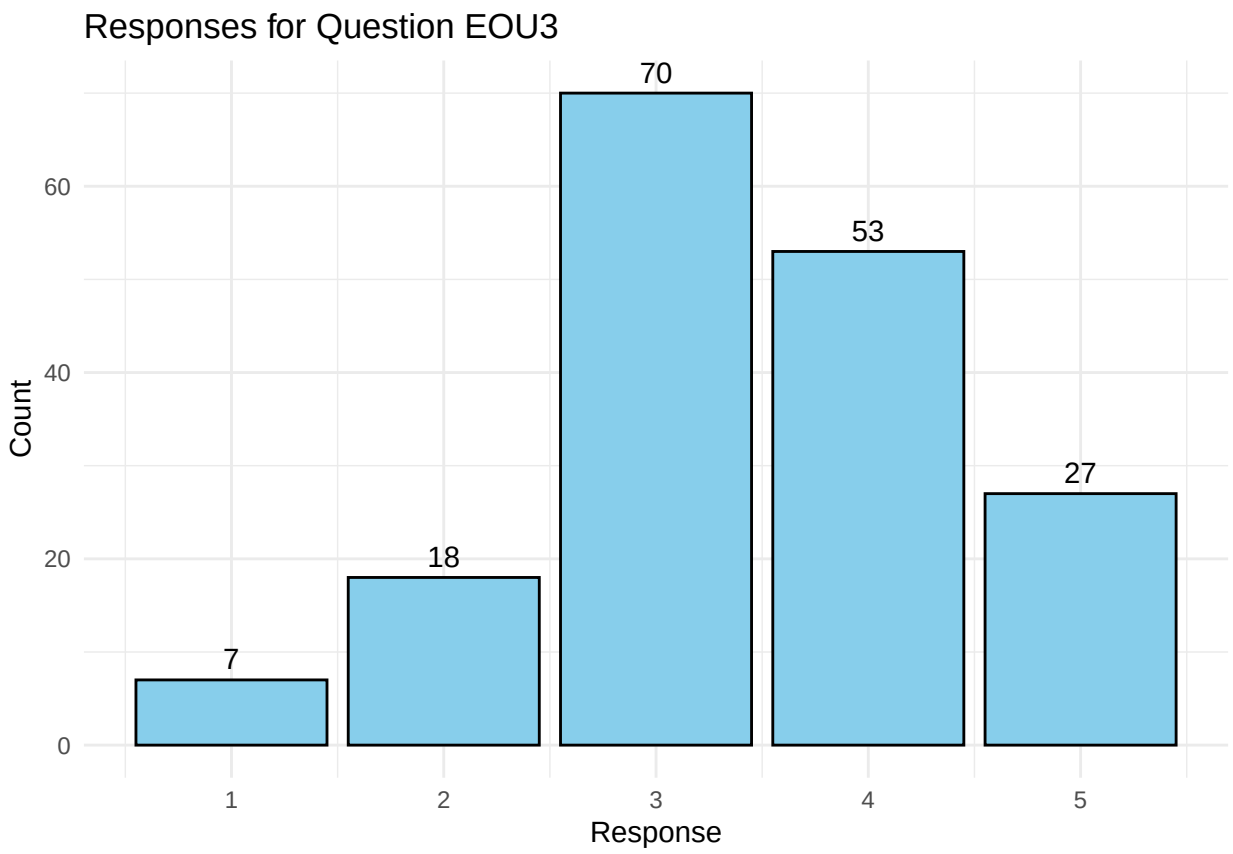
EOU3: Do you expect to find the Moodle app easy to navigate?

```
library(dplyr)

EOU3_response_counts <- uni_students_satisfaction %>%
  count(EOU3)

EOU3_response_counts
```

```
## # A tibble: 5 x 2
##    EOU3     n
##   <dbl> <int>
## 1     1     7
## 2     2    18
## 3     3    70
## 4     4    53
## 5     5    27
```

```
library(ggplot2)
```

```r
ggplot(EOU3_response_counts, aes(x = EOU3, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question EOU3",
       x = "Response",
       y = "Count") +
  theme_minimal()
```



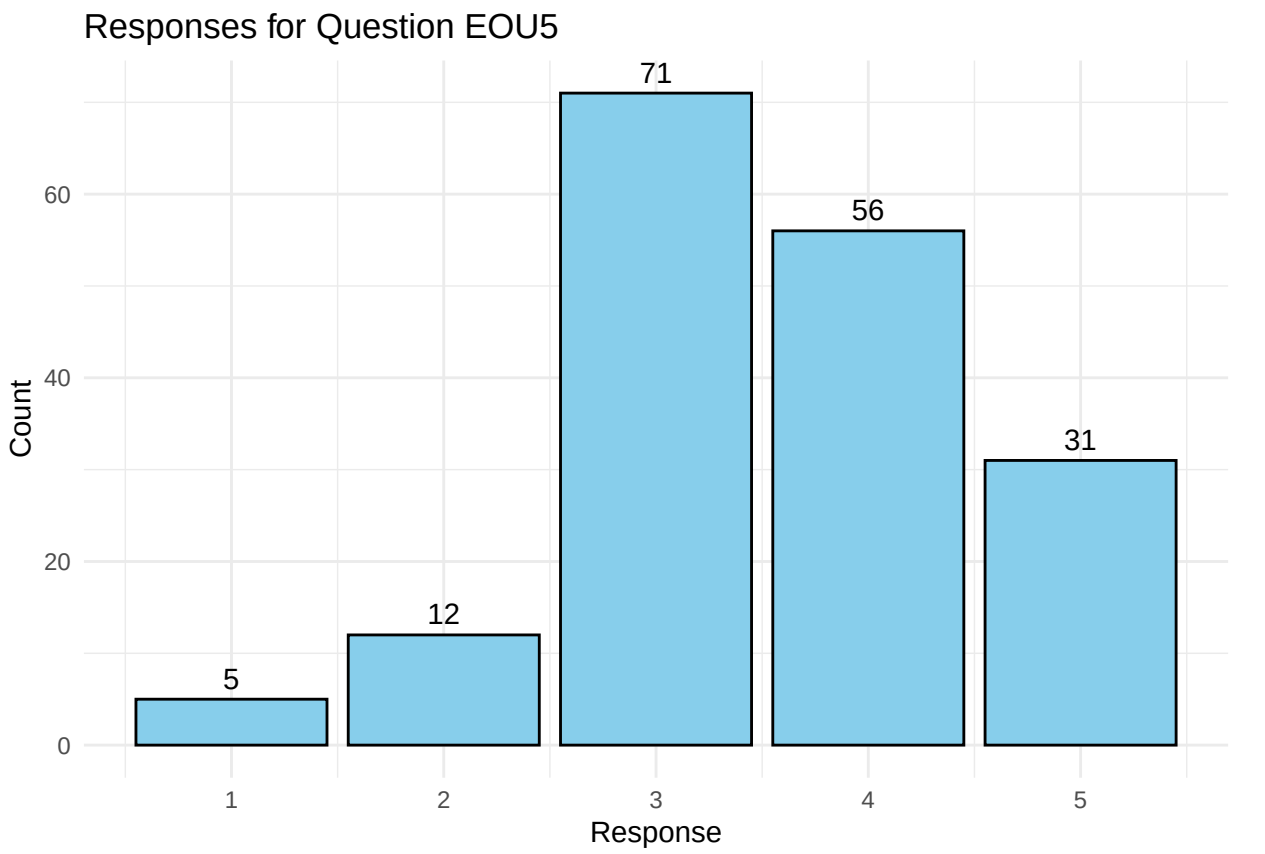
EOU5: How confident are you in your ability to learn to use the Moodle app effectively?

```r
library(dplyr)

EOU5_response_counts <- uni_students_satisfaction %>%
  count(EOU5)

EOU5_response_counts
```

```
## # A tibble: 5 x 2
##    EOU5     n
##   <dbl> <int>
## 1     1     5
## 2     2    12
## 3     3    71
## 4     4    56
## 5     5    31
```

```r
library(ggplot2)
```

```r
ggplot(EOU5_response_counts, aes(x = EOU5, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question EOU5",
       x = "Response",
       y = "Count") +
  theme_minimal()
```



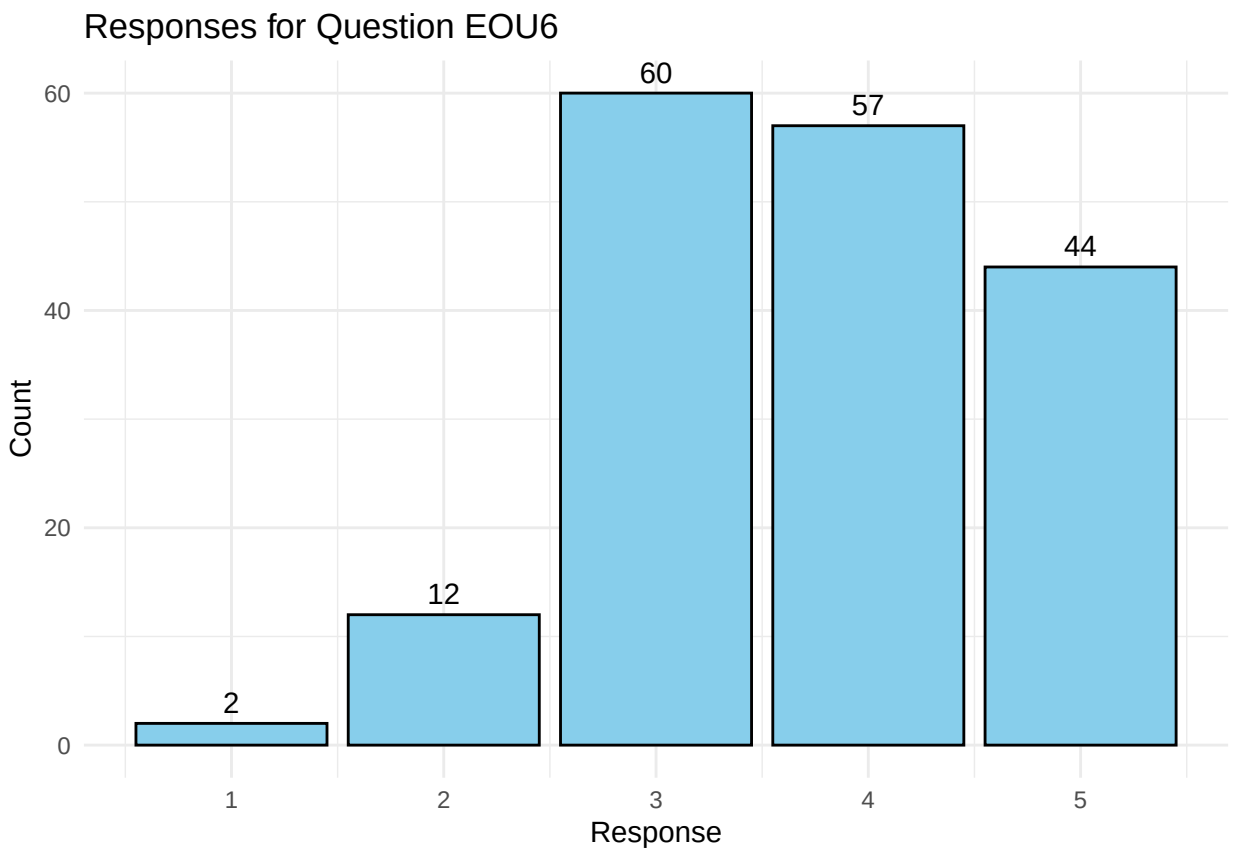
EOU6: Would you consider the Moodle app user-friendly?

```r
library(dplyr)

EOU6_response_counts <- uni_students_satisfaction %>%
  count(EOU6)

EOU6_response_counts
```

```
## # A tibble: 5 x 2
##    EOU6     n
##   <dbl> <int>
## 1     1     2
## 2     2    12
## 3     3    60
## 4     4    57
## 5     5    44
```

```r
library(ggplot2)
```

```
ggplot(EOU6_response_counts, aes(x = EOU6, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question EOU6",
       x = "Response",
       y = "Count") +
  theme_minimal()
```



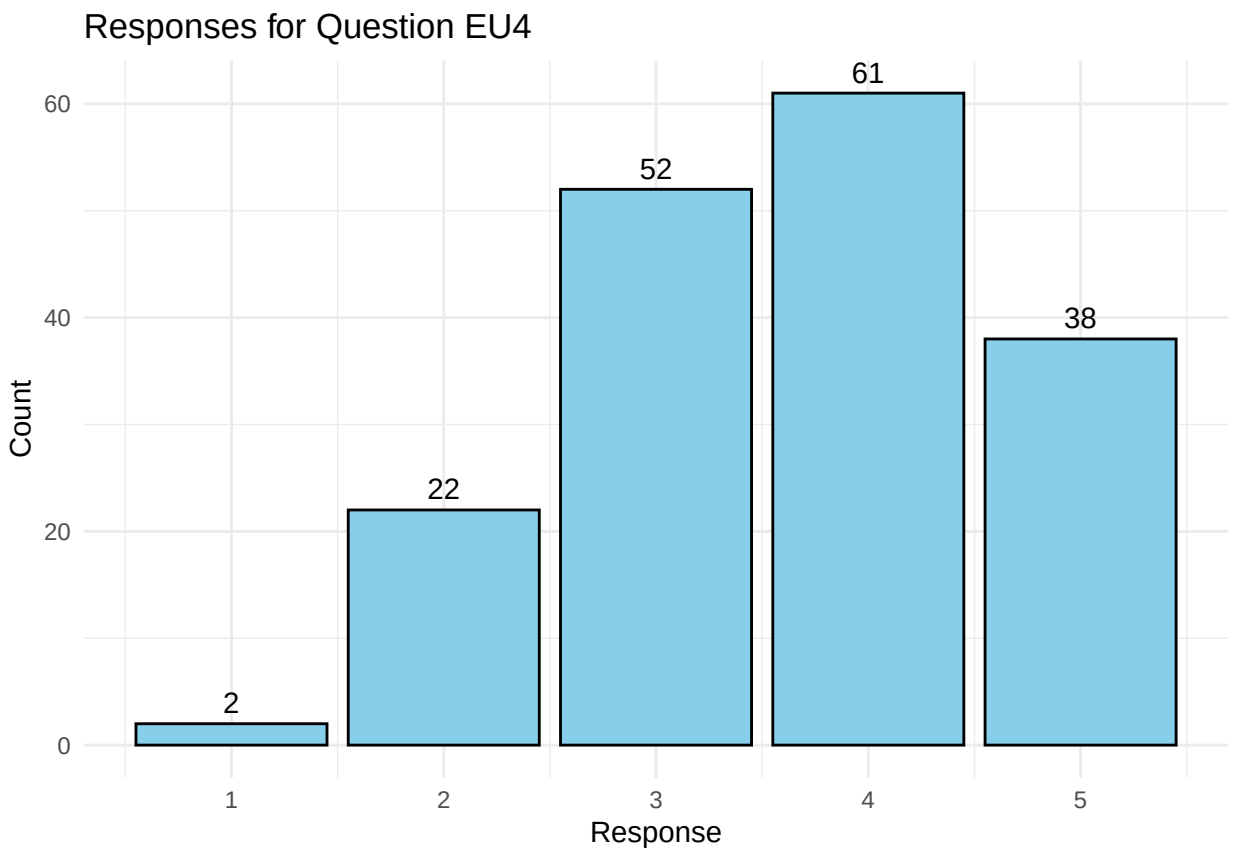
EU4: Do you think learning to use the Moodle app would be easy for you?

```
library(dplyr)

EU4_response_counts <- uni_students_satisfaction %>%
  count(EU4)

EU4_response_counts
```

```
## # A tibble: 5 x 2
##     EU4     n
##   <dbl> <int>
## 1     1     2
## 2     2    22
## 3     3    52
## 4     4    61
## 5     5    38
```

```
library(ggplot2)
```

```r
ggplot(EU4_response_counts, aes(x = EU4, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question EU4",
       x = "Response",
       y = "Count") +
  theme_minimal()
```



Attitude toward using technology:

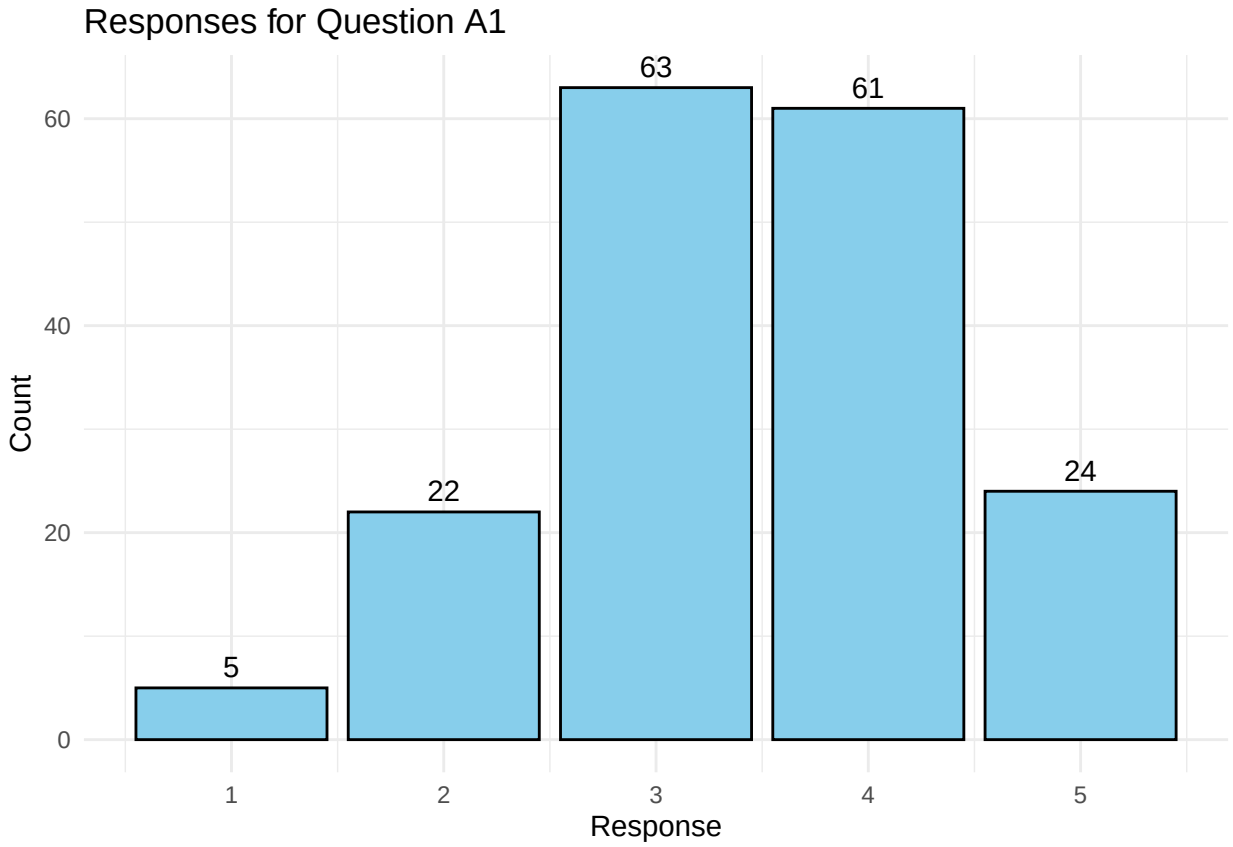
A1: What do you think about including the Moodle app in your daily academic routine?

```r
library(dplyr)

A1_response_counts <- uni_students_satisfaction %>%
  count(A1)

A1_response_counts
```

```
## # A tibble: 5 x 2
##      A1     n
##   <dbl> <int>
## 1     1     5
## 2     2    22
## 3     3    63
```

```
## 4     4    61
## 5     5    24
```

```
library(ggplot2)

ggplot(A1_response_counts, aes(x = A1, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question A1",
       x = "Response",
       y = "Count") +
  theme_minimal()
```



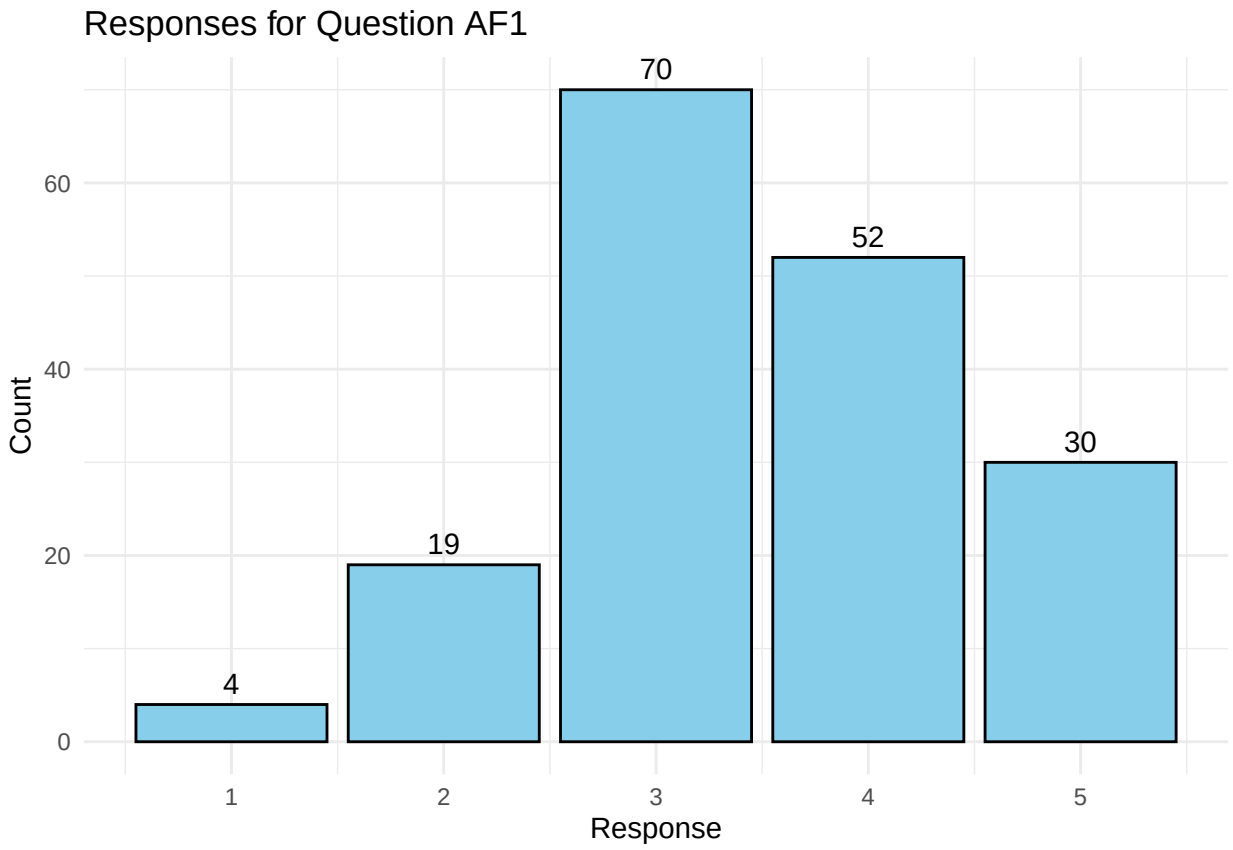
AF1: Will the Moodle app make your learning experience more interesting?

```
library(dplyr)

AF1_response_counts <- uni_students_satisfaction %>%
  count(AF1)

AF1_response_counts
```

```
## # A tibble: 5 x 2
##     AF1     n
##   <dbl> <int>
## 1     1     4
## 2     2    19
## 3     3    70
## 4     4    52
```

```
## 5     5    30
```

```
library(ggplot2)

ggplot(AF1_response_counts, aes(x = AF1, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question AF1",
       x = "Response",
       y = "Count") +
  theme_minimal()
```

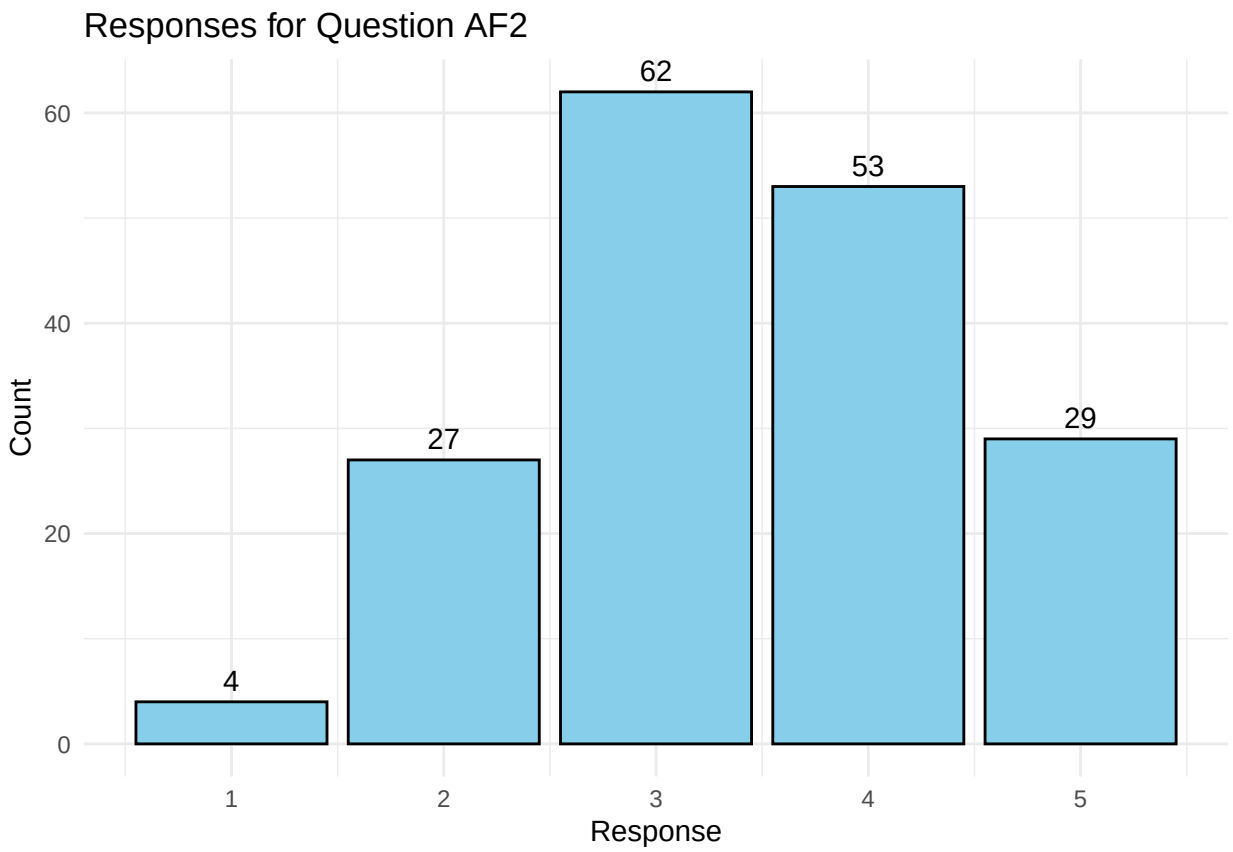


AF2: Would using the Moodle app make your academic tasks more enjoyable?

```
library(dplyr)

AF2_response_counts <- uni_students_satisfaction %>%
  count(AF2)

AF2_response_counts
```

```
## # A tibble: 5 x 2
##     AF2     n
##   <dbl> <int>
## 1     1     4
## 2     2    27
## 3     3    62
## 4     4    53
## 5     5    29
```

```r
library(ggplot2)

ggplot(AF2_response_counts, aes(x = AF2, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question AF2",
       x = "Response",
       y = "Count") +
  theme_minimal()
```

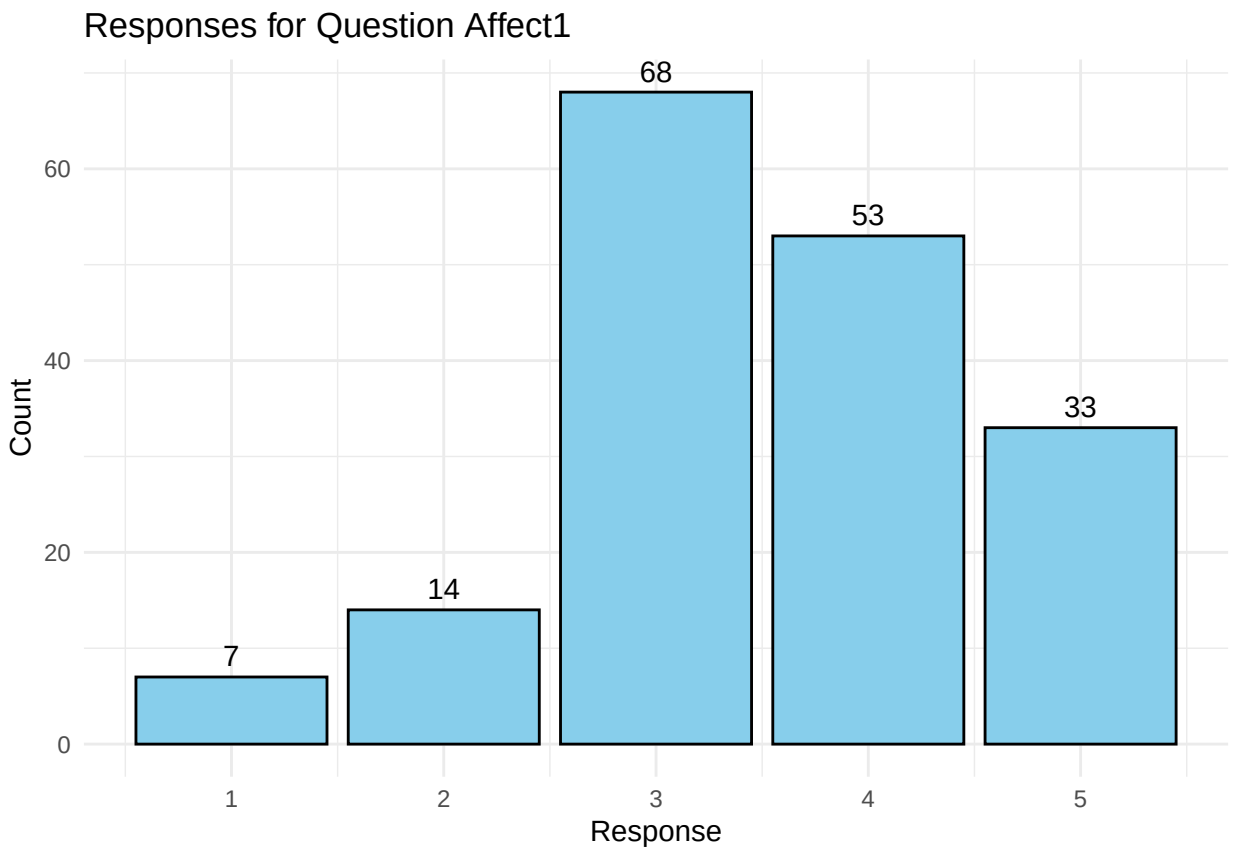


Affect1: How positive do you feel about using the Moodle app?

```r
library(dplyr)

Affect1_response_counts <- uni_students_satisfaction %>%
  count(Affect1)

Affect1_response_counts
```

```
## # A tibble: 5 x 2
##   Affect1     n
##     <dbl> <int>
## 1       1     7
## 2       2    14
## 3       3    68
## 4       4    53
## 5       5    33
```

```
library(ggplot2)

ggplot(Affect1_response_counts, aes(x = Affect1, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question Affect1",
       x = "Response",
       y = "Count") +
  theme_minimal()
```



Social influence:

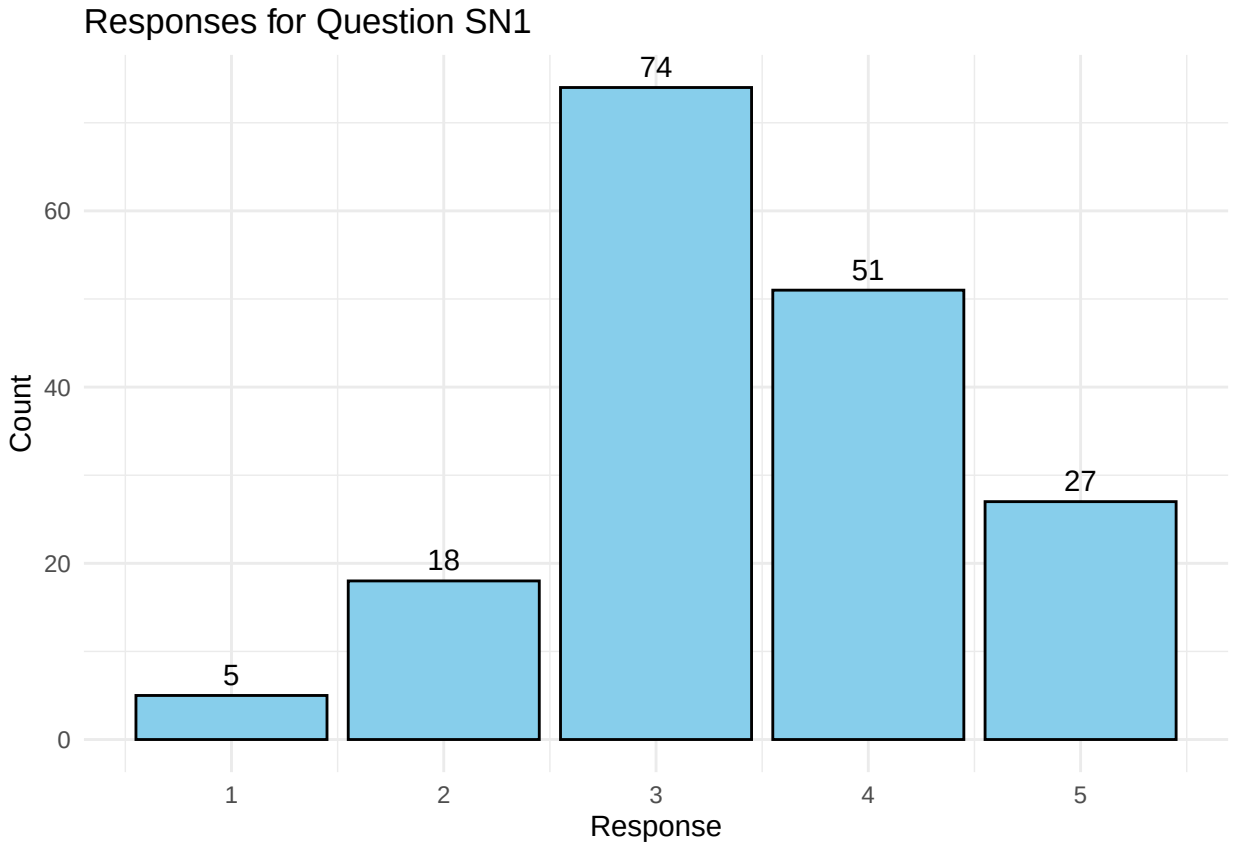
SN1: How much do others influence your decision to use the Moodle app?

```
library(dplyr)

SN1_response_counts <- uni_students_satisfaction %>%
  count(SN1)

SN1_response_counts
```

```
## # A tibble: 5 x 2
##     SN1     n
##   <dbl> <int>
## 1     1     5
## 2     2    18
```

```
## 3     3    74
## 4     4    51
## 5     5    27
```

```r
library(ggplot2)

ggplot(SN1_response_counts, aes(x = SN1, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question SN1",
       x = "Response",
       y = "Count") +
  theme_minimal()
```



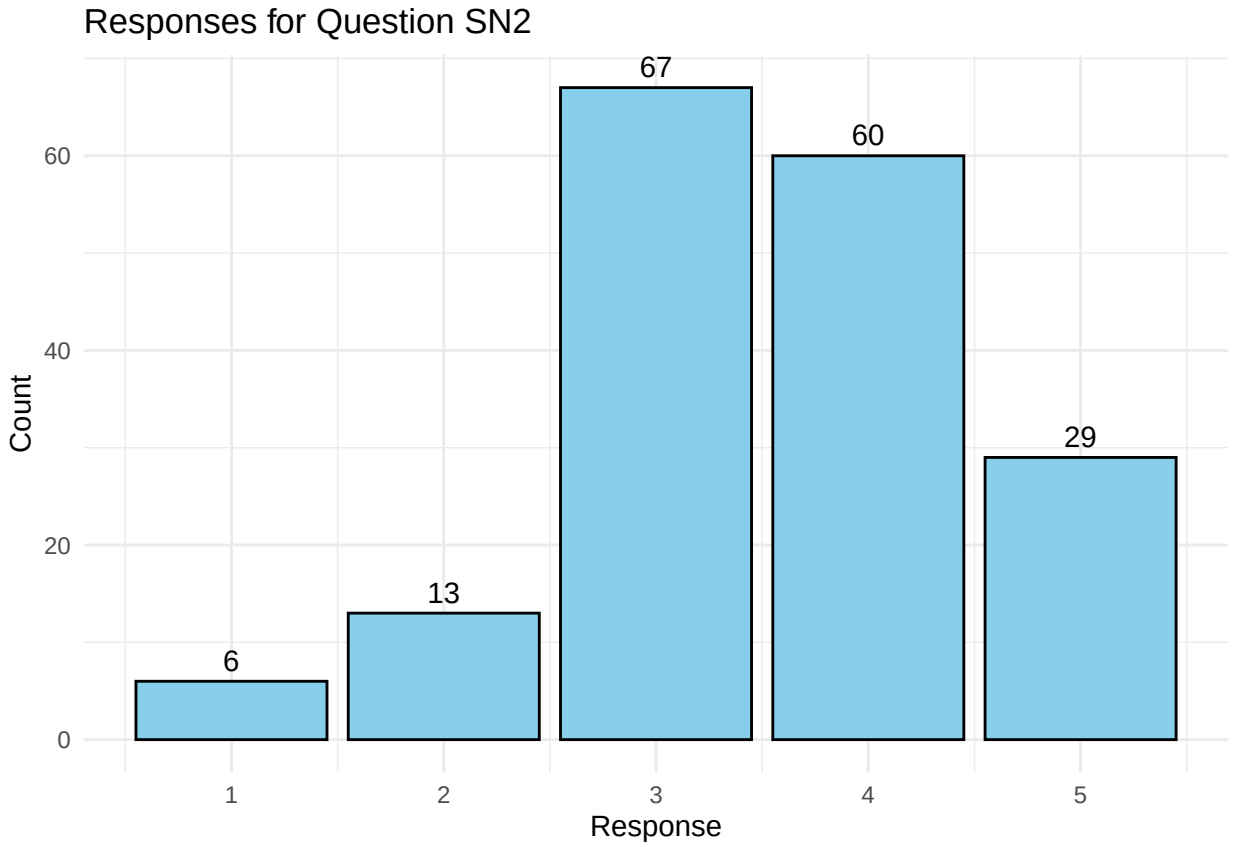
SN2: How important is it to you that your peers support using the Moodle app?

```r
library(dplyr)

SN2_response_counts <- uni_students_satisfaction %>%
  count(SN2)

SN2_response_counts
```

```
## # A tibble: 5 x 2
##     SN2     n
##   <dbl> <int>
## 1     1     6
## 2     2    13
## 3     3    67
```

```
## 4     4    60
## 5     5    29
```

```r
library(ggplot2)

ggplot(SN2_response_counts, aes(x = SN2, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question SN2",
       x = "Response",
       y = "Count") +
  theme_minimal()
```



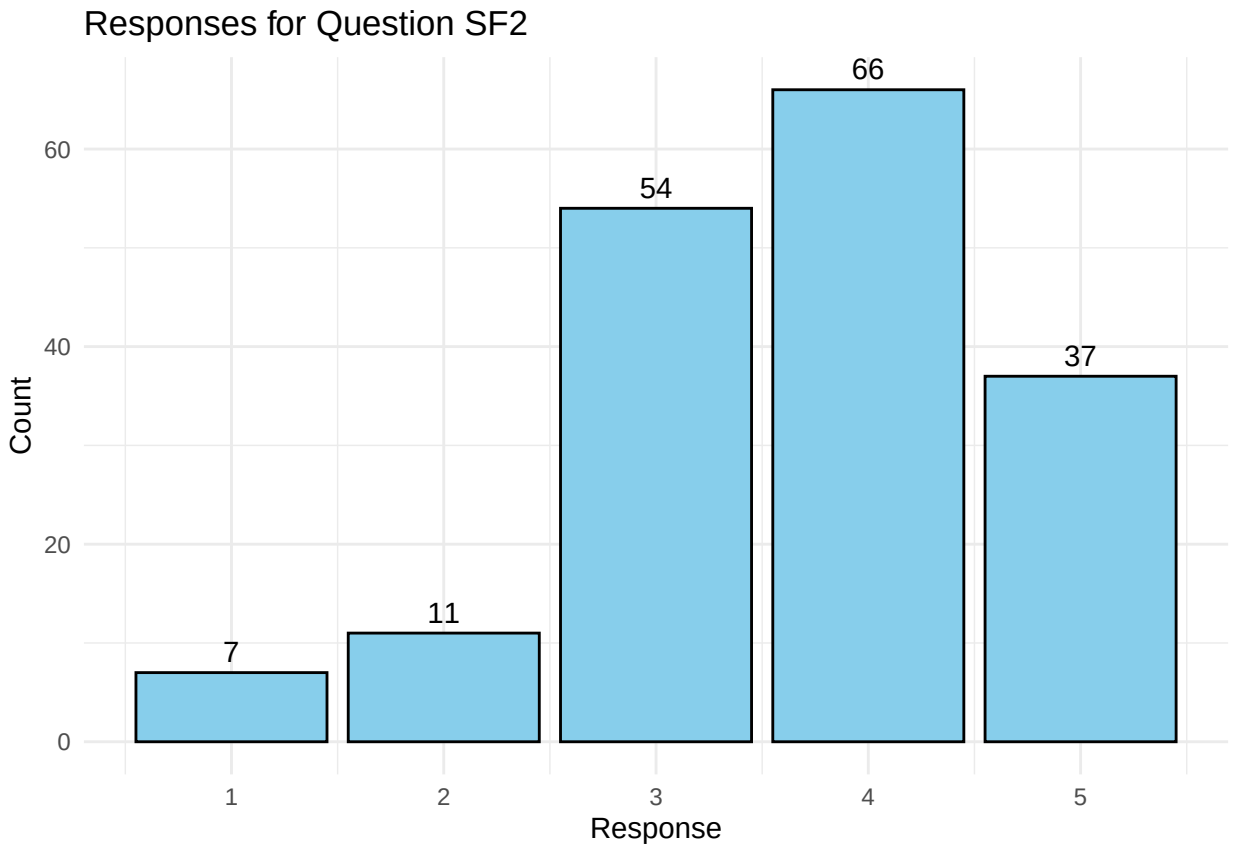
SF2: Has the university's encouragement influenced your view of the Moodle app?

```r
library(dplyr)

SF2_response_counts <- uni_students_satisfaction %>%
  count(SF2)

SF2_response_counts
```

```
## # A tibble: 5 x 2
##     SF2     n
##   <dbl> <int>
## 1     1     7
## 2     2    11
## 3     3    54
## 4     4    66
```

```
## 5     5    37
```

```
library(ggplot2)

ggplot(SF2_response_counts, aes(x = SF2, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question SF2",
       x = "Response",
       y = "Count") +
  theme_minimal()
```

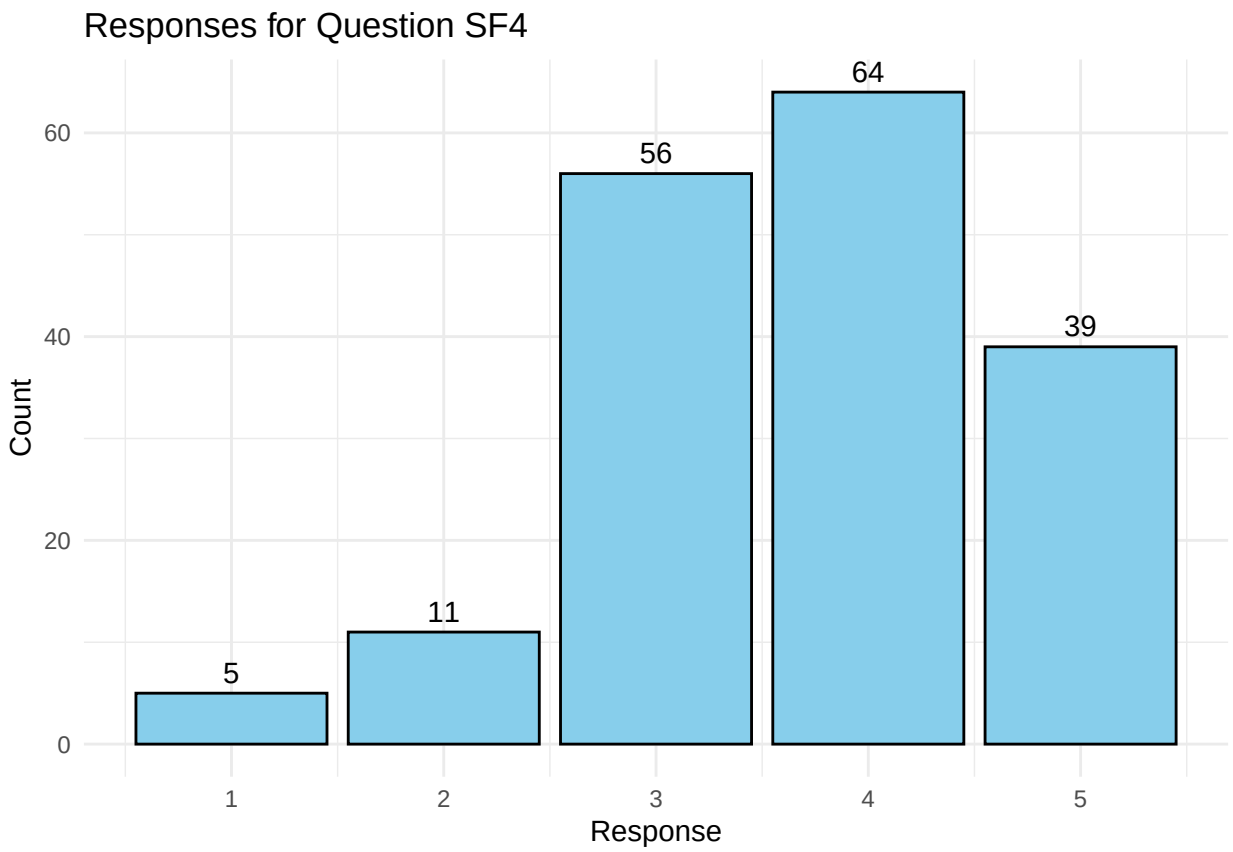


SF4: How supportive do you find the university's administration in promoting the use of the Moodle app?

```
library(dplyr)

SF4_response_counts <- uni_students_satisfaction %>%
  count(SF4)

SF4_response_counts
```

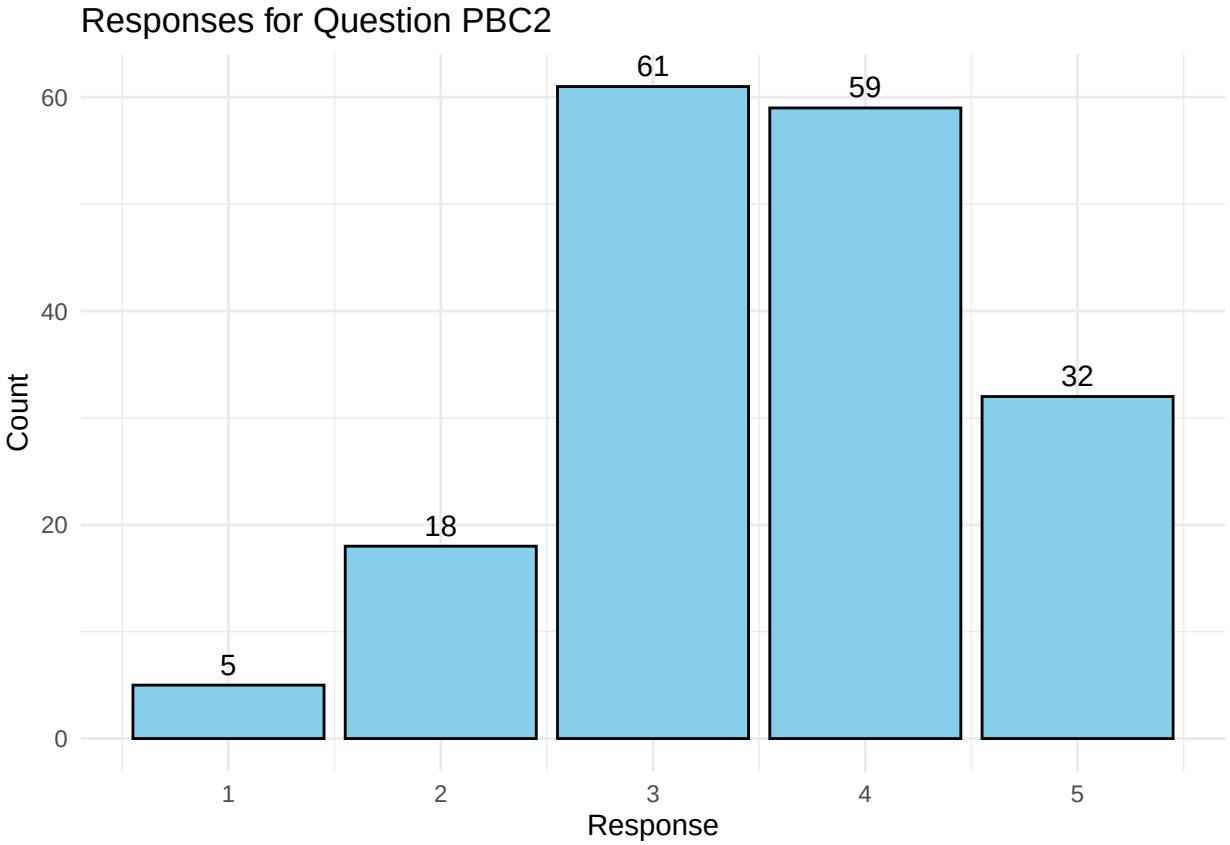
```
## # A tibble: 5 x 2
##     SF4     n
##   <dbl> <int>
## 1     1     5
## 2     2    11
## 3     3    56
## 4     4    64
## 5     5    39
```

```r
library(ggplot2)

ggplot(SF4_response_counts, aes(x = SF4, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
  labs(title = "Responses for Question SF4",
       x = "Response",
       y = "Count") +
  theme_minimal()
```




```
Facilitating Conditions:
```

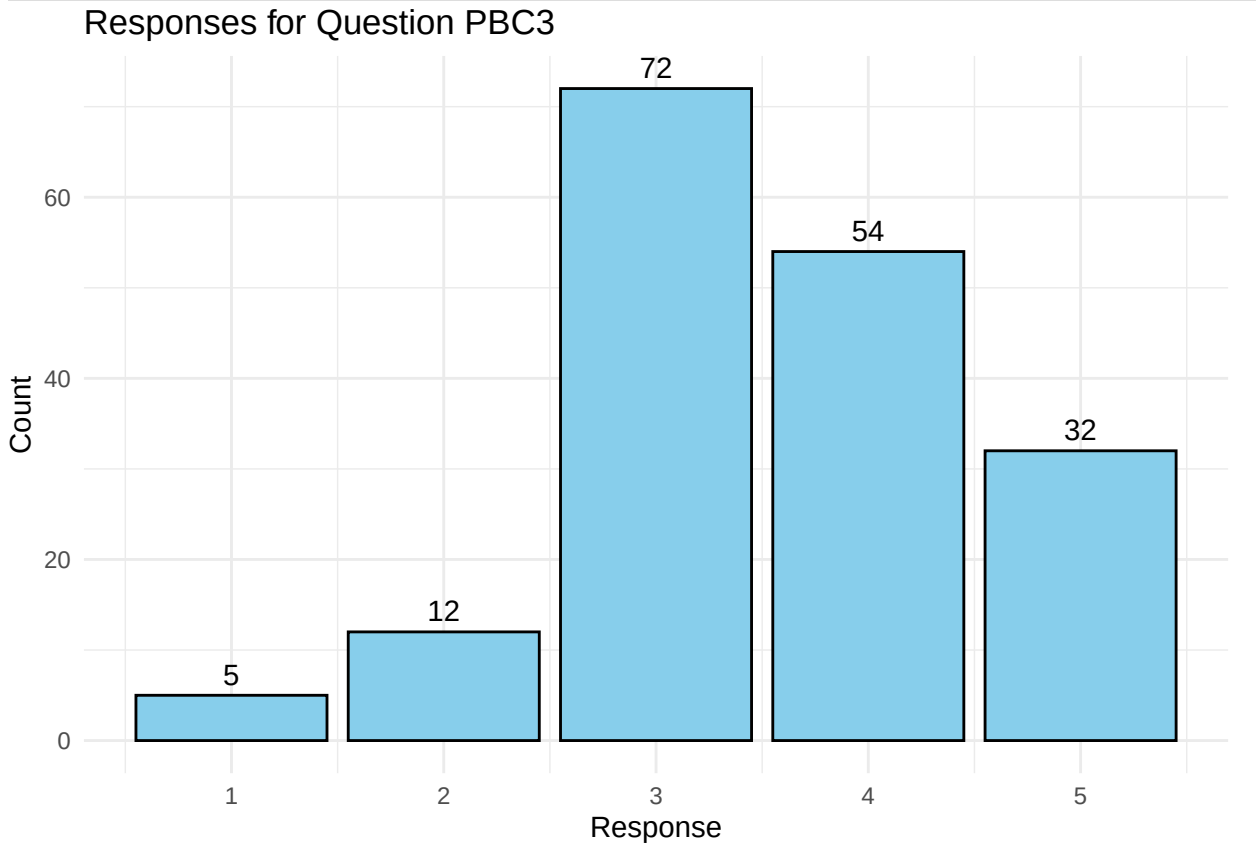
PBC2: Do you think you have everything you need to use the Moodle app effectively?
“‘r library(dplyr)
PBC2_response_counts <- uni_students_satisfaction %>% count(PBC2)
PBC2_response_counts “‘
A tibble: 5 x 2 ## PBC2 n ## <dbl> <int> ## 1 1 5 ## 2 2 18 ## 3 3 61 ## 4 4 59 ## 5 5 32
“‘r library(ggplot2)
ggplot(PBC2_response_counts, aes(x = PBC2, y = n)) + geom_bar(stat = “identity”, fill = “skyblue”, color = “black”) + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = “Responses for Question PBC2”, x = “Response”, y = “Count”) + theme_minimal() “‘



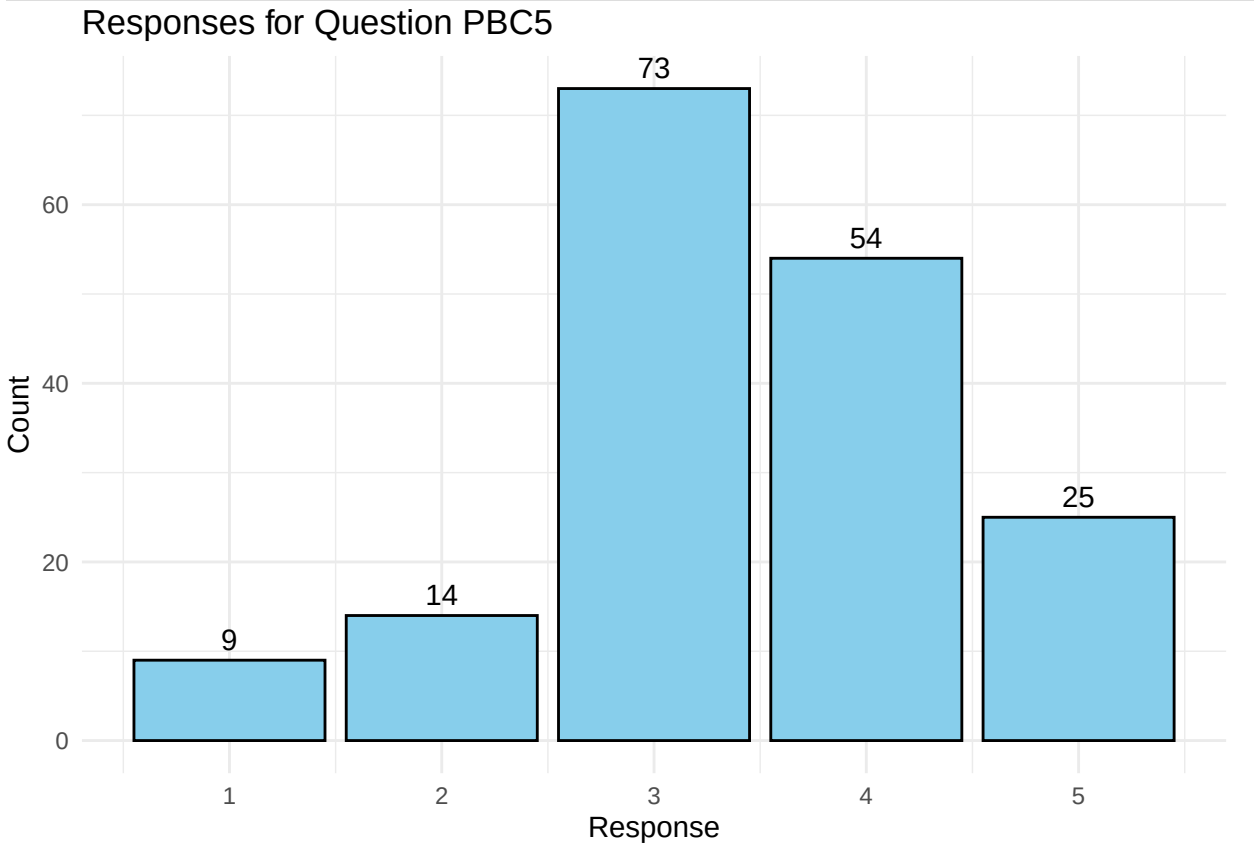
PBC3: Do you feel confident in your knowledge of how to use the Moodle app?
“‘r library(dplyr)
PBC3_response_counts <- uni_students_satisfaction %>% count(PBC3)
PBC3_response_counts “‘

```
## # A tibble: 5 x 2 ##    PBC3     n ##   <dbl> <int> ## 1     1     5 ## 2     2    12
## 3     3    72 ## 4     4    54 ## 5     5    32
```

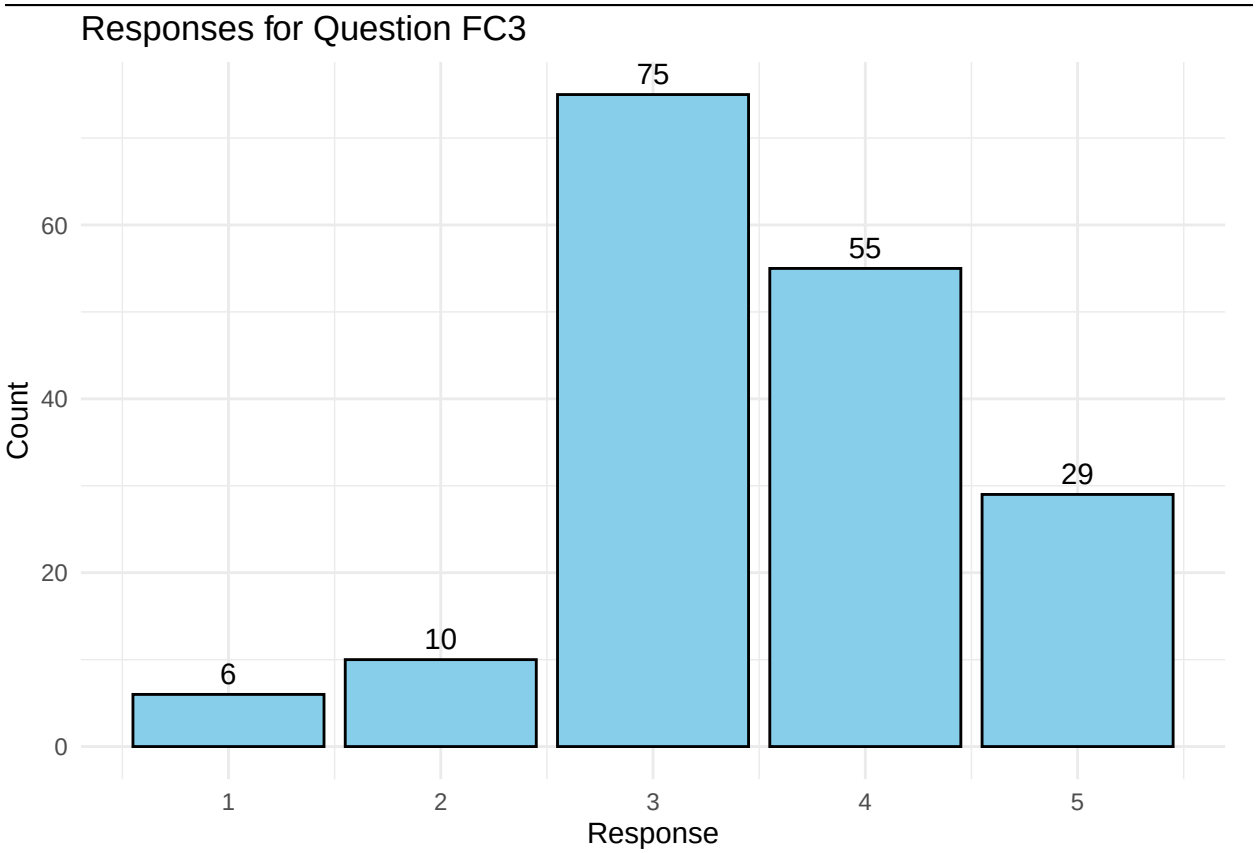
“‘r library(ggplot2)
ggplot(PBC3_response_counts, aes(x = PBC3, y = n)) + geom_bar(stat = “identity”, fill = “skyblue”, color = “black”) + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = “Responses for Question PBC3”, x = “Response”, y = “Count”) + theme_minimal() “‘



PBC5: Have you faced any issues using the Moodle app with other systems?
“‘r library(dplyr)
PBC5_response_counts <- uni_students_satisfaction %>% count(PBC5)
PBC5_response_counts “‘
A tibble: 5 x 2 ## PBC5 n ## <dbl> <int> ## 1 1 9 ## 2 2 14 ## 3 3 73 ## 4 4 54 ## 5 5 25
“‘r library(ggplot2)
ggplot(PBC5_response_counts, aes(x = PBC5, y = n)) + geom_bar(stat = “identity”, fill = “skyblue”, color = “black”) + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = “Responses for Question PBC5”, x = “Response”, y = “Count”) + theme_minimal() “‘

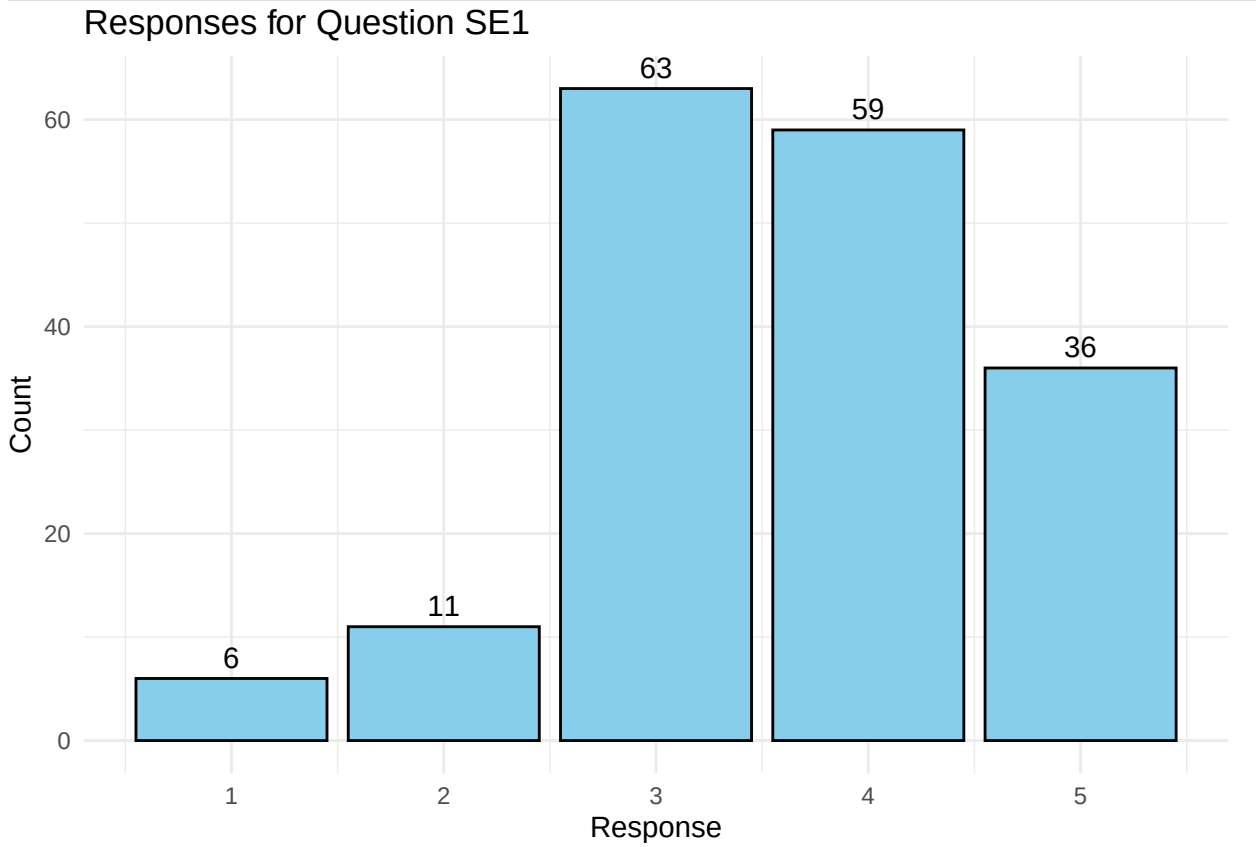


FC3: How easy is it to get help if you encounter problems with the Moodle app?
“‘r library(dplyr)
FC3_response_counts <- uni_students_satisfaction %>% count(FC3)
FC3_response_counts “‘
A tibble: 5 x 2 ## FC3 n ## <dbl> <int> ## 1 1 6 ## 2 2 10 ## 3 3 75 ## 4 4 55 ## 5 5 29
“‘r library(ggplot2)
ggplot(FC3_response_counts, aes(x = FC3, y = n)) + geom_bar(stat = “identity”, fill = “skyblue”, color = “black”) + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = “Responses for Question FC3”, x = “Response”, y = “Count”) + theme_minimal() “‘

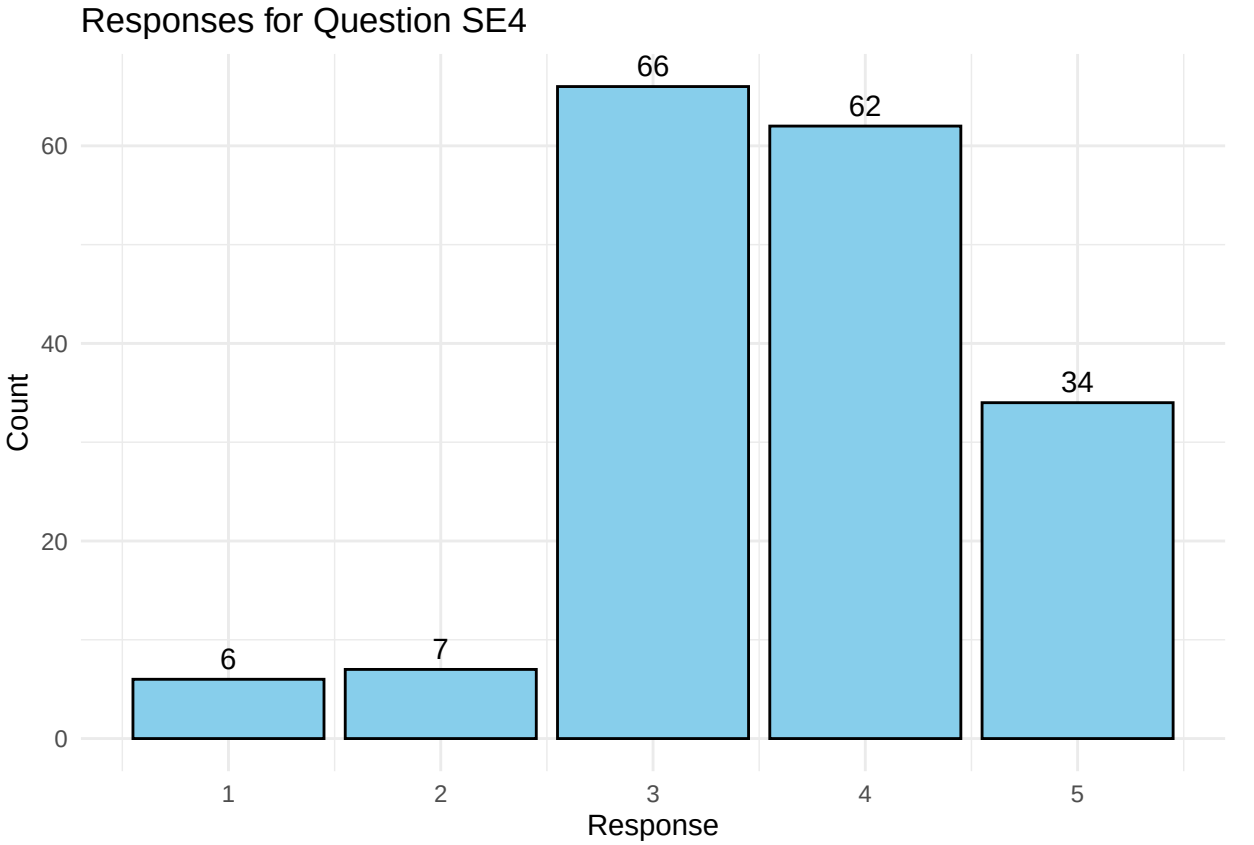



```
Self-Efficacy:
```

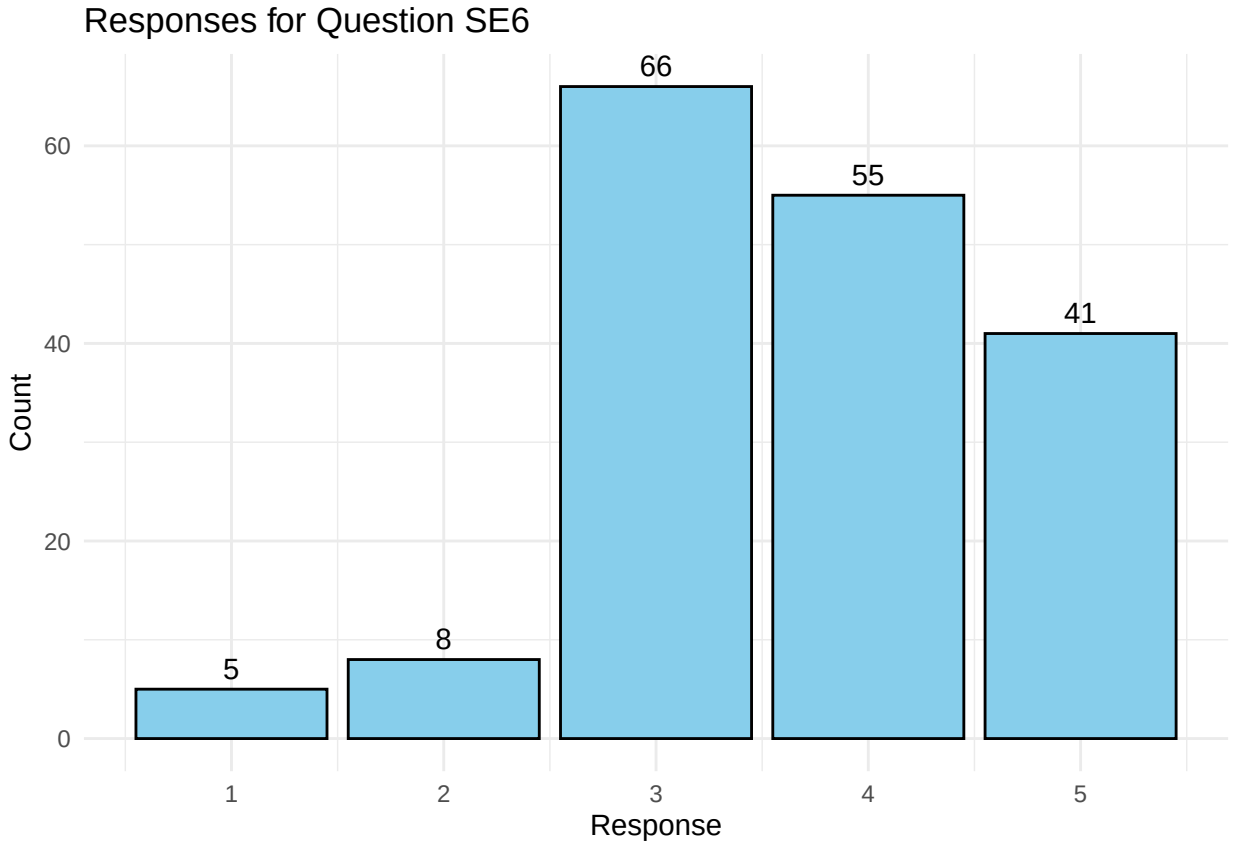
SE1: How confident are you in your ability to use the Moodle app on your own?
“‘r library(dplyr)
SE1_response_counts <- uni_students_satisfaction %>% count(SE1)
SE1_response_counts “‘
```
## # A tibble: 5 x 2 ##     SE1     n ##   <dbl> <int> ## 1     1     6 ## 2     2    11
## 3     3    63 ## 4     4    59 ## 5     5    36
```
“‘r library(ggplot2)
ggplot(SE1_response_counts, aes(x = SE1, y = n)) + geom_bar(stat = “identity”, fill = “skyblue”, color = “black”) + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = “Responses for Question SE1”, x = “Response”, y = “Count”) + theme_minimal() “‘



SE4: Would you feel comfortable asking for help if you needed it while using the Moodle app?
“‘r library(dplyr)
SE4_response_counts <- uni_students_satisfaction %>% count(SE4)
SE4_response_counts “‘
A tibble: 5 x 2 ## SE4 n ## <dbl> <int> ## 1 1 6 ## 2 2 7 ## 3 3 66 ## 4 4 62 ## 5 5 34
“‘r library(ggplot2)
ggplot(SE4_response_counts, aes(x = SE4, y = n)) + geom_bar(stat = “identity”, fill = “skyblue”, color = “black”) + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = “Responses for Question SE4”, x = “Response”, y = “Count”) + theme_minimal() “‘



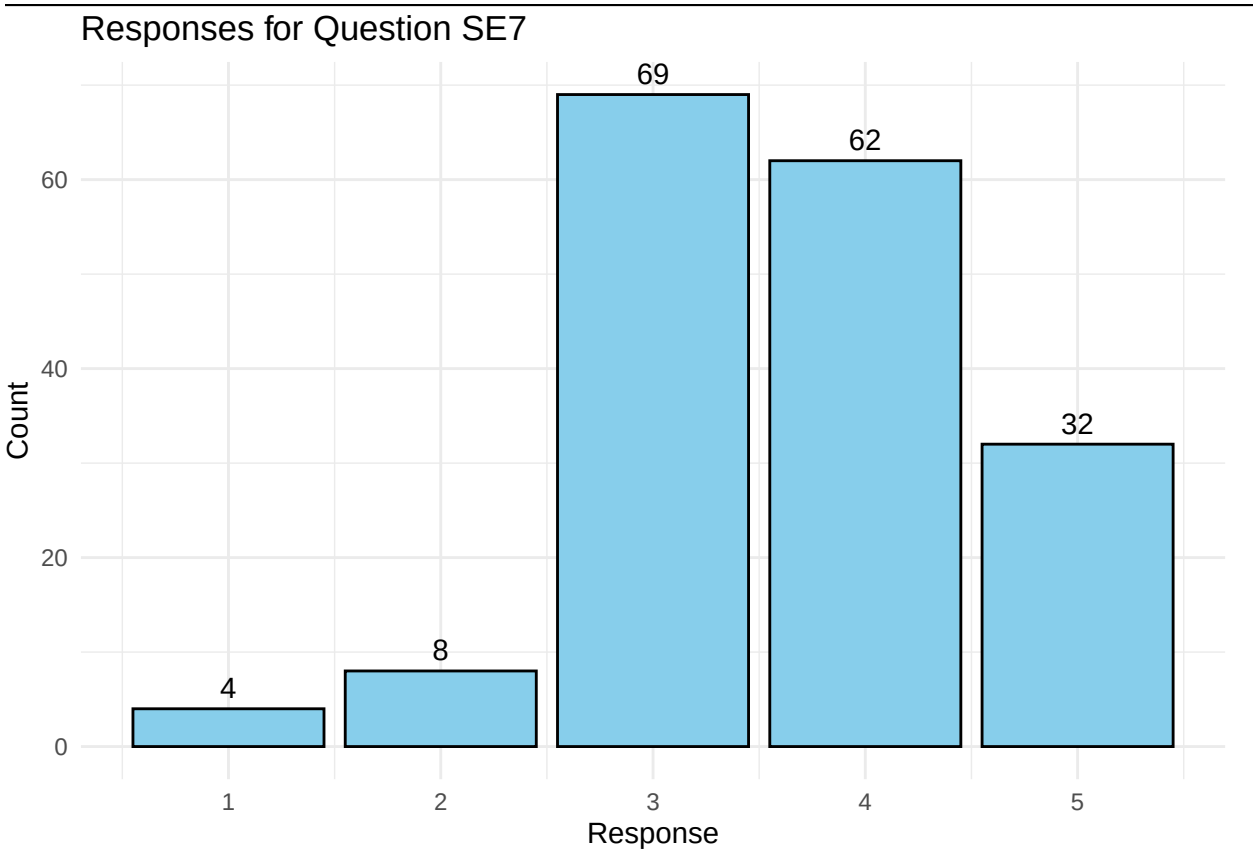
SE6: Do you think having enough time would help you use the Moodle app better?
“‘r library(dplyr)
SE6_response_counts <- uni_students_satisfaction %>% count(SE6)
SE6_response_counts “‘
A tibble: 5 x 2 ## SE6 n ## <dbl> <int> ## 1 1 5 ## 2 2 8 ## 3 3 66 ## 4 4 55 ## 5 5 41
“‘r library(ggplot2)
ggplot(SE6_response_counts, aes(x = SE6, y = n)) + geom_bar(stat = “identity”, fill = “skyblue”, color = “black”) + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = “Responses for Question SE6”, x = “Response”, y = “Count”) + theme_minimal() “‘



SE7: How helpful do you find the built-in help feature in the Moodle app?
“‘r library(dplyr)
SE7_response_counts <- uni_students_satisfaction %>% count(SE7)
SE7_response_counts “‘

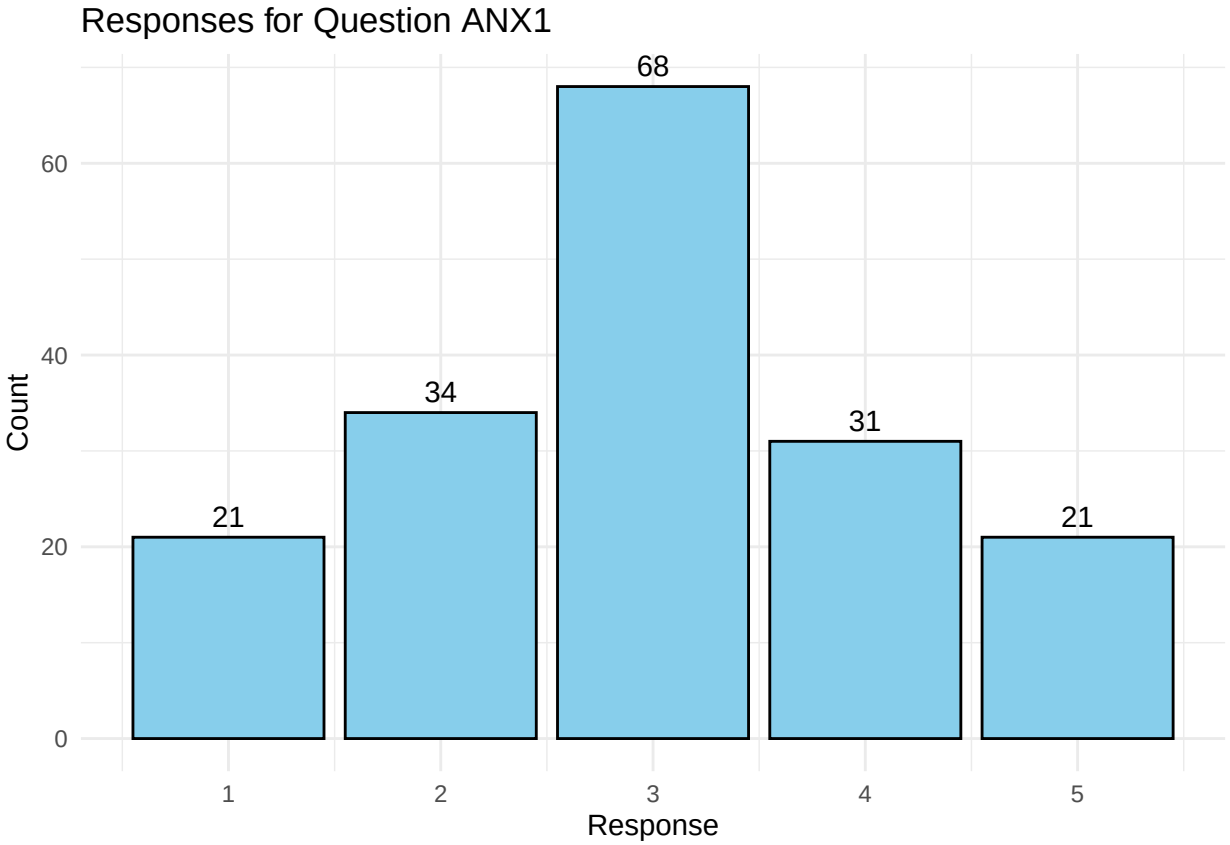
```
## # A tibble: 5 x 2 ##     SE7     n ##   <dbl> <int> ## 1     1     4 ## 2     2     8
## 3     3    69 ## 4     4    62 ## 5     5    32
```

“‘r library(ggplot2)
ggplot(SE7_response_counts, aes(x = SE7, y = n)) + geom_bar(stat = “identity”, fill = “skyblue”, color = “black”) + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = “Responses for Question SE7”, x = “Response”, y = “Count”) + theme_minimal() “‘

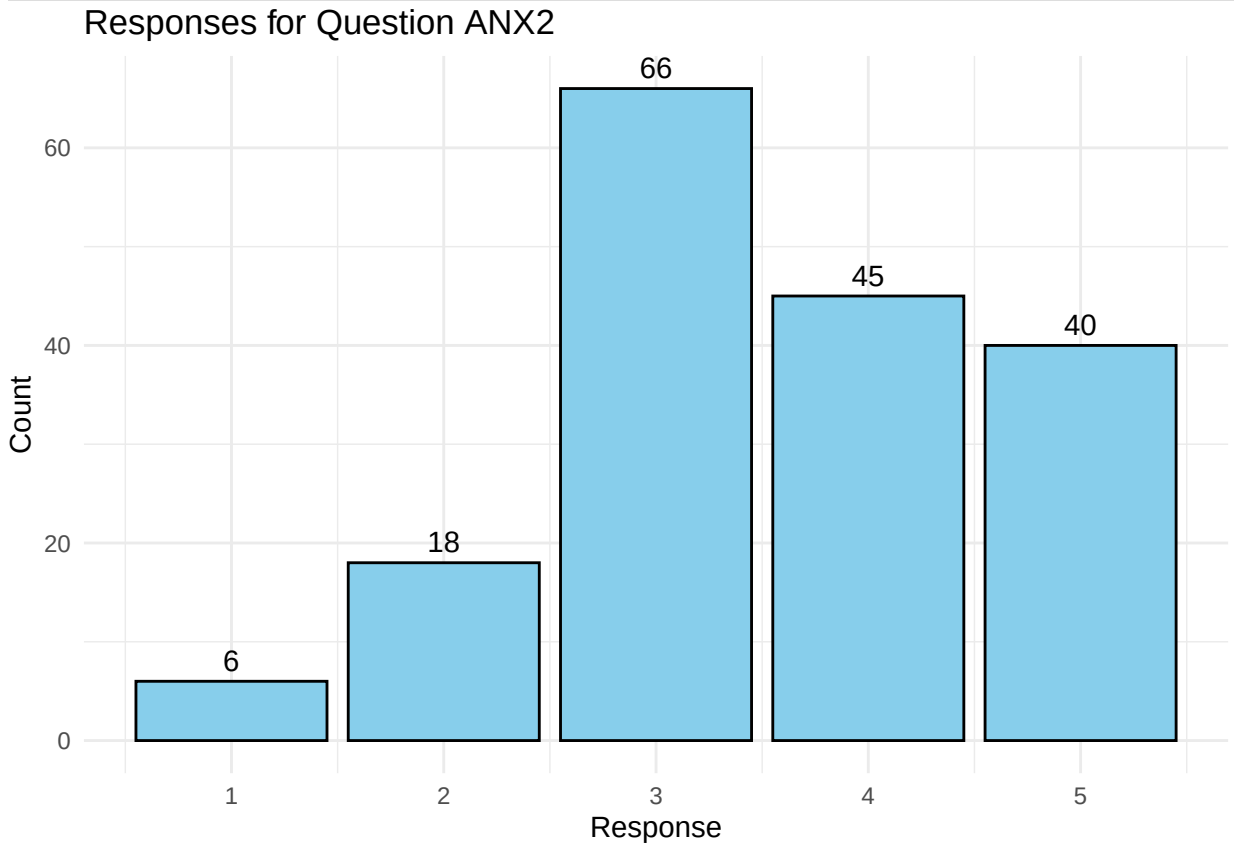



```
Anxiety:
```

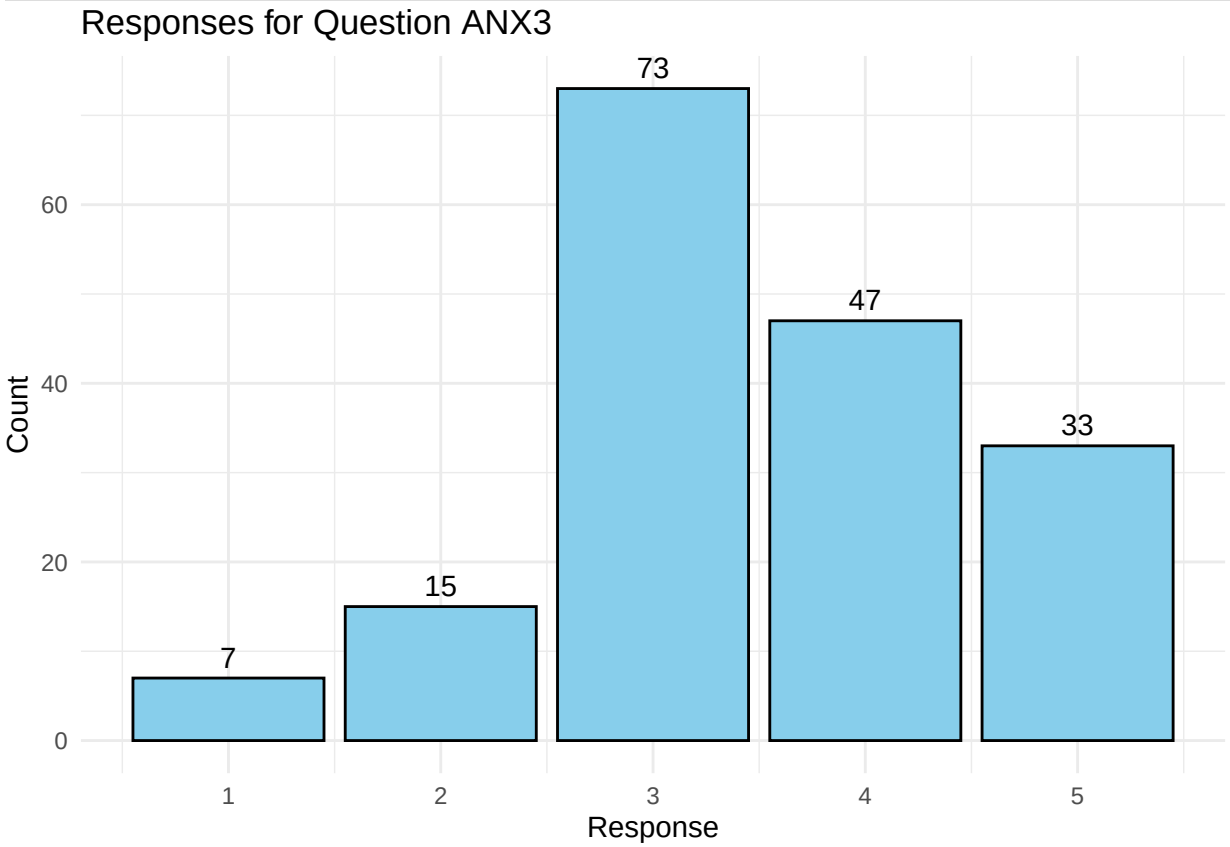
ANX1: Do you feel nervous about using the Moodle app?
“‘r library(dplyr)
ANX1_response_counts <- uni_students_satisfaction %>% count(ANX1)
ANX1_response_counts “‘
```
## # A tibble: 5 x 2 ##    ANX1     n ##   <dbl> <int> ## 1     1    21 ## 2     2    34
## 3     3    68 ## 4     4    31 ## 5     5    21
```
“‘r library(ggplot2)
ggplot(ANX1_response_counts, aes(x = ANX1, y = n)) + geom_bar(stat = “identity”, fill = “skyblue”, color = “black”) + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = “Responses for Question ANX1”, x = “Response”, y = “Count”) + theme_minimal() “‘



ANX2: How worried are you about accidentally losing information while using the Moodle app?
“‘r library(dplyr)
ANX2_response_counts <- uni_students_satisfaction %>% count(ANX2)
ANX2_response_counts “‘
A tibble: 5 x 2 ## ANX2 n ## <dbl> <int> ## 1 1 6 ## 2 2 18 ## 3 3 66 ## 4 4 45 ## 5 5 40
“‘r library(ggplot2)
ggplot(ANX2_response_counts, aes(x = ANX2, y = n)) + geom_bar(stat = “identity”, fill = “skyblue”, color = “black”) + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = “Responses for Question ANX2”, x = “Response”, y = “Count”) + theme_minimal() “‘



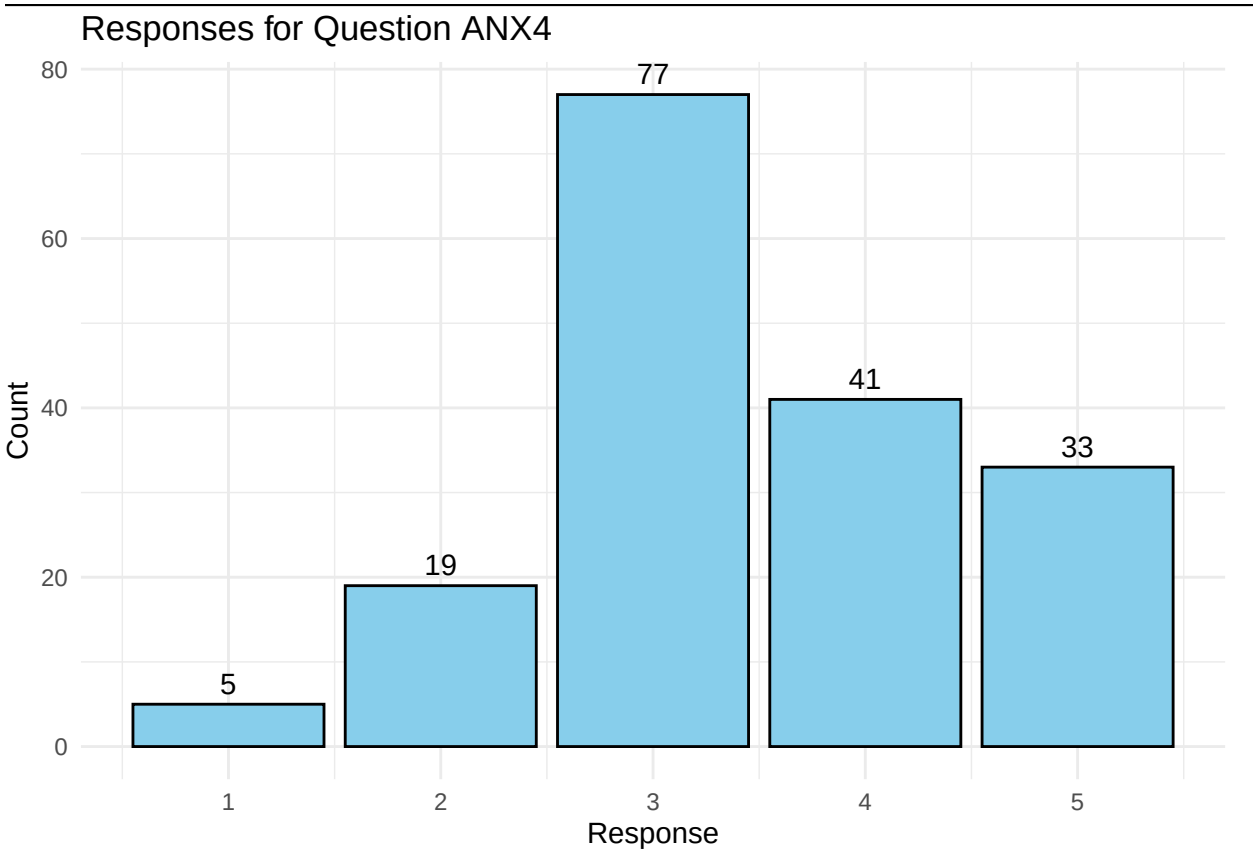
ANX3: Do you hesitate to use the Moodle app because you're afraid of making mistakes?
"'r library(dplyr)
ANX3_response_counts <- uni_students_satisfaction %>% count(ANX3)
ANX3_response_counts "'
A tibble: 5 x 2 ## ANX3 n ## <dbl> <int> ## 1 1 7 ## 2 2 15 ## 3 3 73 ## 4 4 47 ## 5 5 33
"'r library(ggplot2)
ggplot(ANX3_response_counts, aes(x = ANX3, y = n)) + geom_bar(stat = "identity", fill = "skyblue", color = "black") + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = "Responses for Question ANX3", x = "Response", y = "Count") + theme_minimal() "'



ANX4: Would you say the Moodle app is intimidating to use?
“‘r library(dplyr)
ANX4_response_counts <- uni_students_satisfaction %>% count(ANX4)
ANX4_response_counts “‘

```
## # A tibble: 5 x 2 ##    ANX4     n ##   <dbl> <int> ## 1     1     5 ## 2     2    19
## 3     3    77 ## 4     4    41 ## 5     5    33
```

“‘r library(ggplot2)
ggplot(ANX4_response_counts, aes(x = ANX4, y = n)) + geom_bar(stat = “identity”, fill = “skyblue”, color = “black”) + geom_text(aes(label = n), vjust = -0.5) + # Add labels with count above each bar labs(title = “Responses for Question ANX4”, x = “Response”, y = “Count”) + theme_minimal() “‘



Behavioral Intention to Use the System:

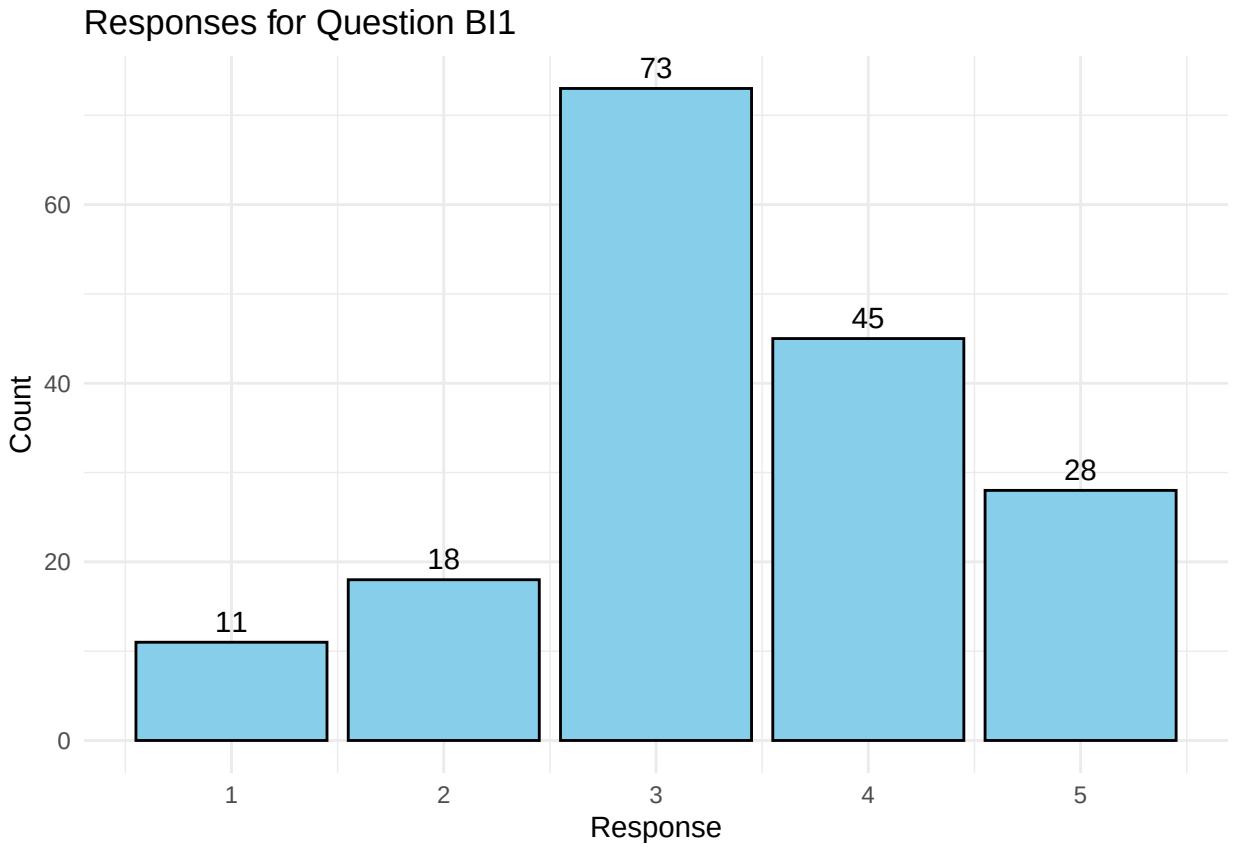
BI1: Do you plan to start using the Moodle app in your studies within the next few months?

```
library(dplyr)

BI1_response_counts <- uni_students_satisfaction %>%
  count(BI1)

BI1_response_counts
```

```
## # A tibble: 5 x 2
##     BI1     n
##   <dbl> <int>
## 1     1    11
## 2     2    18
## 3     3    73
## 4     4    45
## 5     5    28
```

```
library(ggplot2)

ggplot(BI1_response_counts, aes(x = BI1, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
```

```
  labs(title = "Responses for Question BI1",
       x = "Response",
       y = "Count") +
  theme_minimal()
```



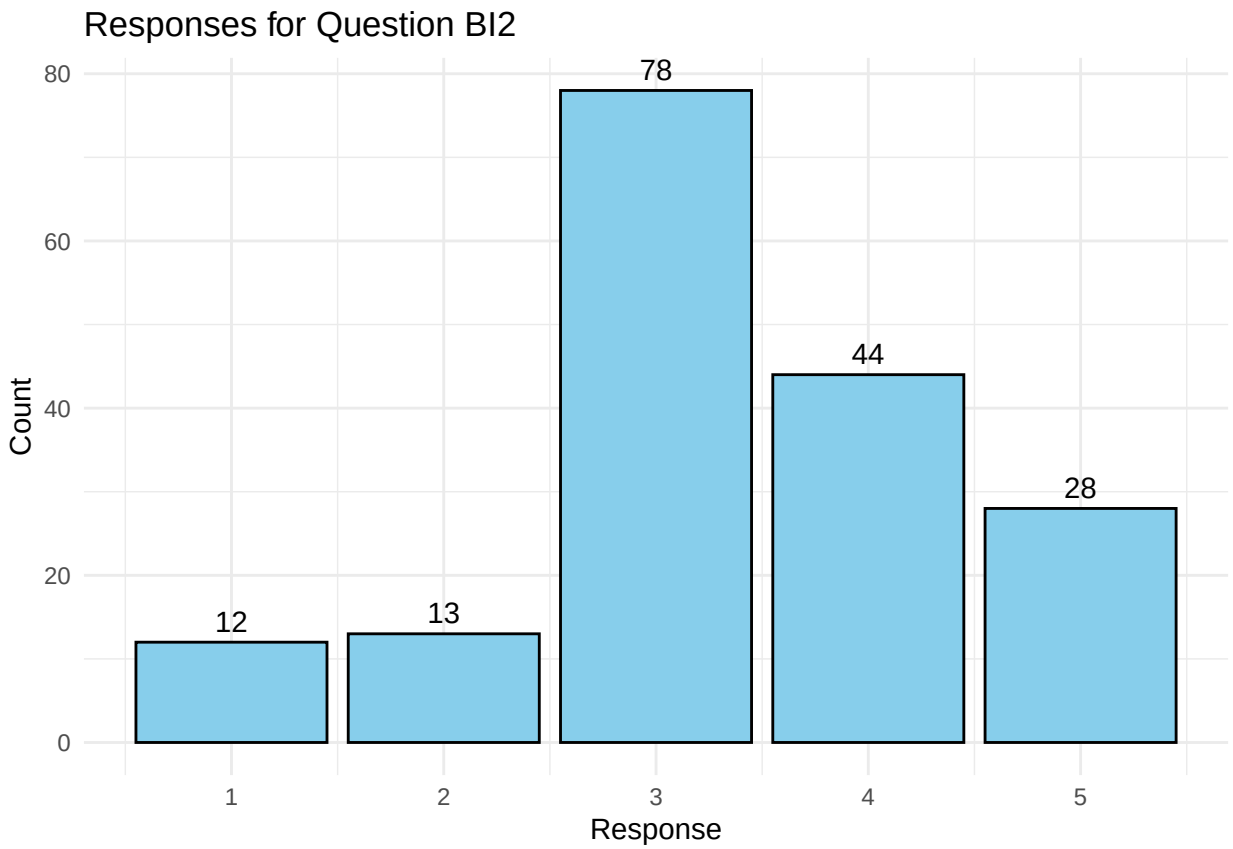
BI2: How likely are you to use the Moodle app for your academic work in the next few months?

```
library(dplyr)

BI2_response_counts <- uni_students_satisfaction %>%
  count(BI2)

BI2_response_counts
```

```
## # A tibble: 5 x 2
##     BI2     n
##   <dbl> <int>
## 1     1    12
## 2     2    13
## 3     3    78
## 4     4    44
## 5     5    28
```

```
library(ggplot2)

ggplot(BI2_response_counts, aes(x = BI2, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
```

```
  labs(title = "Responses for Question BI2",
       x = "Response",
       y = "Count") +
  theme_minimal()
```



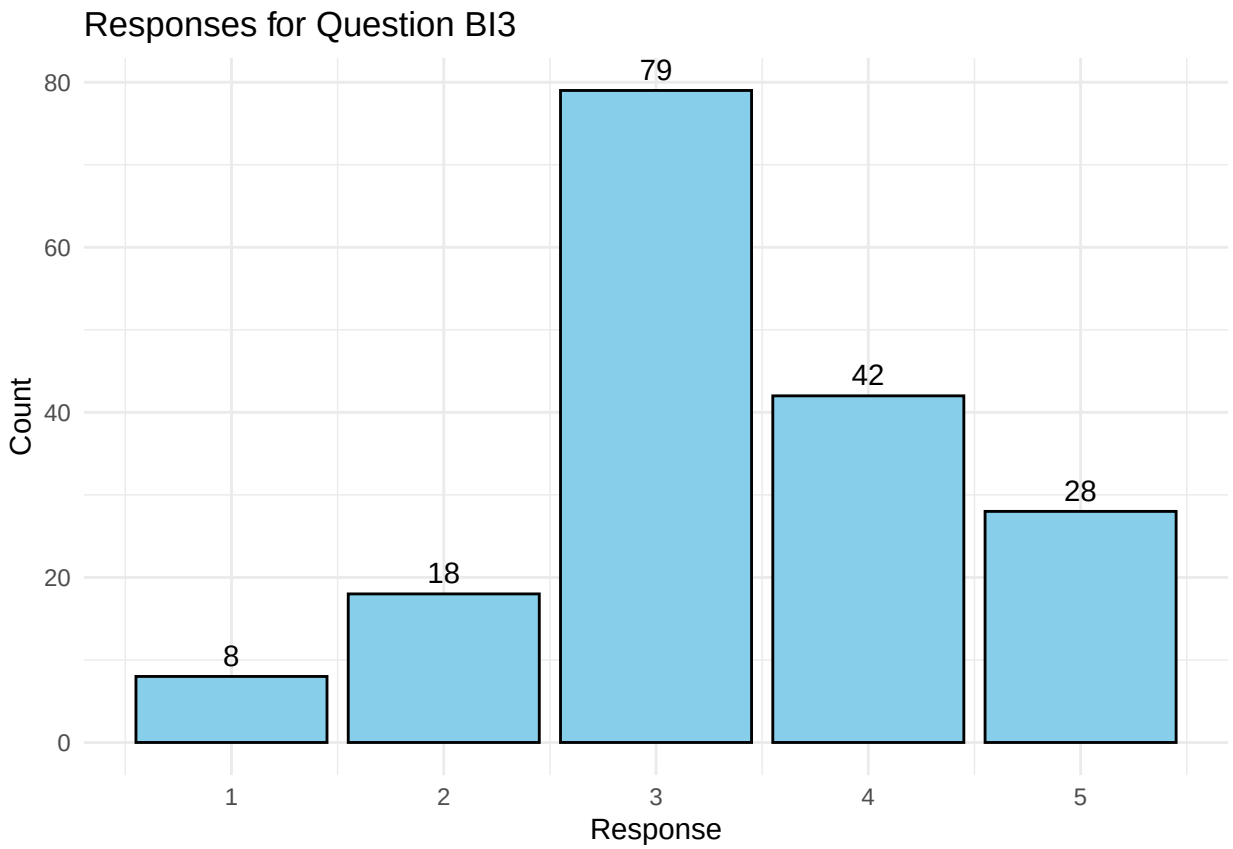
BI3: Have you already planned to integrate the Moodle app into your academic routine soon?

```
library(dplyr)

BI3_response_counts <- uni_students_satisfaction %>%
  count(BI3)

BI3_response_counts
```

```
## # A tibble: 5 x 2
##     BI3     n
##   <dbl> <int>
## 1     1     8
## 2     2    18
## 3     3    79
## 4     4    42
## 5     5    28
```

```
library(ggplot2)

ggplot(BI3_response_counts, aes(x = BI3, y = n)) +
  geom_bar(stat = "identity", fill = "skyblue", color = "black") +
  geom_text(aes(label = n), vjust = -0.5) +  # Add labels with count above each bar
```

```
  labs(title = "Responses for Question BI3",
       x = "Response",
       y = "Count") +
  theme_minimal()
```




```
# Load the VIM package
library(VIM)
```

```
## Loading required package: colorspace
```

```
## Loading required package: grid
```

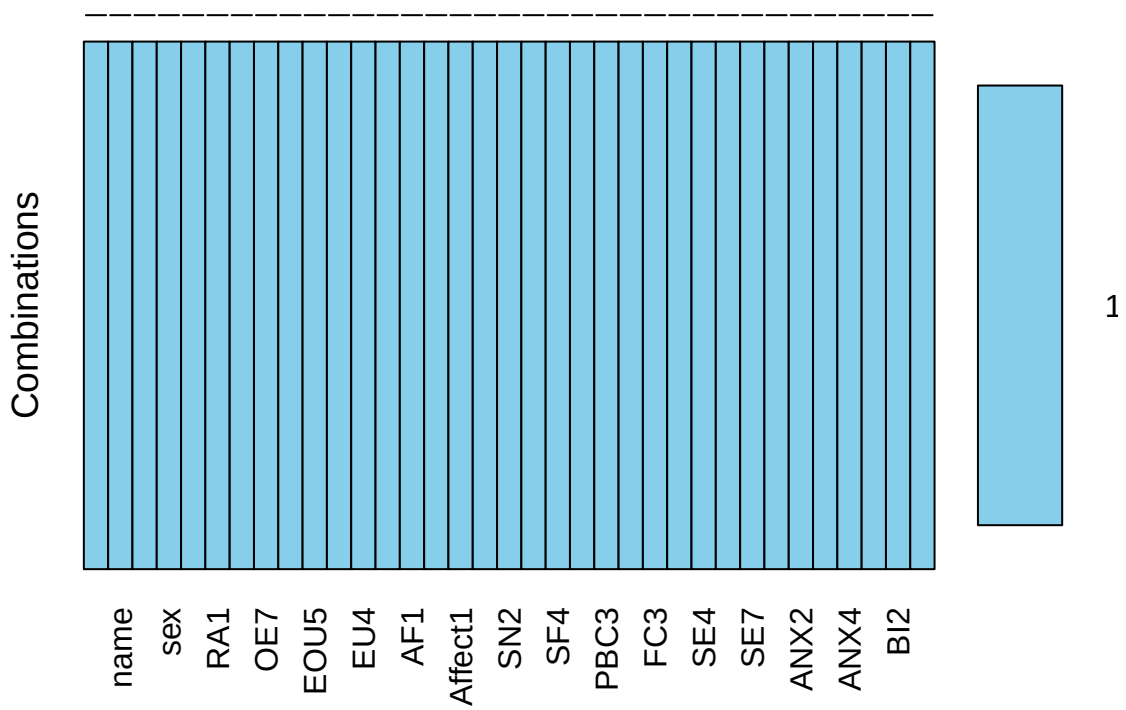
```
## VIM is ready to use.
```

```
## Suggestions and bug-reports can be submitted at: https://github.com/statistikat/VIM/issues
```

```
##
## Attaching package: 'VIM'
```

```
## The following object is masked from 'package:datasets':
##
##     sleep
```

```
# Draw an aggregation plot of biopics
 uni_students_satisfaction%>%
    aggr(combined = TRUE, numbers = TRUE)
```




```r
# Define the determinant categories and their corresponding questions
determinants <- list(
  "Performance Expectancy" = c("U6", "RA1", "RA5", "OE7"),
  "Effort Expectancy" = c("EOU3", "EOU5", "EOU6", "EU4"),
  "Attitude Toward Using Technology" = c("A1", "AF1", "AF2", "Affect1"),
  "Social Influence" = c("SN1", "SN2", "SF2", "SF4"),
  "Facilitating Conditions" = c("PBC2", "PBC3", "PBC5", "FC3"),
  "Self-Efficacy" = c("SE1", "SE4", "SE6", "SE7"),
  "Anxiety" = c("ANX1", "ANX2", "ANX3", "ANX4"),
  "Behavioral Intention to Use the System" = c("BI1", "BI2", "BI3")
)

# Initialize an empty data frame to store results
determinants_stats <- data.frame(Determinant = character(), Mean = numeric(), SD = numeric(), stringsAs

# Loop through each determinant
for (determinant in names(determinants)) {
  # Extract questions corresponding to the determinant
  questions <- determinants[[determinant]]

  # Subset the dataset for the questions corresponding to the determinant
  subset_data <- uni_students_satisfaction[, questions]

  # Compute mean and standard deviation for each question
  means <- apply(subset_data, 2, mean, na.rm = TRUE)
  sds <- apply(subset_data, 2, sd, na.rm = TRUE)

  # Compute mean and standard deviation for the determinant
  determinant_mean <- mean(means)
  determinant_sd <- sd(means)
```

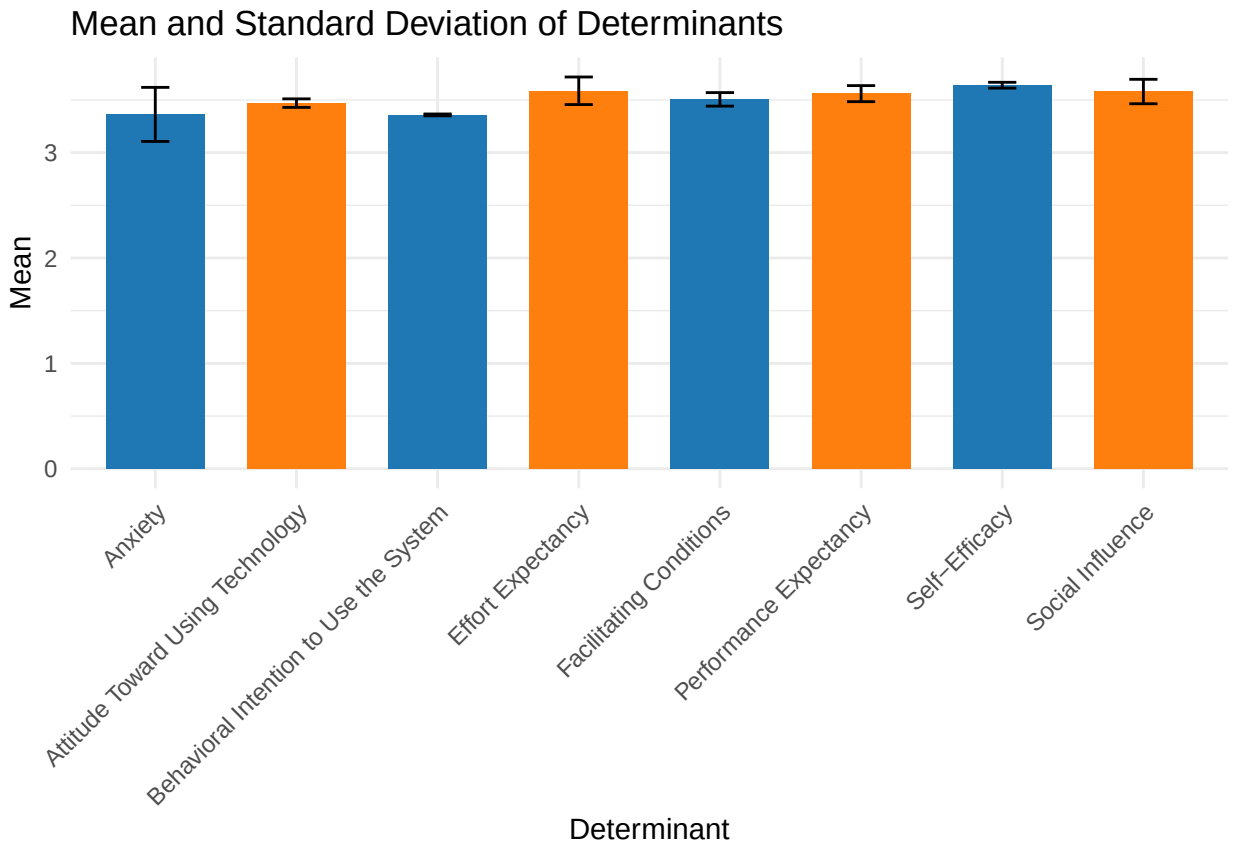
```r
  # Add the determinant stats to the data frame
  determinants_stats <- rbind(determinants_stats, data.frame(Determinant = determinant, Mean = determina
}

# View the resulting data frame
print(determinants_stats)
```

```
##                              Determinant     Mean          SD
## 1                 Performance Expectancy 3.560000 0.076238080
## 2                      Effort Expectancy 3.587143 0.130837179
## 3       Attitude Toward Using Technology 3.470000 0.040506991
## 4                       Social Influence 3.580000 0.115940402
## 5                Facilitating Conditions 3.505714 0.064057797
## 6                          Self-Efficacy 3.640000 0.027602622
## 7                                Anxiety 3.362857 0.256507151
## 8 Behavioral Intention to Use the System 3.358095 0.008728716
```

The results of the code provide insights into different aspects of what students think about the Moodle app. For example, it tells us about students' feelings and expectations. Performance Expectancy shows how much students believe the app is useful for their studies. Attitude Toward Using Technology reveals how students feel about using the app. Social Influence looks at how friends and school support influence students' decisions to use the app. Facilitating Conditions show if students feel confident in their technical skills and support resources. Self-Efficacy tells us if students are comfortable using the app on their own. Behavioral Intention to Use the System shows if students are willing to use the app for their studies.These insights aid in understanding students' overall perception of the app, identifying areas of confidence and potential concerns, such as anxiety despite perceived ease of use.

```r
library(ggplot2)


bar_colors <- c("#1f77b4", "#ff7f0e")

# Create the grouped bar plot
ggplot(determinants_stats, aes(x = Determinant, y = Mean, fill = Determinant)) +
  geom_bar(stat = "identity", position = position_dodge(width = 0.9), width = 0.7) +
  geom_errorbar(aes(ymin = Mean - SD, ymax = Mean + SD), width = 0.2, position = position_dodge(width =
  labs(title = "Mean and Standard Deviation of Determinants",
       x = "Determinant",
       y = "Mean",
       fill = "Determinant") +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1)) +
  scale_fill_manual(values = rep(bar_colors, length(unique(determinants_stats$Determinant)))) +
  guides(fill = FALSE)  # Hide legend for fill color
```

```
## Warning: The `<scale>` argument of `guides()` cannot be `FALSE`. Use "none" instead as
## of ggplot2 3.3.4.
## This warning is displayed once every 8 hours.
## Call `lifecycle::last_lifecycle_warnings()` to see where this warning was
## generated.
```


Mean and Standard Deviation of Determinants
Mean
0
1
2
3
Anxiety
Attitude Toward Using Technology
Behavioral Intention to Use the System
Effort Expectancy
Facilitating Conditions
Performance Expectancy
Self−Efficacy
Social Influence
Determinant