

Function

- 단위 헷갈려 1400억원짜리 우주선이 폭발 [링크](#)
- 1 Yard = 0.9144 Meter
- x Meter = ? Yard

Function

1. **The name.** A user can run the function by typing the name followed by parentheses, e.g., roll2().

3. **The arguments.** A user can supply values for these variables, which appear in the body of the function.

4. **The default values.** Optional values that R can use for the arguments if a user does not supply a value.

2. **The body.** R will run this code whenever a user calls the function.

```
roll2 <- function(bones = 1:6) {  
  dice <- sample(bones, size = 2,  
    replace = TRUE)  
  sum(dice)  
}
```

5. **The last line of code.** The function will return the result of the last line.

```
1 FunctionName <- function(args, ...){  
2   # code with args  
3 }  
4 Output <- FunctionName(Input)
```

Function

- 1 Yard = 0.9144 Meter
- x Meter = ? Yard

base Function

```
1 seq(from = 1, to = 10)
2 # 1:10
```

- 기본으로 제공하는 base 함수 `base::`
- `?`, `help`, `seq`

base Function

`ls()`에 대해서 설명하세요

base Function

```
1 # sample
2 die <- c(1:6)
3 sample(die, 2)
4
5 ## sample(x = die, size = 2)
```

base Function

```
1 round(1:10)
2 sum(1:10)
3 sqrt(1:10)
4 mean(1:10)
5 max(1:10)
6 min(1:10)
7 abs(-2)
8 length(1:10)
9 typeof(1:10)
```

Package

Package = Collection of Function and Dataset

```
1 base::seq  
2 base:: + <tab>  
3 # base 패키지의 seq 함수
```


Package

- `install.packages('<PKGNAME>')`: install from CRAN
- `pak::pak('<REPO/PKGNAME>')`: install from Bioconductor / CRAN / GitHub
- `library(<PKGNAME>)`: load package

```
1 install.packages("cli")
2 library(cli)
3
4 print("Hello World")
5 # cli::cli_text("Hello World")
6 cli_text("Hello World")
```

Plot

```
1 x <- c(-1, -0.8, -0.6, -0.4, -0.2, 0, 0.2, 0.4, 0.6, 0.8, 1)
2 y <- x^3
3
4 plot(x, y)
```

Plot

```
1 ggplot(data.frame(x = x, y = y)) +  
2   geom_point(aes(x = x, y = y)) +  
3   theme_minimal() +  
4   labs(title = "y = x^3", x = "X-axis", y = "Y-axis") +  
5   theme(plot.title = element_text(hjust = 0.5))
```

Types

```
1  typeof(1)
2  typeof(1.1)
3  typeof('one')
4  typeof(1>2)
```

Next week

- List
- Data frame
- Control Flow
- Loop
- Apply
- Save / Load

