

Solutions to Exercises from Chapter 8

- 1.1-.
- `function(name) {name}`: the class of the returned R object is `function`, the display produced is: `function(name) {name}`.
 - `(function(name) {name})("Ben")`: the class of the returned R object is `character`, the display produced is: `"Ben"`
 - `(function(name) {cat(name, "\n")})("Ben")`: the returned R object has no class, the display produced is: `Ben`
 - `(function(name) {invisible(name)})("Ben")`: the class of the returned R object is `character`, no display.
- 1.2-.
- No difference.
 - No difference.
 - No difference.
- 1.3-.
- No difference when executing `name()` and `name("Peter")` if the function `name()` is defined by `name <- function(name="Peter") name` and also by `name <- function(name="Peter") name2 <- name`. For these two functions, the nature of `res`, obtained by `res <- name("Ben")` is of type `character`.
- 1.4-.
- `"Peter"`.
- 1.5-.
- `"Ben L"`
 - `"Ben L"`
 - `"R D"`
- 1.6-.
- ```
name <- function(name="Peter") {cat(name, "\n")}
```
- 1.7-.
- For the execution of `names("peteR", "Ben", "R")`
- `[1] "peteR" "Ben" "R"`
  - `[[1]]`  
`[1] "peteR"`
  - `[[2]]`  
`[1] "Ben"`

```

[[3]]
[1] "R"
• [1] "peteR"
 [1] "Ben"
 [1] "R"
• [1] "peteR"
 [1] "Ben"
 [1] "R"

```

For the execution of `names(c("peteR", "L"), c("Ben", "L"), c("R", "D"))`

```

• [1] "peteR" "L" "Ben" "L" "R" "D"
• [[1]]
 [1] "peteR" "L"

[[2]]
[1] "Ben" "L"

[[3]]
[1] "R" "D"
• [1] "peteR"
 [1] "L"
 [1] "Ben"
 [1] "L"
 [1] "R"
 [1] "D"
• [1] "peteR" "L"
 [1] "Ben" "L"
 [1] "R" "D"

```

**1.8-** For the function `names <- function(names=c("Ben", "R"), ...) c(names, ...)`

```

• [1] "PeteR"
• [1] "PeteR"
• [1] "PeteR"

```

For the function `names<-function(...,names=c("Ben","R")) c(names,...)`

- [1] "Ben" "R" "PeteR"
- name  
    "Ben"      "R" "PeteR"
- [1] "PeteR"

- 1.9.**
- `Male <- function(firstname,name) {  
    obj <- list(firstname=firstname,name=name)  
    class(obj) <- "Male"  
    obj  
    }`
  - `hello.Male <- function(obj)  
    cat("Hello Mister",obj$firstname,obj$name,"!\n")`
  - Hello Mister Ben L !
  - Error : impossible to find function "hello"
  - `hello <- function(obj) UseMethod("hello")`

- 1.10.**
- `Female <- function(firstname,name) {  
    obj <- list(firstname=firstname,name=name)  
    class(obj) <- "Female"  
    obj  
    }`
  - `hello.Female <- function(obj)  
    cat("Hello Mrs.",obj$firstname,obj$name,"!\n")`
  - Hello Mister Elsa R !
  - Hello Mrs. Elsa R !
  - Hello Mrs. Elsa R !

- 1.11.**
- Hello Mister Ben L !  
    Hello Mrs. Elsa R !
  - Error in UseMethod("hello") :  
    no method for 'hello' applicable for  
    an object of class "character"

- Hello Ben !  
Hello L !  
Hello Elsa !  
Hello R !