Survey

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Load packages

```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.6
## v forcats   1.0.1     v stringr   1.5.2
## v ggplot2   4.0.1     v tibble    3.3.0
## v lubridate 1.9.4     v tidyr     1.3.1
## v purrr     1.1.0
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(janitor)
```

```
##
## Attaching package: 'janitor'
##
## The following objects are masked from 'package:stats':
##
##     chisq.test, fisher.test
```

```
library(ggplot2)
library(dplyr)

theme_set(
  theme_minimal() +
    theme(plot.title = element_text(hjust = 0.5))
)
```

```
#Import
df_raw <- read_csv("dataset.csv")
```

```
## Rows: 55 Columns: 10
## -- Column specification --------------------------------------------------------
## Delimiter: ","
```

```
## chr (4): Timestamp, Year Level, Average number of hours spent studying per d...
## dbl (6): Age, Number of subjects you are currently enrolled in, How many tim...
##
## 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.
```

```
df_raw <- as.data.frame(df_raw)
```

```
#Clean
df <- df_raw |>
  clean_names() |>
  subset(select = -c(timestamp, feedback_about_on_our_survey))
```

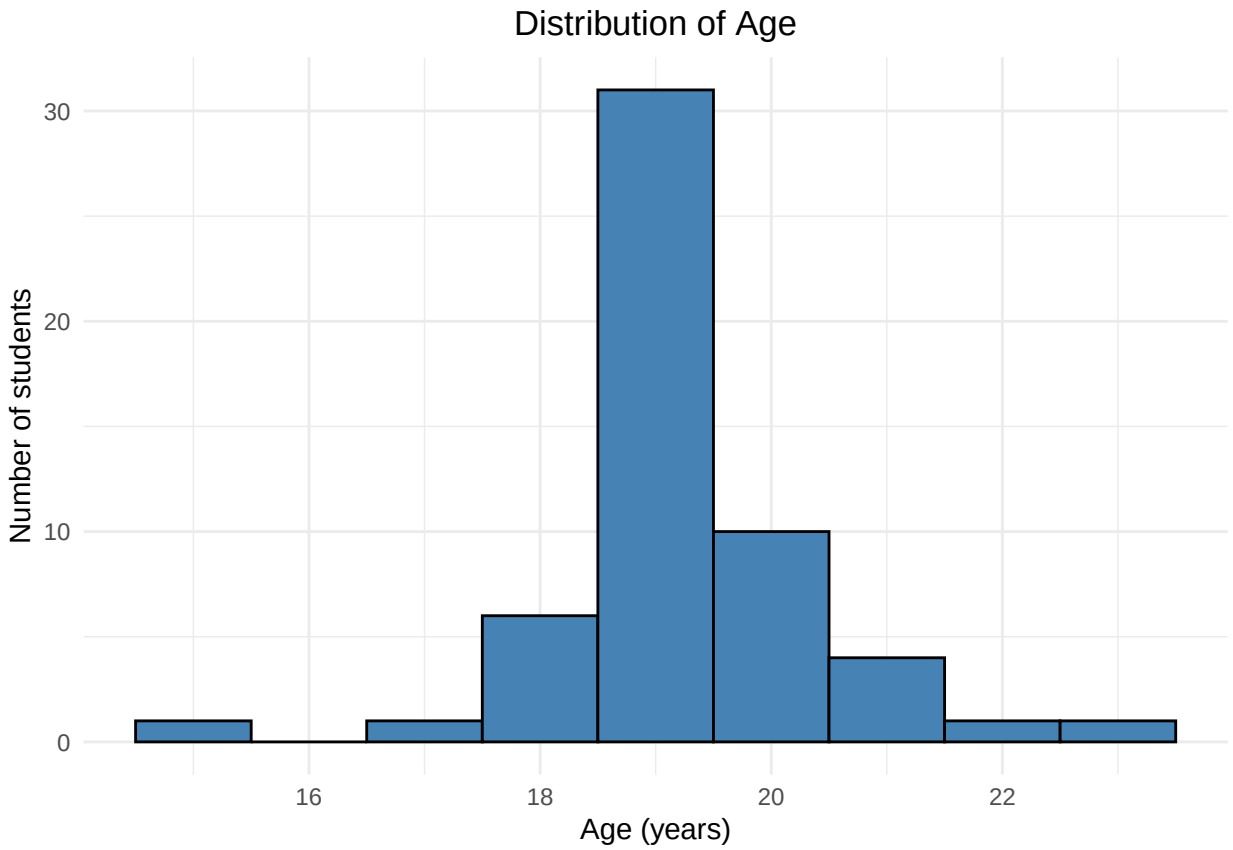
```
#Make sure df is a data.frame
df <- as.data.frame(df)
```

```
#Type conversions
df <- df |>
  mutate(
    gadgets_hours_week = as.numeric(on_average_how_many_hours_per_week_do_you_spend_using_gadgets_for_s
    age = as.numeric(age),
    number_of_subjects_you_are_currently_enrolled_in = as.numeric(number_of_subjects_you_are_currently_
    how_many_times_per_week_do_you_review_your_lessons = as.numeric(how_many_times_per_week_do_you_revi
    how_many_times_per_month_do_you_submit_homework_late = as.numeric(how_many_times_per_month_do_you_su
    how_many_clubs_or_organizations_are_you_involved_in = as.numeric(how_many_clubs_or_organizations_ar
    year_level = as.factor(year_level)
  )
```

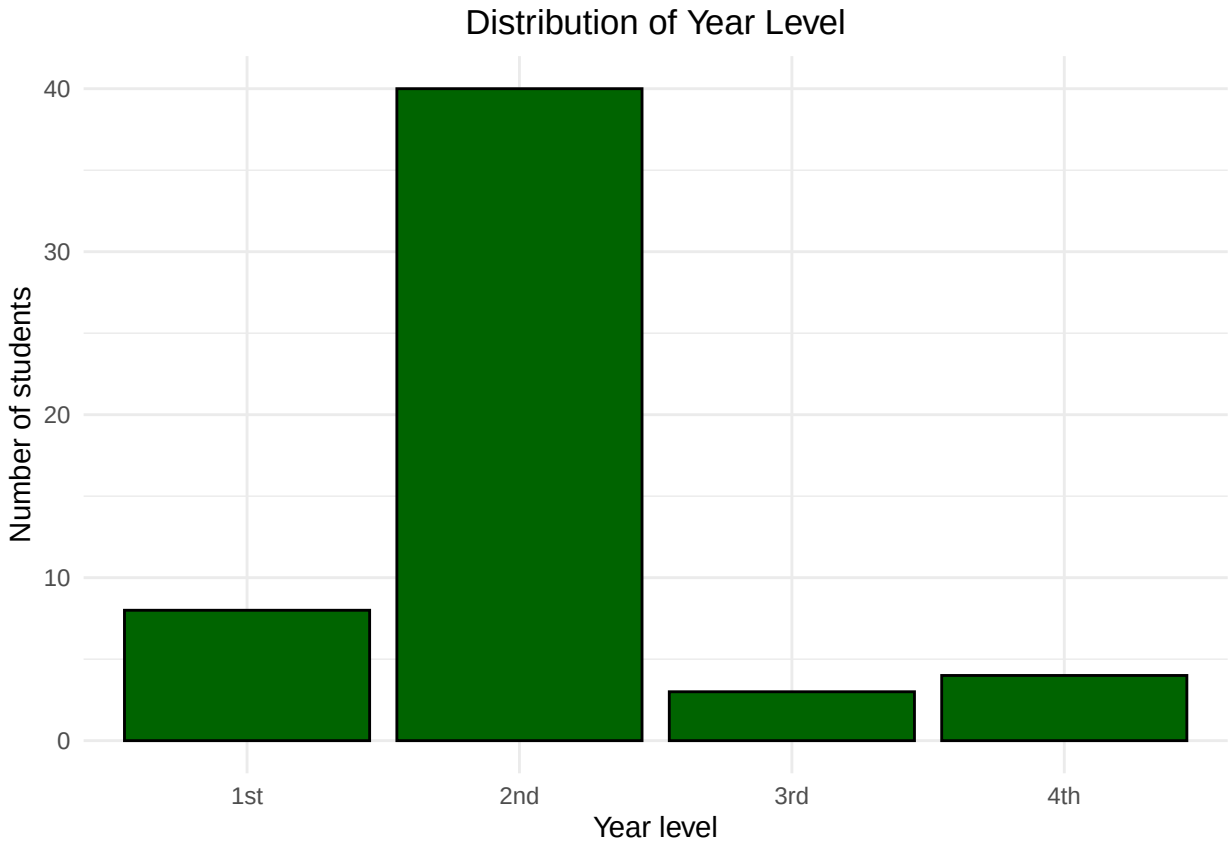
```
# Ensure final object is data.frame
df <- as.data.frame(df)

#Descriptive statistics
statistic <- df |>
  summarise(
    n                 = n(),
    mean_age          = mean(age, na.rm = TRUE),
    median_age        = median(age, na.rm = TRUE),
    min_age           = min(age, na.rm = TRUE),
    max_age           = max(age, na.rm = TRUE),

    mean_subjects     = mean(number_of_subjects_you_are_currently_enrolled_in, na.rm = TRUE),
    median_subjects   = median(number_of_subjects_you_are_currently_enrolled_in, na.rm = TRUE),
    min_subjects      = min(number_of_subjects_you_are_currently_enrolled_in, na.rm = TRUE),
    max_subjects      = max(number_of_subjects_you_are_currently_enrolled_in, na.rm = TRUE),

    mean_review       = mean(how_many_times_per_week_do_you_review_your_lessons, na.rm = TRUE),
    median_review     = median(how_many_times_per_week_do_you_review_your_lessons, na.rm = TRUE),
    min_review        = min(how_many_times_per_week_do_you_review_your_lessons, na.rm = TRUE),
    max_review        = max(how_many_times_per_week_do_you_review_your_lessons, na.rm = TRUE),

    mean_late         = mean(how_many_times_per_month_do_you_submit_homework_late, na.rm = TRUE),
    median_late       = median(how_many_times_per_month_do_you_submit_homework_late, na.rm = TRUE),
    min_late          = min(how_many_times_per_month_do_you_submit_homework_late, na.rm = TRUE),
```

```
    max_late          = max(how_many_times_per_month_do_you_submit_homework_late, na.rm = TRUE),

    mean_clubs        = mean(how_many_clubs_or_organizations_are_you_involved_in, na.rm = TRUE),
    median_clubs      = median(how_many_clubs_or_organizations_are_you_involved_in, na.rm = TRUE),
    min_clubs         = min(how_many_clubs_or_organizations_are_you_involved_in, na.rm = TRUE),
    max_clubs         = max(how_many_clubs_or_organizations_are_you_involved_in, na.rm = TRUE),

    mean_gadgets      = mean(gadgets_hours_week, na.rm = TRUE),
    median_gadgets    = median(gadgets_hours_week, na.rm = TRUE),
    min_gadgets       = min(gadgets_hours_week, na.rm = TRUE),
    max_gadgets       = max(gadgets_hours_week, na.rm = TRUE)
  )
```

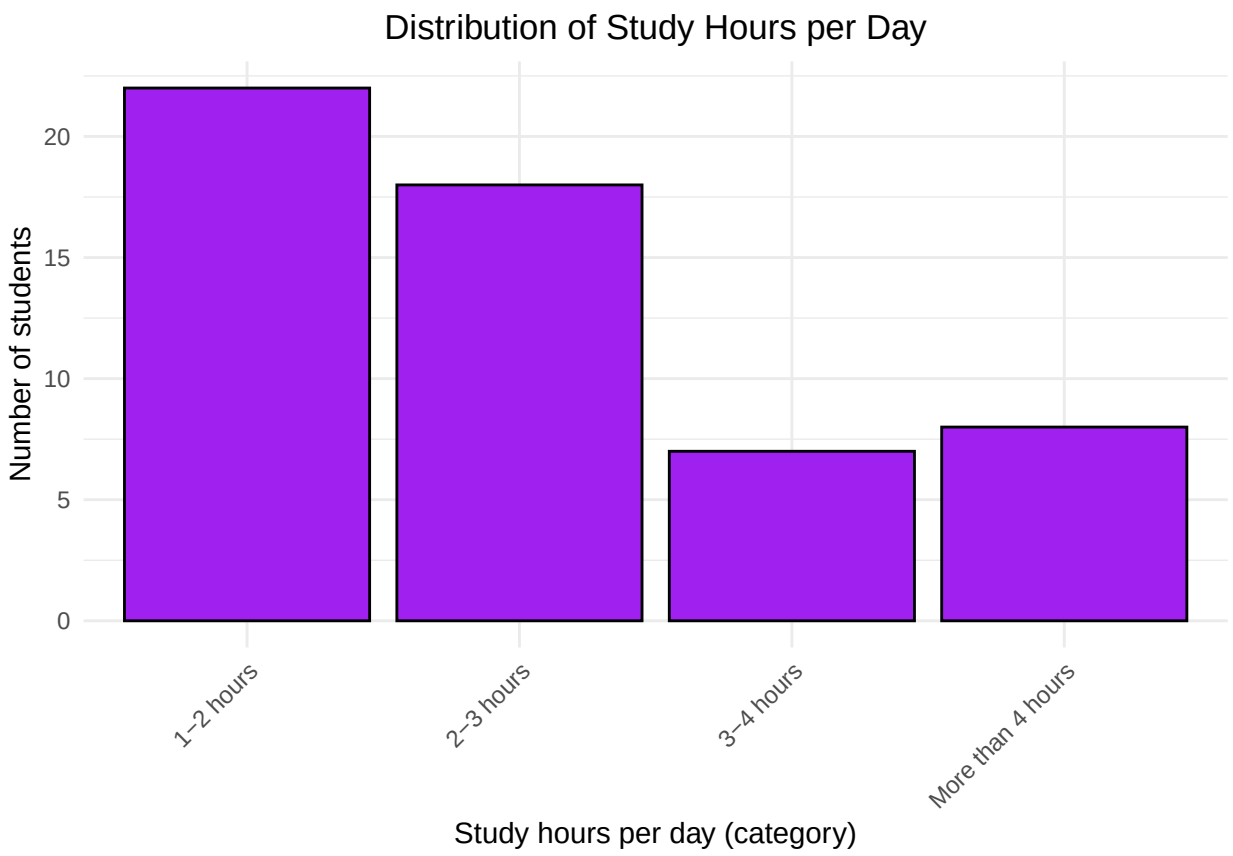
```
#Plots

#Age
ggplot(df, aes(x = age)) +
  geom_histogram(binwidth = 1, fill = "steelblue", color = "black") +
  labs(
    title = "Distribution of Age",
    x = "Age (years)",
    y = "Number of students"
  )
```



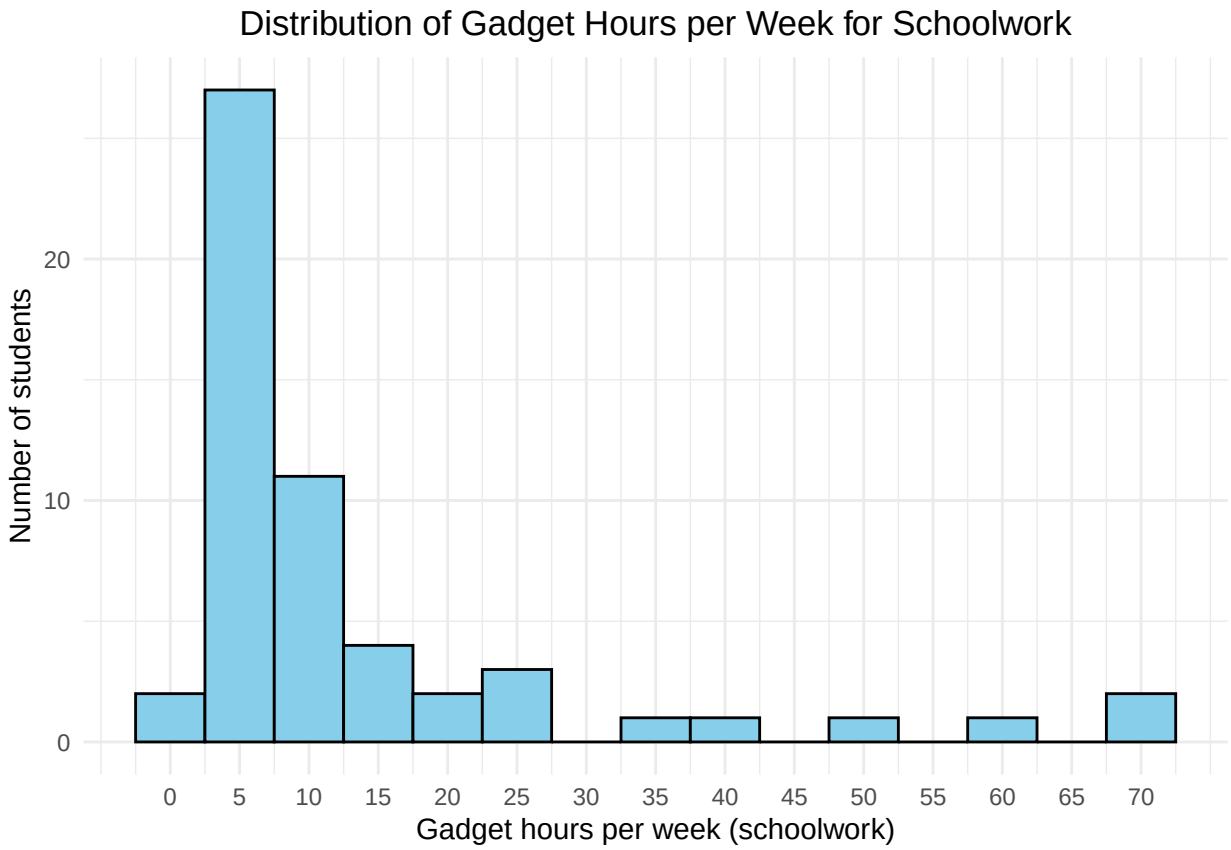
```r
#Year level
ggplot(df, aes(x = year_level)) +
  geom_bar(fill = "darkgreen", color = "black") +
  labs(
    title = "Distribution of Year Level",
    x = "Year level",
    y = "Number of students"
  )
```



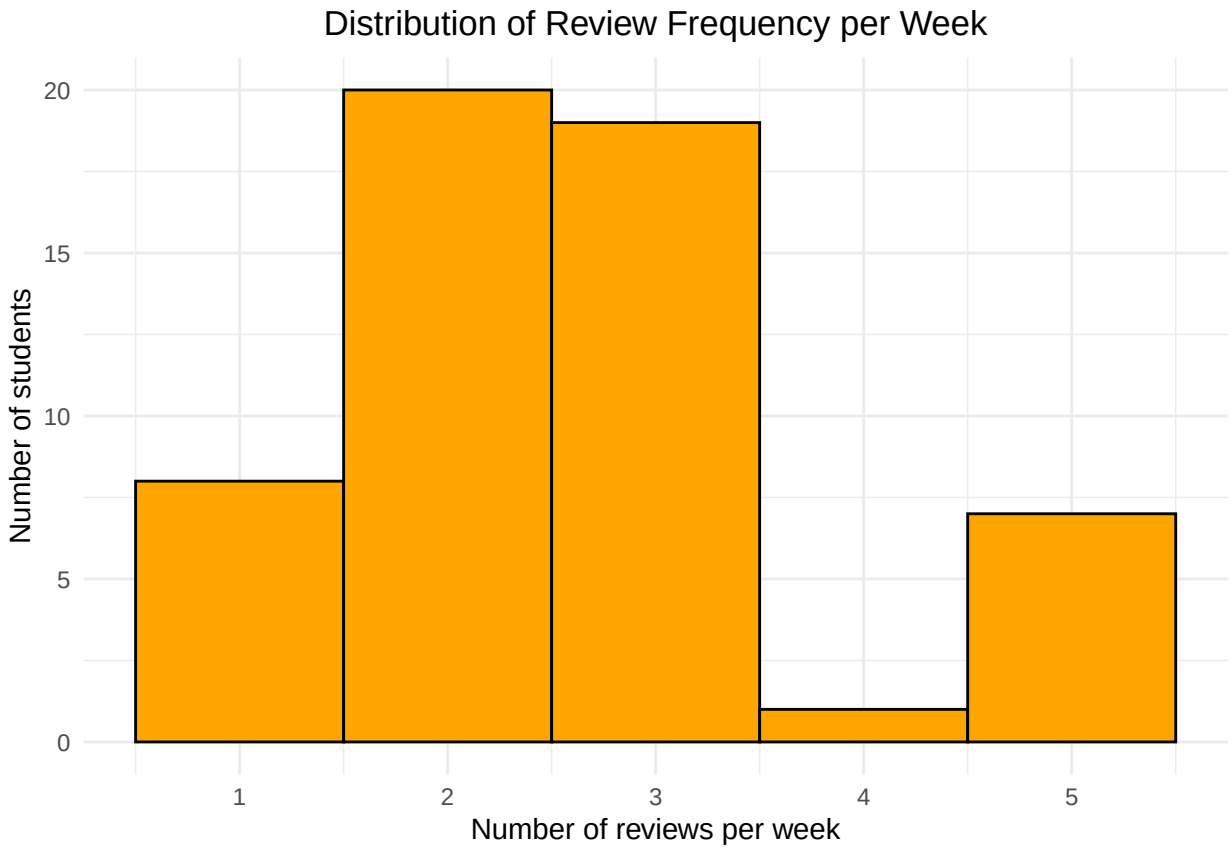

```r
#Study hours per day (categorical)
ggplot(df, aes(x = average_number_of_hours_spent_studying_per_day)) +
  geom_bar(fill = "purple", color = "black") +
  labs(
    title = "Distribution of Study Hours per Day",
    x = "Study hours per day (category)",
    y = "Number of students"
  ) +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```



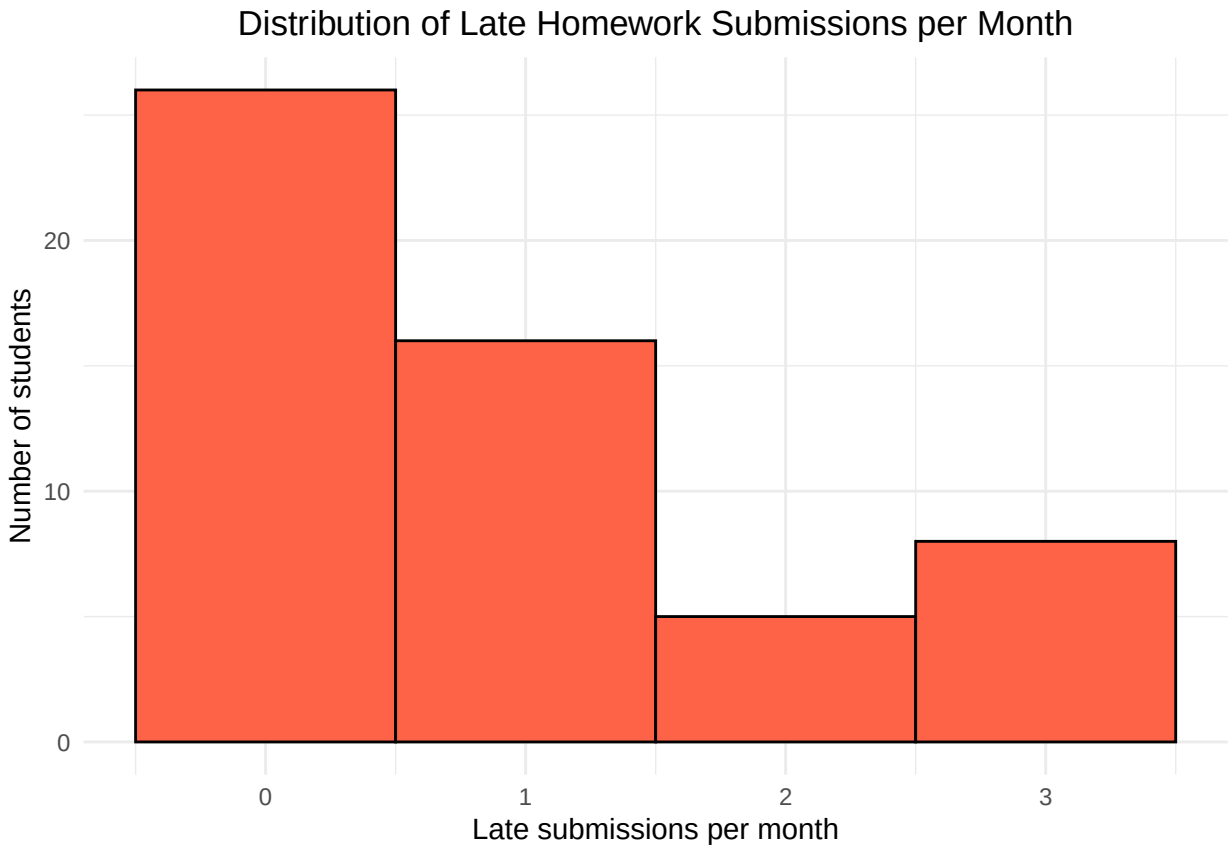

```
#Gadget hours per week
ggplot(df, aes(x = gadgets_hours_week)) +
  geom_histogram(binwidth = 5, fill = "skyblue", color = "black") +
  labs(
    title = "Distribution of Gadget Hours per Week for Schoolwork",
    x = "Gadget hours per week (schoolwork)",
    y = "Number of students"
  ) +
  scale_x_continuous(
    breaks = seq(
      0,
      max(df$gadgets_hours_week, na.rm = TRUE),
      by = 5
    )
  )
```



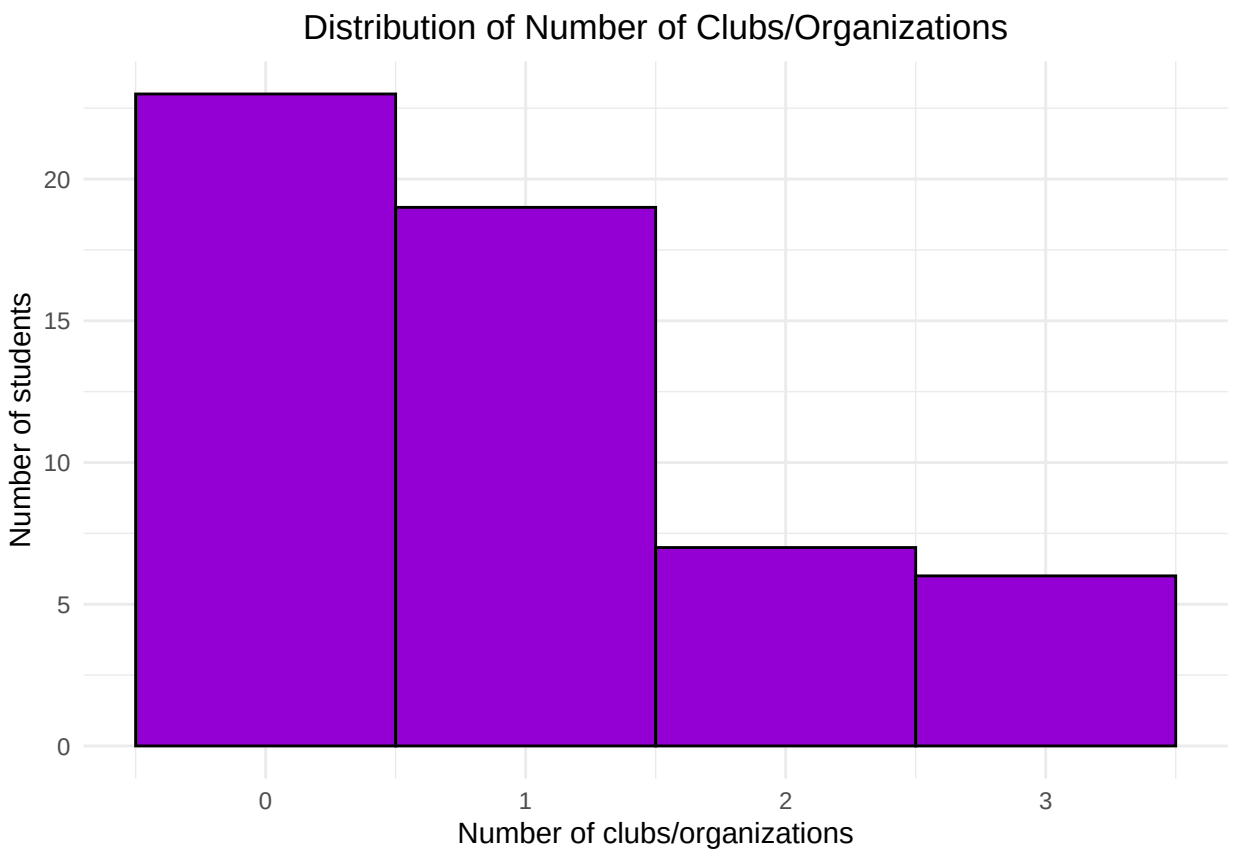

```r
#Review frequency per week
ggplot(df, aes(x = how_many_times_per_week_do_you_review_your_lessons)) +
  geom_histogram(binwidth = 1, fill = "orange", color = "black") +
  labs(
    title = "Distribution of Review Frequency per Week",
    x = "Number of reviews per week",
    y = "Number of students"
  ) +
  scale_x_continuous(
    breaks = seq(
      0,
      max(df$how_many_times_per_week_do_you_review_your_lessons, na.rm = TRUE),
      by = 1
    )
  )
```



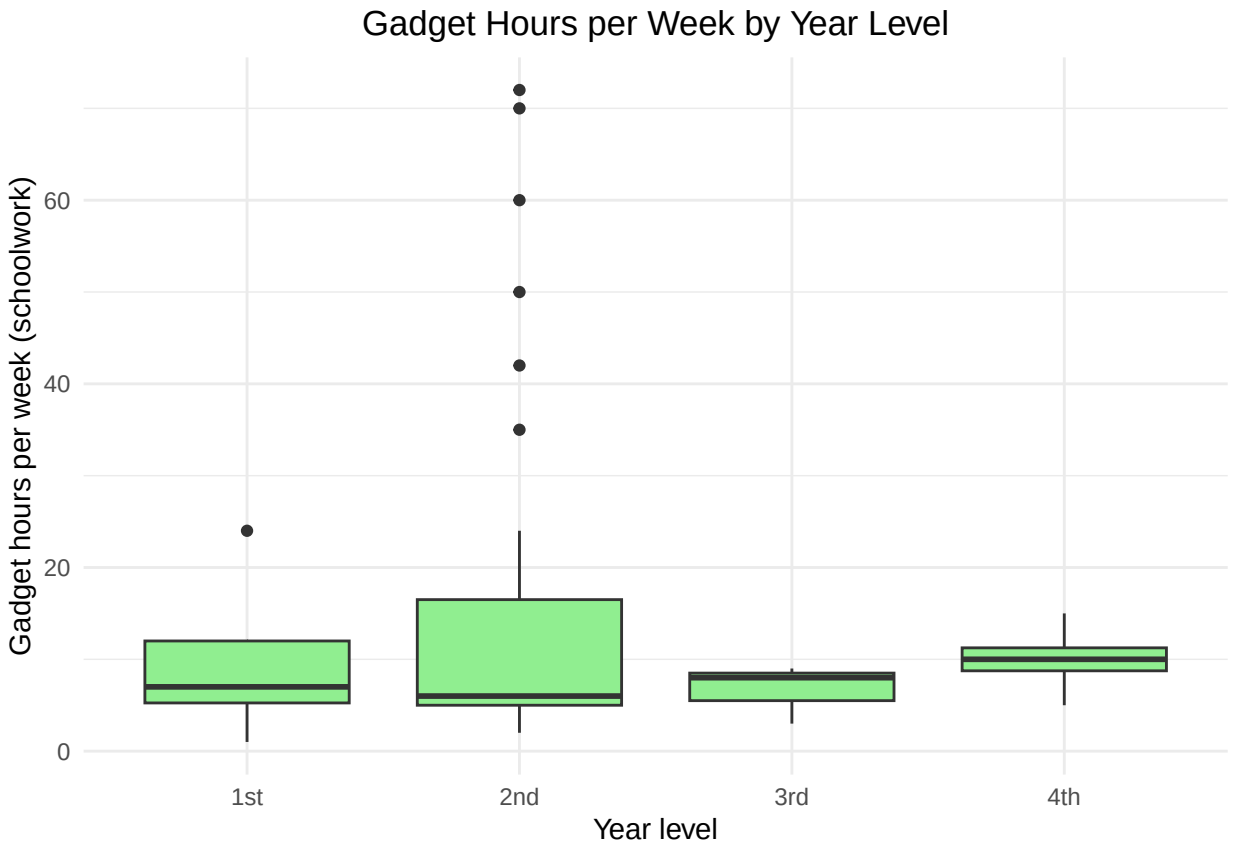

```r
#Late submissions per month
ggplot(df, aes(x = how_many_times_per_month_do_you_submit_homework_late)) +
  geom_histogram(binwidth = 1, fill = "tomato", color = "black") +
  labs(
    title = "Distribution of Late Homework Submissions per Month",
    x = "Late submissions per month",
    y = "Number of students"
  ) +
  scale_x_continuous(
    breaks = seq(
      0,
      max(df$how_many_times_per_month_do_you_submit_homework_late, na.rm = TRUE),
      by = 1
    )
  )
```



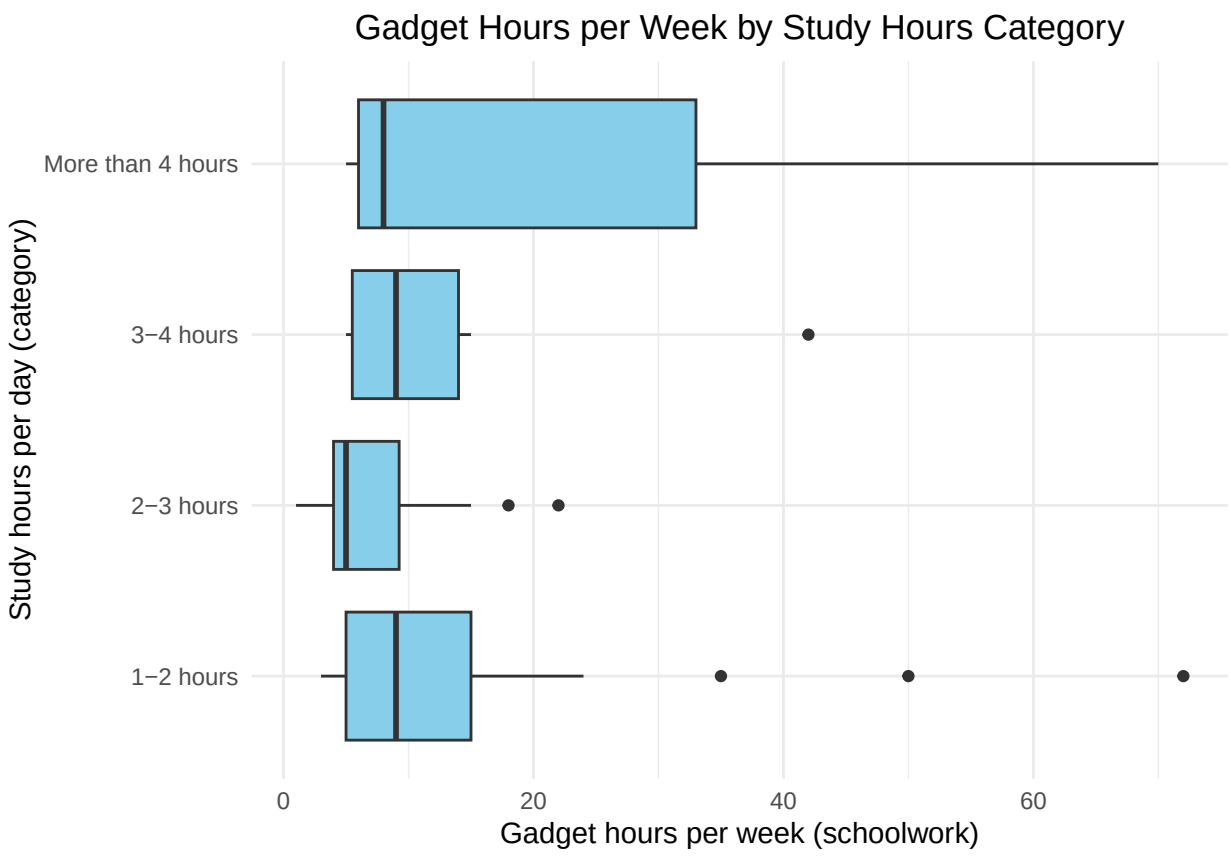

```
#Number of clubs
ggplot(df, aes(x = how_many_clubs_or_organizations_are_you_involved_in)) +
  geom_histogram(binwidth = 1, fill = "darkviolet", color = "black") +
  labs(
    title = "Distribution of Number of Clubs/Organizations",
    x = "Number of clubs/organizations",
    y = "Number of students"
  ) +
  scale_x_continuous(
    breaks = seq(
      0,
      max(df$how_many_clubs_or_organizations_are_you_involved_in, na.rm = TRUE),
      by = 1
    )
  )
```




```
#Gadget hours by year level
ggplot(df, aes(x = year_level, y = gadgets_hours_week)) +
  geom_boxplot(fill = "lightgreen") +
  labs(
    title = "Gadget Hours per Week by Year Level",
    x = "Year level",
    y = "Gadget hours per week (schoolwork)"
  )
```




```
#Gadget hours by study-hours category
ggplot(df, aes(
  x = average_number_of_hours_spent_studying_per_day,
  y = gadgets_hours_week
)) +
  geom_boxplot(fill = "skyblue") +
  labs(
    title = "Gadget Hours per Week by Study Hours Category",
    x = "Study hours per day (category)",
    y = "Gadget hours per week (schoolwork)"
  ) +
  coord_flip()
```


Gadget Hours per Week by Study Hours Category
More than 4 hours
3−4 hours
2−3 hours
1−2 hours
Study hours per day (category)
0
20
40
60
Gadget hours per week (schoolwork)