Project name	Github Project
R Software Version	R version 4.2.2 (2022-10-31)
Version	V1
Change description	Initial redaction

	First Name	*Last Name*	Date
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Contents

1 Definitions

Definitions :

- **The standard deviation:**

The standard deviation quantifies the variation within a set of measurements. Must not be confused with the standard error. The standard deviation is the most used.

$$s = \sqrt{\frac{\sum_{i=1}^{n}(x - \bar{x})^2}{n-1}}$$

- **The standard error:**

The standard error quantifies the variation (standard deviation) of an estimated parameter (or statistic) from a sampling distribution. This is the distribution of the means.
Can be estimated with a single set of measurments.

$$Standard\ Error = SE = \frac{s}{\sqrt{n}}$$

- **The coefficient of variation:**

The coefficient of variation, also known as relative standard deviation, is a standardized measure of dispersion of a probability distribution.

The coefficient of variation in absolute value :

$$CV = \frac{\sigma}{\overline{x}}$$

- **The coefficient of variation in percentage :**

$$CV_{\%} = \frac{\sigma}{\overline{x}} * 100$$

- **R programming language**: R is a programming language for statistical computing and graphics supported by the R Core Team and the R Foundation for Statistical Computing.

2 Introduction

2.1 Purpose

The purpose of this document is to:

3 Session Info

```
sessionInfo()
```

```
## R version 4.2.2 (2022-10-31)
## Platform: aarch64-apple-darwin20 (64-bit)
## Running under: macOS Ventura 13.4
##
## Matrix products: default
## BLAS:   /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRblas.0.dylib
## LAPACK: /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRlapack.dylib
##
## locale:
## [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
##  [1] broom_1.0.1     readxl_1.4.1    knitr_1.40      forcats_0.5.2
##  [5] stringr_1.4.1   dplyr_1.0.10    purrr_0.3.5     readr_2.1.3
##  [9] tidyr_1.2.1     tibble_3.1.8    ggplot2_3.4.0   tidyverse_1.3.2
##
## loaded via a namespace (and not attached):
##  [1] tidyselect_1.2.0    xfun_0.34           haven_2.5.1
##  [4] gargle_1.2.1        colorspace_2.0-3    vctrs_0.5.0
##  [7] generics_0.1.3      htmltools_0.5.3     yaml_2.3.6
## [10] utf8_1.2.2          rlang_1.0.6         pillar_1.8.1
## [13] withr_2.5.0         glue_1.6.2          DBI_1.1.3
## [16] dbplyr_2.2.1        modelr_0.1.10       lifecycle_1.0.3
## [19] munsell_0.5.0       gtable_0.3.1        cellranger_1.1.0
## [22] rvest_1.0.3         evaluate_0.18       tzdb_0.3.0
## [25] fastmap_1.1.0       fansi_1.0.3         scales_1.2.1
## [28] backports_1.4.1     googlesheets4_1.0.1 jsonlite_1.8.3
## [31] fs_1.5.2            hms_1.1.2           digest_0.6.30
## [34] stringi_1.7.8       grid_4.2.2          cli_3.4.1
## [37] tools_4.2.2         magrittr_2.0.3      crayon_1.5.2
## [40] pkgconfig_2.0.3     ellipsis_0.3.2      xml2_1.3.3
## [43] reprex_2.0.2        googledrive_2.0.0   lubridate_1.9.0
## [46] timechange_0.1.1    assertthat_0.2.1    rmarkdown_2.18
## [49] httr_1.4.4          rstudioapi_0.14     R6_2.5.1
## [52] compiler_4.2.2
```