

How can I import Excel data into R?

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Importing Excel data into R is a relatively simple process that can be done using various methods. One approach is to use the "readxl" package, which allows for the direct reading of Excel files into R. Another option is to convert the Excel file into a CSV format and then use the "read.csv" function in R to import the data. Additionally, some R packages have built-in functions for importing Excel data, such as the "xlsx" package. Regardless of the method used, it is important to ensure that the data is formatted correctly and that any necessary packages are installed in R before attempting to import the Excel data.

R provides several packages like `readxl`, `xlsx`, and `openxlsx` to read or import Excel files into R DataFrame. These packages provide several methods with different arguments which help us read Excel files effectively.

We have also provided quick articles for [reading CSV files](#) and [writing CSV files](#) using R base functions as well as using `readr` package, which is 10 times faster than R base functions.

In this article, you will learn how to read data from an Excel file with the extension **xls** or **xlsx** into R DataFrame. This can be done by using `readxl::read_excel()` and `xlsx::read.xlsx()`

1. Quick Examples

Following are quick examples of how to read or import Excel files into R DataFrame.

```
# Load readxl package
library("readxl")

# Read xlsx files
df = read_excel("/Users/admin/new_file.xlsx")
df = read_xlsx("/Users/admin/new_file.xlsx")
df = read_xsl("/Users/admin/new_file.xsl")

# Read sheet names 'sheet_name' from excel file
df = read_excel("/Users/admin/new_file.xlsx", sheet='sheet_name')

# Read sheet 3 from excel file
df = read_excel("/Users/admin/new_file.xlsx", sheet=3)

#Load xlsx package
library("xlsx")

#Read first sheet from new_file.xlsx file
df = read.xlsx(file="/Users/admin/new_file.xlsx", sheetIndex=1)
```

```
# Load openxlsx
library(openxlsx)

# Read excel file
read.xlsx('/Users/admin/new_file.xlsx')
```

2. Import Excel files into R using readxl package

Use `read_excel()` function from `readxl` package to read or import an Excel file (**xlsx** or **xls**) as R `DataFrame`. To use `readxl` library, you need to first install it by using `install.packages('readxl')`. Once installation completes, load the `readxl` library to use this `read_excel()` method. To load a library in the R use `library("readxl")`.

`read_excel()` calls `excel_format()` to check if `path` is **xls** or **xlsx**. If you know the file extension, use `read_xls()` and `read_xlsx()` directly.

2.1 Install readxl Package

To use `readxl` package in R to work with Excel files, first, you need to install it using `install.packages()`. Run the below command in R or RStudio.

```
# Install readxl package
install.packages("readxl")
```

2.2 Syntax of read_excel() Function

Following is the syntax of `read_excel()` function.

```
# Syntax of read_excel()
read_excel(path, sheet = NULL, range = NULL, col_names = TRUE,
col_types = NULL, na = "", trim_ws = TRUE, skip = 0,
n_max = Inf, guess_max = min(1000, n_max), progress = readxl_progress(),
.name_repair = "unique"
)
```

2.3 Import Excel File using readxl Package

Let's use the above syntax of `read_excel()` to import an Excel file into an R `DataFrame`. If you

want to read the data from a specific sheet use the `sheet` argument.

```
# Load readxl package
library("readxl")

# Read xlsx files
df = read_excel("/Users/admin/new_file.xlsx")
(or)
df = read_xlsx("/Users/admin/new_file.xlsx")
```

If you have an xls file then use the below methods to read or import it as DataFrame.

```
# Read xsl files
df = read_excel("/Users/admin/new_file.xls")
(or)
df = read_xsl("/Users/admin/new_file.xls")
```

2.4 Read Data from Specific Excel Sheet

If you have multiple sheets in an Excel file (xlsx, xls) use the `sheet` argument to read or import the data from a specific sheet. Pass either sheet name or sheet index to this argument.

```
# Read sheet names 'sheet_name' from excel file
df = read_excel("/Users/admin/new_file.xlsx", sheet='sheet_name')
#or
# Read sheet 3 from excel file
df = read_excel("/Users/admin/new_file.xlsx", sheet=3)
```

3. Import Excel files using the xlsx package

Package `xlsx` is another package R to read or import Excel files into DataFrame. It is a Java-based solution, for reading, writing, and formatting Excel files in R.

Use `read.xlsx()` function from `xlsx` package to read or import an excel file (xlsx or xls) as R DataFrame. In order to use the `xlsx` library, you need to first install it by using `install.packages('xlsx')`. Once installation completes, load the `xlsx` library to use this `read.xlsx()` method. To load a library in R use `library("xlsx")`.

3.1 Install xlsx Package

Run the below command in R or RStudio to install `xlsx` package.

```
# Install readxl package
install.packages("xlsx")
```

3.2 Syntax

The `xlsx` package provides 2 function `read.xlsx()` and `read.xlsx2()`, below are their syntaxes. Use `read.xlsx2()` if you have big files as it performs better than `read.xlsx()`.

```
# Syntax of read.xlsx() & read.xlsx2()
read.xlsx(file, sheetIndex, header=TRUE)
read.xlsx2(file, sheetIndex, header=TRUE)
```

3.3 Using read.xlsx() Example

Let's use the above syntax of the `read.xlsx()` to read an Excel file into an R DataFrame. If you want to read the data from a specific sheet use the `sheetIndex` argument.

```
#Load xlsx package
library("xlsx")

#Read first sheet from new_file.xlsx file
df = read.xlsx(file='/Users/admin/new_file.xlsx', sheetIndex=1)
```

4. Import Excel files using openxlsx Package

The `openxlsx` is another package that can be used to perform operations with excel files. Use `read.xlsx()` function from this package to read the worksheet.

```
#Install openxlsx package
install.packages("openxlsx")
```

```
# Load openxlsx
library(openxlsx)
```

```
# Read excel file
read.xlsx('/Users/admin/new_file.xlsx')
```

Frequently Asked Questions on Import Excel in R with Examples

How can I import an Excel file into R?

You can use the `readxl` package or the `openxlsx` package in R to import Excel files. The `readxl::read_excel()` function is commonly used for this purpose.

What formats of Excel files are supported in R?

R supports both `.xls` and `.xlsx` formats. The `readxl` and `openxlsx` packages can handle both Excel formats.

How do I install the required packages for Excel file import in R?

You can install the necessary packages using the `install.packages()` function. For example, `install.packages("readxl")` or `install.packages("openxlsx")`.

How can I import specific sheets from an Excel file?

You can import specific sheets using the `sheet` parameter in functions like `readxl::read_excel()` or `openxlsx::read.xlsx()`.

What if my Excel file has missing values (NA) or blank cells?

R will typically represent missing values as `NA` (Not Available). You can handle them using functions like `complete.cases()` or use the `na.strings` parameter while importing to specify other representations of missing values.

What if my Excel file has multiple headers or starts from a specific row?

You can use the `skip` parameter to skip a specific number of rows at the beginning of the Excel file. The `col_names` parameter in functions like `readxl::read_excel()` allows you to specify whether to treat the first row as a column name.

5. Conclusion

In this article, you have learned how to read or import an Excel file into R DataFrame by using methods from the package `openxlsx`, `xlsx`, and `readxl` packages.

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References

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