

Pertemuan 3 - Conditional Expressions

ryankny

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ifelse

```
a = c(26,2,18,9,3)
# a -> 1/a

# if ( a != 0 ){
#   print(1/a)
# } else{
#   print(NA)
# }

# ifelse(param1, param2, param3)
# param1 : kondisi
# param2 : yang dijalankan jika kondisi TRUE
# param3 : yang dijalankan jika kondisi FALSE
ifelse(a != 0, 1/a, NA)
```

```
## [1] 0.03846154 0.50000000 0.05555556 0.11111111 0.33333333
```

any

```
logical_vector = c(TRUE, TRUE, FALSE)
any(logical_vector)
```

```
## [1] TRUE
```

all

```
logical_vector = c(TRUE, TRUE, TRUE, NA)
all(logical_vector, na.rm = TRUE)
```

```
## [1] TRUE
```

```
library(dslabs)
data(murders)
```

```
# cek dataset murders yang totalnya < 10
murders$total < 10 # logical_vector
```

```
## [1] FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE TRUE
## [13] FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE
## [25] FALSE FALSE FALSE FALSE FALSE TRUE FALSE FALSE FALSE FALSE TRUE FALSE
## [37] FALSE FALSE FALSE FALSE FALSE TRUE FALSE FALSE FALSE TRUE FALSE FALSE
## [49] FALSE FALSE TRUE
```

```
any(murders$total < 10)
```

```
## [1] TRUE
```

```
all(murders$total < 10)
```

```
## [1] FALSE
```

```
is.na(murders$total) # logical_vector
```

```
## [1] FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE
## [13] FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE
## [25] FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE
## [37] FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE
## [49] FALSE FALSE FALSE
```

```
any(is.na(murders$total))
```

```
## [1] FALSE
```

fungsi

```
rata2 = function(vector = c(2:26)){
  return(sum(vector)/length(vector))
}
```

```
rata2()
```

```
## [1] 14
```

```
rata2(9:18)
```

```
## [1] 13.5
```

for loop

```
compute_s_n = function(n){
  x = 1:n
  return (sum(x))
}

compute_s_n(5)
```

```
## [1] 15
```

```
s = 1:26
s_n = vector(length = length(s))

for(i in s){
  s_n[i] = compute_s_n(i)
}

s_n
```

```
## [1] 1 3 6 10 15 21 28 36 45 55 66 78 91 105 120 136 153 171 190
## [20] 210 231 253 276 300 325 351
```

sapply

```
sapply(s, compute_s_n)
```

```
## [1] 1 3 6 10 15 21 28 36 45 55 66 78 91 105 120 136 153 171 190
## [20] 210 231 253 276 300 325 351
```

```
contoh_list = list(
  a = c(1,7,14,21,28),
  b = c(39,46,53,60,67)
)
```

```
# cara manual
sum(contoh_list$a)
```

```
## [1] 71
```

```
sum(contoh_list$b)
```

```
## [1] 265
```

```
# cara singkat
sapply(contoh_list, sum)
```

```
## a b
## 71 265
```

mapply

```
luas_persegi_panjang = function(p,l){  
  return(p*l)  
}  
  
volume_balok = function(p,l,t){  
  return(p*l*t)  
}  
  
panjang = c(5,12,19,26,33)  
lebar = c(6,13,20,27,34)  
tinggi = c(4,11,18,25,32)  
  
mapply(luas_persegi_panjang, panjang, lebar)
```

```
## [1] 30 156 380 702 1122
```

```
mapply(volume_balok, panjang, lebar, tinggi)
```

```
## [1] 120 1716 6840 17550 35904
```