Writing functions in R

In the R language functions provide the base mechanisms for defining new functions.

Syntax:

\[
\text{function} \ ( \text{arglist} \ ) \\
\text{expr} \\
\text{return} \ (\text{value})
\]

Arguments:

- \text{arglist} - Empty or one or more name or name=expression terms.
- \text{value} - An expression.

Description:

The names in an argument list can be back-quoted non-standard names.

If \text{value} is missing, NULL is returned. If it is a single expression, the value of the evaluated expression is returned. (The expression is evaluated as soon as \text{return} is called, in the evaluation frame of the function and before any \text{on.exit} expression is evaluated.)

If the end of a function is reached without calling \text{return}, the value of the last evaluated expression is returned.

Example:

Program #1: Finding square of a number

\[
\text{square} \leftarrow \text{function}(\text{number}) \\
\{
\text{answer} \leftarrow \text{number}^2 \\
\text{return} (\text{answer})
\}
\]

\text{square} is the name of the function.
\text{function} is the R function that creates functions.
\text{number} is the parameter (name of the value) passed to the square function.
\{ delimits the beginning of the function
\} delimits the end of the function
\text{return} is the R function that specifies what the function returns, in this example, the value of \text{answer}.

Output:

\[
> \text{square}(6) \\
[1] 36
\]