

# Introduction to R Software

## Swayam Prabha

### Lecture 26

# Display Strings Using Paste Function and Splitting

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Slides can be downloaded from  
<http://home.iitk.ac.in/~shalab/sp>



# Formatting and Display of Strings

## paste function

- The `paste()` function concatenates several strings together.
- It creates a new string by joining the given strings end to end.
- The result of `paste()` can be assigned to a variable (in contrast to the function `cat()`).

# Formatting and Display of Strings

## Usage

```
paste(..., sep = " ", collapse = NULL).
```

`collapse` is an optional character string to separate the results.

- The parameter `sep` is a string that serves as a separation between the strings that are given as input.
- `paste` inserts a single space between pairs of strings.
- A desired line break can be achieved with `"\n"` (newline).

## Formatting and Display of Strings

```
> paste("Everybody", "loves", "R Programming.")
```

```
[1] "Everybody loves R Programming."
```

```
> paste("Everybody", "loves", "R Programming.",  
sep="*")
```

```
[1] "Everybody*loves*R Programming."
```

```
> paste("Everybody", "loves", "R Programming.",  
sep="===")
```

```
[1] "Everybody===loves===R Programming."
```

# Formatting and Display of Strings

R Console

```
> paste("Everybody", "loves", "R Programming.")
```

```
[1] "Everybody loves R Programming."
```

```
>
```

```
> paste("Everybody", "loves", "R Programming.", sep="*")
```

```
[1] "Everybody*loves*R Programming."
```

```
>
```

```
> paste("Everybody", "loves", "R Programming.", sep==="")
```

```
[1] "Everybody===loves===R Programming."
```

## Formatting and Display of Strings

If one or more arguments are vectors of strings, `paste` will generate all combinations of the arguments:

```
> names <- c("Prof. Gupta", "Mr. Amit", "Dr. Roy")
```

```
> names
```

```
[1] "Prof. Gupta" "Mr. Amit" "Dr. Roy"
```

```
> paste(names, "is", "a good", "person.")
```

```
[1] "Prof. Gupta is a good person." "Mr. Amit  
is a good person." "Dr. Roy is a good person."
```

# Formatting and Display of Strings

R Console

```
> names <- c("Prof. Gupta", "Mr. Amit", "Dr. Roy")
> names
[1] "Prof. Gupta" "Mr. Amit"    "Dr. Roy"
> paste(names, "is", "a good", "person.")
[1] "Prof. Gupta is a good person." "Mr. Amit is a good person."  "Dr. Roy is a good person."
> |
```

## Formatting and Display of Strings

When we want to join even those combinations into one, big string.

The `collapse` parameter defines a separator and instructs

`paste` to concatenate the generated strings using that separator.

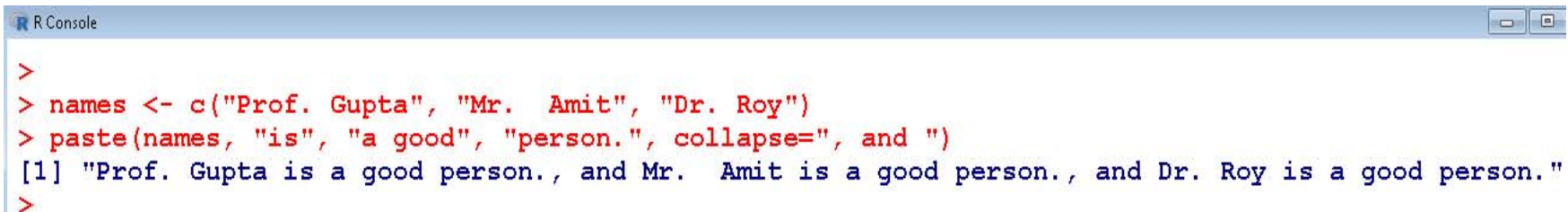


## Formatting and Display of Strings

```
> names <- c("Prof. Gupta", "Mr. Amit", "Dr. Roy")
```

```
> paste(names, "is", "a good", "person.",  
collapse=", and ")
```

```
[1] "Prof. Gupta is a good person., and Mr.  
Amit is a good person., and Dr. Roy is a good  
person."
```



```
R Console  
>  
> names <- c("Prof. Gupta", "Mr. Amit", "Dr. Roy")  
> paste(names, "is", "a good", "person.", collapse=", and ")  
[1] "Prof. Gupta is a good person., and Mr. Amit is a good person., and Dr. Roy is a good person."  
>
```

# Operations with Strings

## Example 1:

```
> x <- paste("Ex", 6:10, sep="_")
```

```
> x
```

```
[1] "Ex_6" "Ex_7" "Ex_8" "Ex_9" "Ex_10"
```

```
> x[1]
```

```
[1] "Ex_6"
```

```
> x[2]
```

```
[1] "Ex_7"
```

```
> x[3]
```

```
[1] "Ex_8"
```

```
> x[4]
```

```
[1] "Ex_9"
```

```
> x[5]
```

```
[1] "Ex_10"
```

# Operations with Strings

```
R Console  
  
> x <- paste("Ex", 6:10, sep="_")  
> x  
[1] "Ex_6" "Ex_7" "Ex_8" "Ex_9" "Ex_10"  
> x[1]  
[1] "Ex_6"  
> x[2]  
[1] "Ex_7"  
> x[3]  
[1] "Ex_8"  
> x[4]  
[1] "Ex_9"  
> x[5]  
[1] "Ex_10"  
> |
```

## Operations with Strings

### Example 2:

```
> x <- paste("Ex", 6:10, sep="***")
> x
[1] "Ex***6"    "Ex***7"    "Ex***8"    "Ex***9"
"Ex***10"

> x[1]
[1] "Ex***6"
> x[2]
[1] "Ex***7"
> x[3]
[1] "Ex***8"
> x[4]
[1] "Ex***9"
> x[5]
[1] "Ex***10"
```

# Operations with Strings

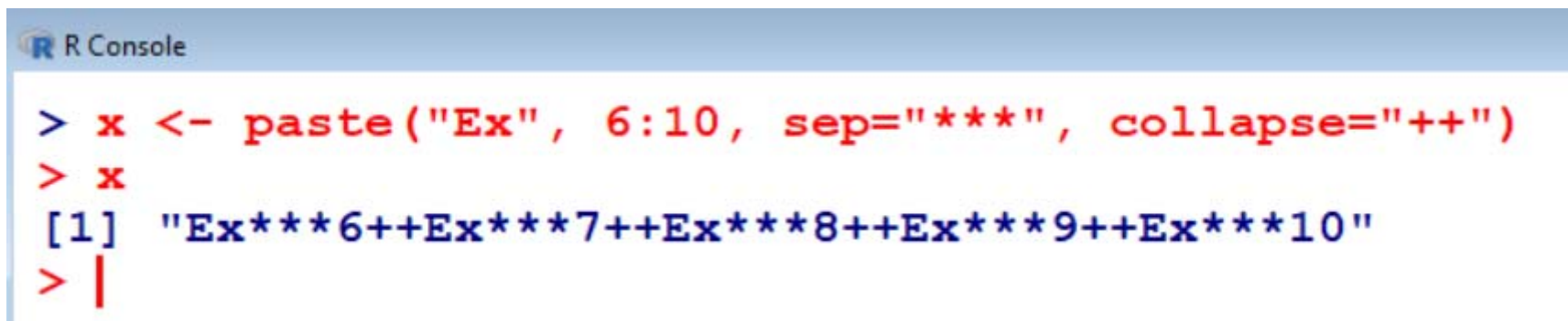
```
R Console  
  
> x <- paste("Ex", 6:10, sep="***")  
> x  
[1] "Ex***6" "Ex***7" "Ex***8" "Ex***9" "Ex***10"  
> x[1]  
[1] "Ex***6"  
> x[2]  
[1] "Ex***7"  
> x[3]  
[1] "Ex***8"  
> x[4]  
[1] "Ex***9"  
> x[5]  
[1] "Ex***10"  
> |
```

## Operations with Strings

**x** is a vector of strings.

If we use the parameter `collapse`, a single string, instead of a vector of strings, is created:

```
> x <- paste("Ex", 6:10, sep="***", collapse="++")  
> x  
[1] "Ex***6++Ex***7++Ex***8++Ex***9++Ex***10"
```



```
R Console  
> x <- paste("Ex", 6:10, sep="***", collapse="++")  
> x  
[1] "Ex***6++Ex***7++Ex***8++Ex***9++Ex***10"  
> |
```

## Operations with Strings

Note the difference between

```
x <- paste("Ex", 6:10, sep="_")
```

and

```
x <- paste("Ex", 6:10, sep="_", collapse="")
```

```
R Console
> x <- paste("Ex", 6:10, sep="_")
> x
[1] "Ex_6" "Ex_7" "Ex_8" "Ex_9" "Ex_10"
>
> x <- paste("Ex", 6:10, sep="_", collapse="")
> x
[1] "Ex_6Ex_7Ex_8Ex_9Ex_10"
> |
```

## Operations with Strings

**x** is a vector of strings.

If we use the parameter `collapse`, a single string, instead of a vector of strings, is created:

```
> x <- paste("Ex", 6:10, sep="_", collapse="")  
> x  
[1] "Ex_6Ex_7Ex_8Ex_9Ex_10"
```

```
R Console  
> x <- paste("Ex", 6:10, sep="_", collapse="")  
> x  
[1] "Ex_6Ex_7Ex_8Ex_9Ex_10"  
> |
```



# Operations with Strings

There are a variety of commands that can be used for strings.

## Examples:

Count of number of characters:

```
> x <- "R-Course"
```

```
> y <- "R - Course"
```

```
> nchar(x) #Count the Number of Characters in x  
[1] 8
```

```
> nchar(y) #Count the Number of Characters in y  
[1] 10
```

```
R R Console  
> x <- "R-Course"  
> nchar(x)  
[1] 8  
>  
> y <- "R - Course"  
> nchar(y)  
[1] 10  
> |
```

# Operations with Strings

## Examples:

```
> x <- "R course 01.06.2020"
```

```
> y <- "Number of participants: 50"
```

```
> nchar(x) #Count the Number of Characters in x  
[1] 19
```

```
> nchar(y) #Count the Number of Characters in y  
[1] 26
```

# Operations with Strings

R Console

```
> x <- "R course 01.06.2020"  
> y <- "Number of participants: 50"  
>  
> nchar(x)  
[1] 19  
>  
> nchar(y)  
[1] 26  
>
```