

FA3

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# Required libraries
library(moments)
library(knitr)
library(kableExtra)

# Data
Score <- c(
  88,45,53,86,33,86,85,30,89,53,41,96,56,38,62,
  71,51,86,68,29,28,47,33,37,25,36,33,94,73,46,
  42,34,79,72,88,99,82,62,57,42,28,55,67,62,60,
  96,61,57,75,93,34,75,53,32,28,73,51,69,91,35
)

# Descriptive statistics
n <- length(Score)
mode_val <- as.numeric(names(sort(table(Score), decreasing = TRUE)[1]))
median_val <- median(Score)
mean_val <- mean(Score)
std_dev <- sd(Score)
variance_val <- var(Score)
skewness_val <- skewness(Score)
stderr_skew <- sqrt(6/n)
kurtosis_val <- kurtosis(Score) - 3
stderr_kurt <- sqrt(24/n)
minimum <- min(Score)
maximum <- max(Score)

# Percentiles
q25 <- quantile(Score, 0.25)
q50 <- quantile(Score, 0.50)
q75 <- quantile(Score, 0.75)
p90 <- quantile(Score, 0.90)
p95 <- quantile(Score, 0.95)

# Table
results <- data.frame(
  Score = c(
    n,
    mode_val,
    median_val,
    round(mean_val, 3),
    round(std_dev, 3),
  )
)
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    round(variance_val, 3),
    round(skewness_val, 3),
    round(stderr_skew, 3),
    round(kurtosis_val, 3),
    round(stderr_kurt, 3),
    minimum,
    maximum,
    round(q25, 3),
    round(q50, 3),
    round(q75, 3),
    round(p90, 3),
    round(p95, 3)
  )
)

rownames(results) <- c(
  "Valid",
  "Mode",
  "Median",
  "Mean",
  "Std. Deviation",
  "Variance",
  "Skewness",
  "Std. Error of Skewness",
  "Kurtosis",
  "Std. Error of Kurtosis",
  "Minimum",
  "Maximum",
  "25th percentile",
  "50th percentile",
  "75th percentile",
  "90th percentile",
  "95th percentile"
)

# Rendering
if (knitr::is_latex_output()) {
  # PDF
  kable(results, format = "latex", booktabs = TRUE,
    caption = "Descriptive Statistics", align = c("l","c")) %>%
    kable_styling(latex_options = c("hold_position"),
      font_size = 11, position = "center") %>%
    row_spec(0, bold = TRUE, background = "#E8E8E8") %>%
    footnote(general = "More than one mode exists, only the first is reported",
      general_title = "",
      threeparttable = TRUE)
} else if (knitr::is_html_output()) {
  # HTML
  kable(results, format = "html", align = c("l","c"),
    caption = "Descriptive Statistics") %>%
    kable_styling(bootstrap_options = c("striped", "bordered"),
      full_width = FALSE, position = "center",

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        font_size = 12) %>%
    row_spec(0, bold = TRUE, background = "#E8E8E8") %>%
    footnote(general = "More than one mode exists, only the first is reported",
             general_title = "",
             threeparttable = TRUE)
} else {
  # GitHub
  kable(results, format = "pipe", align = c("l","c"),
        caption = "Descriptive Statistics")
}

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Table 1: Descriptive Statistics

	Score
Valid	60.000
Mode	28.000
Median	57.000
Mean	59.167
Std. Deviation	22.211
Variance	493.328
Skewness	0.163
Std. Error of Skewness	0.316
Kurtosis	-1.241
Std. Error of Kurtosis	0.632
Minimum	25.000
Maximum	99.000
25th percentile	37.750
50th percentile	57.000
75th percentile	76.000
90th percentile	89.200
95th percentile	94.100

More than one mode exists, only
the first is reported