

functions-prep.Rmd

Jai Jot Kaur

11/8/2022

Writing Your Own Functions in R

```
sum(c(1,2,3))
```

```
## [1] 6
```

```
function_name <- function(inputs) {  
  output_value <- do-something(inputs)  
  return(output_value)  
}
```

```
{  
  a = 2  
  b = 3  
  a + b  
}
```

```
## [1] 5
```

```
calc_shrub_vol <- function(length, width, height) {  
  area <- length * width  
  volume <- area * height  
  return(volume)  
}
```

```
calc_shrub_vol(0.8, 1.6, 2.0)
```

```
## [1] 2.56
```

```
shrub_vol <- calc_shrub_vol(0.8, 1.6, 2.0)
```

How Functions Execute

```
calc_shrub_vol <- function(length, width, height) {  
  area <- length * width  
  volume <- area * height  
  return(volume)  
}
```

```
shrub_vol <- calc_shrub_vol(0.8, 1.6, 2.0)
```

Setting Default Values for Arguments

```
calc_shrub_vol <- function(length, width, height = 1) {  
  area <- length * width  
  volume <- area * height  
  return(volume)  
}
```

```
calc_shrub_vol(0.8, 1.6, 2.0)
```

```
## [1] 2.56
```

```
calc_shrub_vol(0.8, 1.6)
```

```
## [1] 1.28
```

When To Use Named And Unnamed Arguments

```
calc_shrub_vol <- function(length, width, height = 1) {  
  area <- length * width  
  volume <- area * height  
  return(volume)  
}
```

```
calc_shrub_vol(0.8, 1.6, 2.0)
```

```
## [1] 2.56
```

```
calc_shrub_vol(0.8, 1.6)
```

```
## [1] 1.28
```

```
calc_shrub_vol(length = 0.8, width = 1.6, height = 2.0)
```

```
## [1] 2.56
```

```
calc_shrub_vol(height = 2.0, length = 0.8, width = 1.6)
```

```
## [1] 2.56
```

```
calc_shrub_vol(0.8, 1.6, height = 2.0)
```

```
## [1] 2.56
```

Combining Functions

```
calc_shrub_vol <- function(length, width, height = 1) {  
  area <- length * width  
  volume <- area * height  
  return(volume)  
}
```

```
est_shrub_mass <- function(volume) {  
  mass <- 2.65 * volume^0.9  
  return(mass)  
}
```

```
shrub_volume <- calc_shrub_vol(0.8, 1.6, 2.0)  
shrub_mass <- est_shrub_mass(shrub_volume)
```

```
library(magrittr)  
shrub_mass <- calc_shrub_vol(0.8, 1.6, 2.0) %>%  
  est_shrub_mass()
```

```
shrub_mass <- est_shrub_mass(calc_shrub_vol(0.8, 1.6, 2.0))
```

Calling Functions From Inside Other Functions.

```
calc_shrub_vol <- function(length, width, height = 1) {  
  area <- length * width  
  volume <- area * height  
  return(volume)  
}
```

```
est_shrub_mass <- function(volume) {  
  mass <- 2.65 * volume^0.9  
  return(mass)  
}
```

```
est_shrub_mass_dim <- function(length, width, height = 1) {  
  volume <- calc_shrub_vol(length, width, height)  
  mass <- est_shrub_mass(volume)  
  return(mass)  
}
```

```
est_shrub_mass_dim(0.8, 1.6, height = 2.0)
```

```
## [1] 6.175354
```

RStudio Tips and Tricks for Working With Functions

```
calc_shrub_vol <- function(length, width, height = 1) {  
  area <- length * width  
  volume <- area * height  
  return(volume)  
}
```

```
est_shrub_mass <- function(volume) {  
  mass <- 2.65 * volume^0.9  
  return(mass)  
}
```

```
est_shrub_mass_dim <- function(length, width, height = 1) {  
  volume <- calc_shrub_vol(length, width, height)  
  mass <- est_shrub_mass(volume)  
  return(mass)  
}
```

```
est_shrub_mass_dim(0.8, 1.6, height = 2.0)
```

```
## [1] 6.175354
```