R Notebook 5: User-defined function example

This notebook provides an example function that takes three arguments: weight, height, and system. It checks the system argument to decide which formula to use for BMI calculation: the metric formula or the US formula. The calculated BMI and the system used are returned as a list. I'm using a specific format for my comments, following the framework of the `Roxygen` package. This is not required, but the style provides a good standard.

```
#' Calculate Body Mass Index (BMI)
#'
#' This function calculates the Body Mass Index (BMI) based on the user's weight
#' and height. It supports both the metric system (kilograms and meters) and the
#' US customary system (pounds and inches).
#'
#' @param weight Numeric: The weight of the individual in kilograms if using the metric
#' system, or in pounds if using the US system.
#' @param height Numeric: The height of the individual in meters if using the metric
#' system, or in inches if using the US system.
#' @param system Character: Specifies the measurement system used for the inputs.
#' Can be either "metric" or "US".
#'
#' @return A list containing the calculated BMI and the measurement system used.
#' @examples
#' calculate_bmi(70, 1.75, "metric")
#' calculate_bmi(155, 69, "US")
#'
calculate_bmi <- function(weight, height, system) {
  if (system == "metric") {
    bmi <- weight / (height^2)
  } else if (system == "US") {
    bmi <- (weight / (height^2)) * 703
  } else {
    stop("Invalid system. Use 'metric' or 'US'.")
  }

  return(list(BMI = bmi, System = system))
}

# Example usage
# Metric system
print(calculate_bmi(70, 1.75, "metric"))
```

```
## $BMI
## [1] 22.85714
##
## $System
## [1] "metric"
```

```r
# US system
print(calculate_bmi(155, 69, "US"))
```

```
## $BMI
## [1] 22.887
##
## $System
## [1] "US"
```