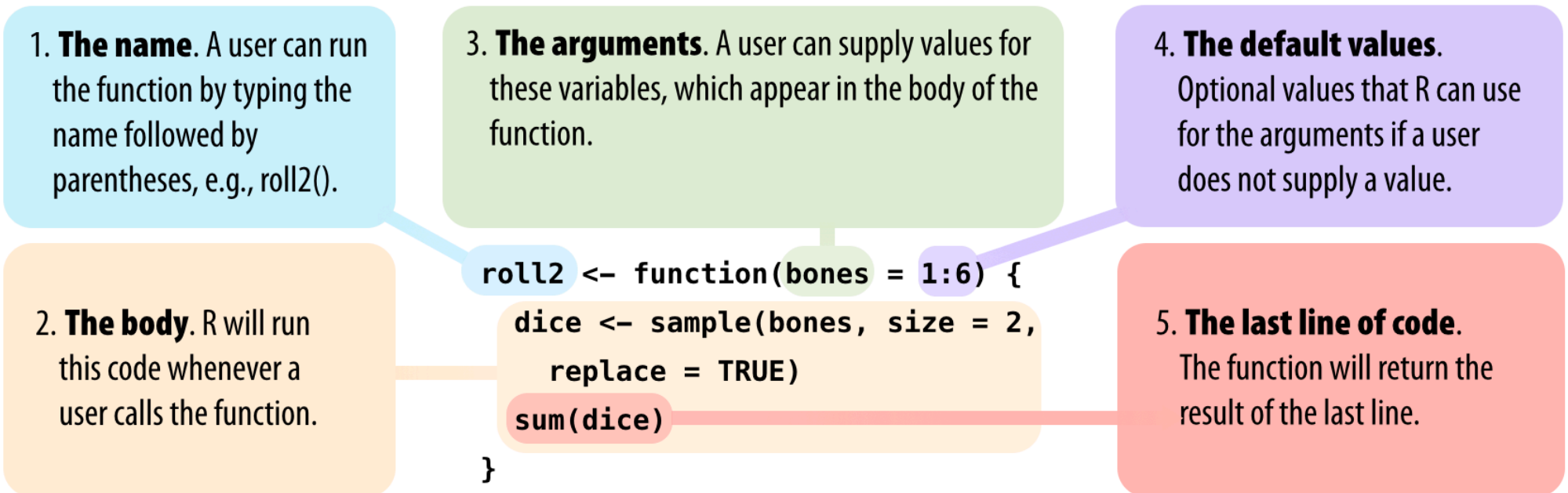
Function

- 단위 헷갈려 1400억원짜리 우주선이 폭발 링크
- 1 Yard = 0.9144 Meter
- x Meter = ? Yard

Function




```r
FunctionName <- function(args, ...){
    # code with args
}
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

```r
# sample
die <- c(1:6)
sample(die, 2)

## sample(x = die, size = 2)
```

base Function

```r
round(1:10)
sum(1:10)
sqrt(1:10)
mean(1:10)
max(1:10)
min(1:10)
abs(-2)
length(1:10)
typeof(1:10)
```

Package

Package = Collection of Function and Dataset

```
base::seq
base:: + <tab>
# 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

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

plot(x, y)
```

Plot

```r
ggplot(data.frame(x = x, y = y)) +
  geom_point(aes(x = x, y = y)) +
  theme_minimal() +
  labs(title = "y = x^3", x = "X-axis", y = "Y-axis") +
  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