In contrast to many other programming languages, R has no native switch-case statement. Often, however, it is useful to have an efficient way of testing multiple, similar conditions while avoiding nested if–else constructs which make the code less clear and readable. The **switchcase** package offers a switch-case construct for R. It is encapsulated in the package's main function, switchCase(). switchCase() allows to define multiple 'case' branches (*alternatives*) that consist of a condition and a code block that is executed if the condition is fulfilled. Also, it can be specified if the switch-case construct shall be left after one alternative code block has been executed, or if the other (following) conditions shall be tested, as well. This 'break' behavior can be defined on the level of the whole switch-case construct or on the level of each individual alternative, with the alternative's 'break' behavior setting overruling the construct-level option. Also, an alternative branch of a switch-case construct can return a value (which is then the return value of the switchCase() function). To understand how the switchCase() function works, it makes sense to have a look at an example. In this simple example we are calculating the body-mass index of a person and then interpreting its value: bmi <- function(mass, size) {
ind <- mass / size^2
switchCase(
 ind,
 alt(
  ..expr <= 15,
  { cat("Your body mass index is ", ind, " which is very severely underweight.\n") },
  "very severely underweight"
 ),
 alt(
  ..expr > 15 & ..expr <= 16,
  { cat("Your body mass index is ", ind, " which is severely underweight.\n") },
 "severely underweight"
 ),
 alt(
  ..expr > 16 & ..expr <= 18.5,
  { cat("Your body mass index is ", ind, " which is underweight.\n") },
  "underweight"
 ),
 alt(
  ..expr > 18.5 & ..expr <= 25,
  { cat("Your body mass index is ", ind, " which is normal.\n") },
  "normal"
 ),
 alt(
  ..expr > 25 & ..expr <= 30,
  { cat("Your body mass index is ", ind, " which is overweight.\n") },
  "overweight"
 ),
 alt(
  ..expr > 30 & ..expr <= 35,
  { cat("Your body mass index is ", ind, " which is moderately obese.\n") },
  "moderately obese"
 ),
 alt(
  ..expr > 35 & ..expr <= 40,
  { cat("Your body mass index is ", ind, " which is severely obese.\n") },
  "severly obese"
 ),
 alt(
  ..expr > 40,
  { cat("Your body mass index is ", ind, " which is Very severely obese.\n") },
  "very severly obese"
)

```
 )
}
bmi.person1 <- bmi(82.5, 1.79)
cat("Person1 turned out to be ", bmi.person1)
```

Let us go through the call of switchCase() step by step:

- The first argument is the value to be tested, in our case here the calculated body-mass index (variable ind).
- This non-optional argument is followed by a set of alternative branches. The alternatives are built using the alt() function.
    - The alt() function takes a condition as its *first argument*. If you want to refer to the value that is tested in this switch-case construct then use the construct's standard variable ..expr (yes, two dots!). In our example, ..expr would take the value of ind. Working with ..expr allwows you can build complex conditions for your alternative 'case' branches.
    - The *second* argument of alt() is the code that will be executed if the condition evaluates to TRUE. If your code has multiple R statements then put the statements in curly brackets. It is recommended to do that in any case. If an alternative has NULL as its code (i.e. the second argument of the alt() function is NULL) then this alternative is the *default* alternative that will be exceuted if no other condition evaluates to TRUE. If you define multiple defaults (which should be avoided, of course) then only the first one would be executed.
    - The optional *third* argument is the return value that the switchCase() function will provide if this particular 'case' alternative is executed. If multiple alternatives are executed (recall, that this is possible because the testing of alternative conditions does not necessarily need to stop after one condition has been found to be TRUE) then only the return value of the *last* alternative branch is returned.
    - The optional *fourth* argument of the *alt()* function (not used in this example) is a logical value indicating the 'break' behavior of this alternative branch. If set to *TRUE* then the execution of the switch-case construct will stop, regardless of the break option that has been defined on the construct level. The alternative's definition of the 'break' behavior always overrules the more general definition of 'break' behavior on the switchCase() function level.
- The last and optional argument (break) of the switchCase() function (not used in this example) is a logical value indicating if the switch-case construct will be left after a condition was fulfilled and the R code associated with that 'case' branch has been executed. The default value for break is TRUE. Note, that this behavior specification can be overruled by the 'break' behavior specified in individual 'case' alternatives.

All code in the alternative 'case' branches is evaluated in the environment from which switchCase() was called so it is easy to access variables of your script or function in which switchCase() is used.