

# with() vs. within()

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Acknowledgements: The text and code are from <https://www.journaldev.com/47815/with-and-within-function-in-r>

The with() provides the output separately for every value associated with the columns of the data frame.

```
setwd('c:/r-basics/ManipulatingData')
```

```
rm(list = ls())

Num <- c(100,100,100,100,100)
Cost <- c(1200,1300,1400,1500,1600)

data_A <- data.frame(Num, Cost, stringsAsFactors = FALSE)

with(data_A, Num*Cost)
```

```
## [1] 120000 130000 140000 150000 160000
```

```
with(data_A, Cost/Num)
```

```
## [1] 12 13 14 15 16
```

The with() function does not alter the original data frame at any cost.

```
data_A
```

```
##   Num Cost
## 1 100 1200
## 2 100 1300
## 3 100 1400
## 4 100 1500
## 5 100 1600
```

R within() function calculates the outcome of the expression within itself, but allowing us to create a copy of the data frame with a new column that would eventually store the result of the R expression.

```
rm(list = ls())

Num <- c(100,100,100,100,100)
Cost <- c(1200,1300,1400,1500,1600)
data_A <- data.frame(Num, Cost, stringsAsFactors = FALSE)
within(data_A, {Product <- Num*Cost; Q <- Cost/Num; data_A})
```

```
##   Num Cost  Q Product
## 1 100 1200 12 120000
## 2 100 1300 13 130000
## 3 100 1400 14 140000
## 4 100 1500 15 150000
## 5 100 1600 16 160000
```

In order to save the addition of two columns create an extra column with \$ symbol

```
rm(list = ls())

Num <- c(100,100,100,100,100)
Cost <- c(1200,1300,1400,1500,1600)
data_A <- data.frame(Num,Cost,stringsAsFactors = FALSE)
data_A$Product <- Num*Cost
data_A$Q <- Cost/Num
data_A
```

```
##   Num Cost Product  Q
## 1 100 1200 120000 12
## 2 100 1300 130000 13
## 3 100 1400 140000 14
## 4 100 1500 150000 15
## 5 100 1600 160000 16
```