

# R Return Value from Function



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In this article, you'll learn to return a value from a function in R. You'll also learn to use functions without the return function.

Many a times, we will require our functions to do some processing and return back the result. This is accomplished with the `return()` function in R.

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## Syntax of return()

```
return(expression)
```

The value returned from a function can be any valid object.

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## Example: return()

Let us look at an example which will return whether a given number is positive, negative or zero.

```
check <- function(x) {  
  if (x > 0) {  
    result <- "Positive"  
  }  
  else if (x < 0) {  
    result <- "Negative"  
  }  
  else {  
    result <- "Zero"  
  }  
  return(result)  
}
```

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Here, are some sample runs.

```
> check(1)
[1] "Positive"
> check(-10)
[1] "Negative"
> check(0)
[1] "Zero"
```

## Functions without return()

If there are no explicit returns from a function, the value of the last evaluated expression is returned automatically in R.

For example, the following is equivalent to the above function.

```
check <- function(x) {
  if (x > 0) {
    result <- "Positive"
  }
  else if (x < 0) {
    result <- "Negative"
  }
  else {
    result <- "Zero"
  }
  result
}
```

We generally use explicit `return()` functions to return a value immediately from a function.

If it is not the last statement of the function, it will prematurely end the function bringing the control to the place from which it was called.

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```
check <- function(x) {  
  if (x>0) {  
    return("Positive")  
  }  
  else if (x<0) {  
    return("Negative")  
  }  
  else {  
    return("Zero")  
  }  
}
```

In the above example, if `x > 0`, the function immediately returns `"Positive"` without evaluating rest of the body.

## Multiple Returns

The `return()` function can return only a single object. If we want to return multiple values in R, we can use a list (or other objects) and return it.

Following is an example.

```
multi_return <- function() {  
  my_list <- list("color" = "red", "size" = 20, "shape" = "round")  
  return(my_list)  
}
```

Here, we create a list `my_list` with multiple elements and return this single list.

```
> a <- multi_return()  
> a$color  
[1] "red"  
> a$size  
[1] 20  
> a$shape  
[1] "round"
```