

PRACTICAL NO : 14

AIM : Extracting date components using lubridate:: functions (R).

```

R - R 4.5.2 - ~/
> # R script: Extracting Date Components using lubridate
> # Load necessary libraries
> install.packages("lubridate")

WARNING: Rtools is required to build R packages but is not currently installed. Please
download and install the appropriate version of Rtools before proceeding:

https://cran.rstudio.com/bin/windows/Rtools/

Installing package into 'C:/Users/IT-04/AppData/Local/R/win-library/4.5'
(as 'lib' is unspecified)

trying URL 'https://cran.rstudio.com/bin/windows/contrib/4.5/lubridate_1.9.4.zip'
Content type 'application/zip' length 996067 bytes (972 KB)
downloaded 972 KB

package 'lubridate' successfully unpacked and MD5 sums checked

The downloaded binary packages are in
c:/Users/IT-04/AppData/Local/Temp/RtmpgdGw1/downloaded_packages
> # install.packages("dplyr")
> library(lubridate)

Attaching package: 'lubridate'

The following objects are masked from 'package:base':
    date, intersect, setdiff, union

> library(dplyr)
  
```

```

R - R 4.5.2 - ~/
Attaching package: 'dplyr'

The following objects are masked from 'package:stats':
    filter, lag

The following objects are masked from 'package:base':
    intersect, setdiff, setequal, union

>
> # =====
> # 1. SETUP: Create Sample Data
> # =====
> # We start with dates stored as character text (ISO format YYYY-MM-DD)
> dates_df <- data.frame(
+   Event_ID = 1:4,
+   Date_String = c("2023-03-05", "2023-05-08", "2024-01-09", "2025-01-15")
+ )
>
> # =====
> # 2. PARSE AND EXTRACT
> # =====
> # Step A: Convert String to Date object using ymd()
> # Step B: Extract specific components
> processed_data <- dates_df %>%
+   mutate(
+     # A. Parsing: Tell R this text is a date (Year-Month-Day)
+     Actual_Date = ymd(Date_String),
+     # B. Extraction Functions
+     Year_Num = year(Actual_Date), # Extract Year (e.g., 2023)
+     Month_Num = month(Actual_Date), # Extract Month Number (1-12)
+     Month_Name = month(Actual_Date, label = TRUE), # Extract Name (Jan, Feb...)
+     Day_Num = day(Actual_Date), # Extract Day of Month (1-31)
+     # ... (Additional extractions as needed)
+   )
  
```

The screenshot shows the RStudio interface. The console pane displays the following R code and its output:

```
R - R4.5.2 ~ / ~
# A. Parsing: Tell R this text is a date (Year-Month-Day)
Actual_Date = ymd(Date_String),
# B. Extraction Functions
Year_Num = year(Actual_Date), # Extract Year (e.g., 2023)
Month_Num = month(Actual_Date), # Extract Month Number (1-12)
Month_Name = month(Actual_Date, label = TRUE), # Extract Name (Jan, Feb...)
Day_Num = day(Actual_Date), # Extract Day of Month (1-31)
weekday_Num = wday(Actual_Date), # Day of week (1=Sun, 7=Sat)
weekday_Name = wday(Actual_Date, label = TRUE, abbr = FALSE), # Full Name (Sunday)
)
Quarter = quarter(Actual_Date), # Fiscal quarter (1-4)
Day_of_Year = yday(Actual_Date) # Day count (1-366)
)
> print("--- Data with Extracted Date Components ---")
[1] "--- Data with Extracted Date Components ---"
> print(processed_data)
Event_ID Date_String Actual_Date Year_Num Month_Num Month_Name Day_Num
1 1 2023-03-05 2023-03-05 2023 3 Mar 5
2 2 2023-05-08 2023-05-08 2023 5 May 8
3 3 2024-01-09 2024-01-09 2024 1 Jan 9
4 4 2025-01-15 2025-01-15 2025 1 Jan 15
weekday_Num weekday_Name quarter Day_of_Year
1 1 Sunday 1 64
2 2 Monday 2 128
3 3 Tuesday 1 9
4 4 Wednesday 1 15
>
> # =====
> # 3. System Date : Handling "Now"
> # =====
> # Extracting components from the current system timestamp
current_time <- now()
> print("--- Current Time Extraction ---")
```

The Environment pane on the right shows the following data objects:

- final\_superstore: 9994 obs. of 24 variables
- housing: 1000 obs. of 8 variables
- insurance: 1338 obs. of 7 variables
- insurance\_df: 1338 obs. of 7 variables
- merged\_data: 0 obs. of 28 variables
- my\_data: 1000 obs. of 8 variables
- processed\_data: 4 obs. of 11 variables

A Screenshotting Tool notification is visible, stating: "Screenshot copied to clipboard. Automatically saved to screenshots folder. Markup and share".

The screenshot shows the RStudio interface. The console pane displays the following R code and its output:

```
R - R4.5.2 ~ / ~
weekday_Name = wday(Actual_Date, label = TRUE, abbr = FALSE), # Full Name (Sunday)
)
Quarter = quarter(Actual_Date), # Fiscal quarter (1-4)
Day_of_Year = yday(Actual_Date) # Day count (1-366)
)
> print("--- Data with Extracted Date Components ---")
[1] "--- Data with Extracted Date Components ---"
> print(processed_data)
Event_ID Date_String Actual_Date Year_Num Month_Num Month_Name Day_Num
1 1 2023-03-05 2023-03-05 2023 3 Mar 5
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weekday_Num weekday_Name quarter Day_of_Year
1 1 Sunday 1 64
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4 4 Wednesday 1 15
>
> # =====
> # 3. System Date : Handling "Now"
> # =====
> # Extracting components from the current system timestamp
current_time <- now()
> print("--- Current Time Extraction ---")
[1] "--- Current Time Extraction ---"
> print(paste("Current Year:", year(current_time)))
[1] "Current Year: 2025"
> print(paste("Current Hour:", hour(current_time)))
[1] "Current Hour: 12"
> print(paste("Current Minute:", minute(current_time)))
[1] "Current Minute: 8"
>
> |
```

The Environment pane on the right shows the following data objects:

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The Files pane on the right shows a list of files with their sizes and modification dates:

Name	Size	Modified
.RData	4.8 MB	Dec 1, 2025, 1:15 PM
.Rhistory	22 KB	Dec 1, 2025, 1:15 PM
American_Housing_Data_20231209.csv	4.1 MB	Nov 24, 2025, 1:16 PM
American_Housing_Data_20231209.csv.zip	22 B	Nov 24, 2025, 1:16 PM
Bills.pdf	30.3 KB	Sep 20, 2025, 3:31 PM
Custom Office Templates		
desktop.ini	402 B	Aug 13, 2025, 9:26 AM
Downloads		
Downloads - Copy		
GIS DataBase		
IISExpress		
My Music		
My Pictures		
My Videos		