
Course: Basics of R programming language for statistical analysis

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CHAPTER 2: CONTROL STRUCTURES AND FUNCTIONS | Statistical measures

Meeting 6: FUNCTIONS| Challenge: Mode values

Exercises

PRODUCE Tasks: [TIP: Exercises 3, 4 and 5 have same learning objective, but different application. Choose the one you find more interesting.]

1. rBasics_Meeting6.r>line148>EXERCISE_POINT_2: Find the R defined function that computes the mode of a variable.

   [Estimated time: 10 min]
2. rBasics_Meeting6.r>line149>EXERCISE_POINT_3: Write a function that computes and interprets the mode of all the variables in a data frame.

   [Estimated time: 20 min]

3. rBasics_Meeting6.r>line150-151>EXERCISE_POINT_4: Write a function that computes and interprets the skewness of a variable. (Interpretation: Skew=0 => the distribution is symmetric; Skew<0 => the distribution has negative skewness; Skew>0=> the distribution has positive skewness)

   [Estimated time: 20 min]

4. rBasics_Meeting6.r>line152-153>EXERCISE_POINT_5: Write a function that computes and interprets the kurtosis of a variable. (Interpretation: Kurt=3 => normal distribution; Kurt<3=> platikurtic distribution; Kurt>3=> leptokurtic distribution)

   [Estimated time: 20 min]

5. rBasics_Meeting6.r>line158-159>EXERCISE_POINT_8: Write a function that computes and interprets the coefficient of variation of a variable. (Interpretation: CV>30% => the mean is not representative, the population is heterogenous or CV<30% => the mean is representative, the population is homogenous).

   [Estimated time: 20 min]

REPRODUCE Tasks: [TIP: You must integrate the code we wrote in meetings 4 and 5 [Challenges] in a function. All exercises have same learning objective, but different application. Choose the one you find more interesting.]

1. rBasics_Meeting6.r>line154>EXERCISE_POINT_6.1: Write a function that computes the mean of a variable.

   [Estimated time: 15 min]

2. rBasics_Meeting6.r>line155>EXERCISE_POINT_6.2: Write a function that computes the means of multiple variables in a data set and stores them in a data frame.

   [Estimated time: 15 min]

3. rBasics_Meeting6.r>line156>EXERCISE_POINT_7.1: Write a function that computes the median of a variable.

[Estimated time: 15 min]

4. rBasics_Meeting6.r>line157>EXERCISE_POINT_7.2: Write a function that computes the medians of multiple variables in a data set and stores them in a data frame.

[Estimated time: 15 min]

DEBUG tasks:

1. rBasics_Meeting6.r>line90>EXERCISE_POINT_1: Why is it that the following code works the same way? (no error)

```
lungimeVector=function(x)
  if (length(x)<10){
    print("short vector")
  } else {
      print("long vector")
  }
```

[Estimated time: 15 min]

COMMENT Tasks:

1. rBasics_Meeting6.r>line160>EXERCISE_POINT_9: Comment EXERCISE 3 and 4 in lines 126-146.

[Estimated time: 20 min]