



# Data types EN r

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# Lists

- Lists can be used to combine objects (of possibly different kinds/sizes) into a larger composite object.
- The components of the list are named according to the arguments used.
- Components can be extracted with the double bracket operator `[[ ]]`
- Alternatively, named components can be accessed with the `"$"` separator.

Create a list containing strings, numbers, vectors and a logical values.

```
list_data <- list("Red", "Green", c(21,32,11), TRUE, 51.23, 119.1)
print(list_data)
[[1]]
[1] "Red"
[[2]]
[1] "Green"
[[3]]
[1] 21 32 11
[[4]]
[1] TRUE ....
```

# Giving names to Lists elements

- Lists can be used to combine objects (of possibly different kinds/sizes) into a larger composite object.
- The components of the list are named according to the arguments used.

Create a list containing strings, numbers, vectors and a logical values.

```
list_data <- list("Red", "Green", c(21,32,11), 51.23, 119.1)
names (list_data)<-c("Colors", "Age", "Time")
list_data
$Colors
[1] "Red"    "Green"

$Age
[1] 21 32 11

$Time
[1] 51.23
```

# Accessing Lists elements

- Components can be extracted with the double bracket operator `[[ ]]`
- Alternatively, named components can be accessed with the `"$"` separator.

```
# Access the first element of the list.  
  
print(list_data[1])  
$Colors  
[1] "Red"    "Green"  
  
# Access the list element using the name of the  
# element.  
  
print(list_data$Colors)  
[1] "Red"    "Green"
```

# Convert Lists to vectors (unlist)

- A list can be converted to a vector so that the elements of the vector can be used for further manipulation.
- All the arithmetic operations on vectors can be applied after the list is converted into vectors.

```
# Create lists.  
list1 <- list(1:5)  
print(list1)  
[[1]]  
[1] 1 2 3 4 5  
  
list2 <- list(10:14)  
print(list2)  
[[1]]  
[1] 10 11 12 13 14
```

```
# Convert the lists to vectors.  
v1 <- unlist(list1)  
[1] 1 2 3 4 5  
  
v2 <- unlist(list2)  
[1] 10 11 12 13 14  
  
# Now add the vectors  
result <- v1+v2  
print(result)  
[1] 11 13 15 17 19
```

# Predefined Lists

```
#Author  
letters  
LETTERS  
month.abb  
month.name
```

## Merging Lists

```
num_list <- list(1,2,3,4,5)  
day_list <- list("Mon","Tue","Wed", "Thurs", "Fri")  
  
merge_list <- c(num_list, day_list)  
merge_list
```

Gracias...

