Week 2 Quiz

9/10 questions correct

Quiz passed!

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1.

Suppose I define the following function in R

```
cube <- function(x, n) {
        x^3
}
```

What is the result of running

```
cube(3)
```

in R after defining this function?

- An error is returned because 'n' is not specified in the call to 'cube'

Sorry, that's incorrect.

- The number 27 is returned
- The users is prompted to specify the value of 'n'.
- A warning is given with no value returned.

2.

The following code will produce a warning in R.

```
x <- 1:10
if(x > 5) {
        x <- 0
}
```

Why?

- You cannot set 'x' to be 0 because 'x' is a vector and 0 is a scalar.
- The syntax of this R expression is incorrect.
- The expression uses curly braces.
- 'x' is a vector of length 10 and 'if' can only test a single logical statement.

Well done!

- There are no elements in 'x' that are greater than 5

✔ 3.

Consider the following function

```
f <- function(x) {
        g <- function(y) {
                y + z
        }
        z <- 4
        x + g(x)
}
```

If I then run in R

```
z <- 10
f(3)
```

What value is returned?

- 4
- 10

Well done!

- 7
- 16

4.

Consider the following expression:

```
x <- 5
y <- if(x < 3) {
        NA
} else {
        10
}
```

What is the value of 'y' after evaluating this expression?

- 10

Well done!

- NA
- 5
- 3

5.

Consider the following R function

```
h <- function(x, y = NULL, d = 3L) {
        z <- cbind(x, d)
        if(!is.null(y))
                z <- z + y
        else
                z <- z + f
        g <- x + y / z
        if(d == 3L)
                return(g)
        g <- g + 10
        g
}
```

Which symbol in the above function is a free variable?

- f

Well done!

- z
- d

- L
- g

✔ 6.

What is an environment in R?

- a list whose elements are all functions
- a special type of function
- a collection of symbol/value pairs

Well done!

- an R package that only contains data

✔ 7.

The R language uses what type of scoping rule for resolving free variables?

- global scoping
- dynamic scoping
- compilation scoping
- lexical scoping

Well done!

✔ 8.

How are free variables in R functions resolved?

- The values of free variables are searched for in the working directory
- The values of free variables are searched for in the environment in which the function was defined

Well done!

- The values of free variables are searched for in the global environment
- The values of free variables are searched for in the environment in which the function was called

9.

What is one of the consequences of the scoping rules used in R?

- Functions cannot be nested
- R objects cannot be larger than 100 MB
- All objects can be stored on the disk
- All objects must be stored in memory

Well done!

10.

In R, what is the parent frame?

- It is the environment in which a function was called

Well done!

- It is the environment in which a function was defined
- It is always the global environment
- It is the package search list