

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

The screenshot shows the RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Project:** Project (None)
- Data View:** A data frame titled "Food_Delivery_Route_Efficiency_Dataset" containing 200 rows and 10 columns. The columns are: order_id, distance_km, delivery_time_min, traffic_level, route_length_km, delivery_mode, weather, order_time, restaurant_zone, and customer_zone.
- Global Environment:** Shows various objects and their details, such as:
 - combined_d...: 10150 obs. of 2 variables
 - df: 200 obs. of 10 variables
 - df_clean: 200 obs. of 11 variables
 - df_no_dupl...: 200 obs. of 10 variables
 - df_small: 200 obs. of 4 variables
 - duplicate...: 205 obs. of 10 variables
 - duplicate...: 10 obs. of 10 variables
 - flower_cle...: 10000 obs. of 2 variables
 - flower_df: 10000 obs. of 4 variables
 - Food_Deliv...: 200 obs. of 10 variables
 - iris: 150 obs. of 5 variables
 - iris_clean: 150 obs. of 2 variables
 - long_df: 600 obs. of 3 variables
 - processed...: 200 obs. of 21 variables
 - traffic_cpl...: 200 obs. of 4 variables
 - unique_ord...: 200 obs. of 10 variables
 - unique_rou...: 200 obs. of 10 variables
 - wide_df: 200 obs. of 4 variables
- Values:** current_t...: 2025-12-08 14:15:16 IST
- Bottom Status Bar:** ENG IN, 2.16.13 PM, 08-12-2025

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RStudio Environment View showing the extraction of date-time components from a food delivery dataset. The code uses lubridate to parse the dataset and extract various time components like year, month, day, hour, minute, and quarter.

```
1 # R Script: Extracting Date & Time Components using lubridate
2 # Dataset: Food_Delivery_Route_Efficiency_dataset.csv
3 # -----
4 # Install if needed
5 # install.packages("lubridate")
6 # -----
7 library(lubridate)
8 library(dplyr)
9 # -----
10 # 1. IMPORT FOOD DELIVERY DATA
11 # -----
12 df <- read.csv(
13   "C:/Users/itlab/OneDrive/Desktop/S081_R_Studio/Food_Delivery_Route_Efficiency_dataset.csv",
14   na.strings = c("", "NA")
15 )
16
17 print("--- Original Dataset Preview ---")
18 print(head(df))
19
20 # -----
21 # 2. PARSE DATE-TIME (order_time) AND EXTRACT COMPONENTS
22 # -----
23
24 processed_data <- df %>%
25   mutate(
26     # Convert character ~ POSIX date-time
27     Actual_DateTime = ymd_hm(order_time),
28
29     # Extract Components
30     Year = year(Actual_DateTime),
31     Month_Number = month(Actual_DateTime),
32     Month_Name = month(Actual_DateTime, label = TRUE),
33
34     Day = day(Actual_DateTime),
35     Weekday_Number = wday(Actual_DateTime),
36     Weekday_Name = wday(Actual_DateTime, label = TRUE, abbr = FALSE),
37
38     Hour = hour(Actual_DateTime),
39     Minute = minute(Actual_DateTime),
40
41     Quarter = quarter(Actual_DateTime),
42     Day_of_Year = yday(Actual_DateTime)
43   )
44
45 print("--- Extracted Date-Time Components ---")
46 print(head(processed_data))
47
48 # -----
49 # 3. SYSTEM DATE-TIME EXTRACTION (Now)
50 # -----
51 current_time <- now()
52
53 print("--- Current Time Extraction ---")
54 print(paste("Current Year:", year(current_time)))
55 print(paste("Current Month:", month(current_time)))
56 print(paste("Current Day:", day(current_time)))
57 print(paste("Current Hour:", hour(current_time)))
58 print(paste("Current Minute:", minute(current_time)))
59
60 # -----
61 current_time <- now()
62
63 print(paste("Current Year:", year(current_time)))
64 print(paste("Current Month:", month(current_time)))
65 print(paste("Current Day:", day(current_time)))
66 print(paste("Current Hour:", hour(current_time)))
67 print(paste("Current Minute:", minute(current_time))))
68
69 # -----
70 current_time <- now()
71
72 print(paste("Current Year:", year(current_time)))
73 print(paste("Current Month:", month(current_time)))
74 print(paste("Current Day:", day(current_time)))
75 print(paste("Current Hour:", hour(current_time)))
76 print(paste("Current Minute:", minute(current_time))))
```

RStudio Environment View showing the extraction of date-time components from a food delivery dataset. The code uses lubridate to parse the dataset and extract various time components like year, month, day, hour, minute, and quarter.

```
24 # 2. PARSE DATE-TIME (order_time) AND EXTRACT COMPONENTS
25 # -----
26
27 processed_data <- df %>%
28   mutate(
29     # Convert character ~ POSIX date-time
30     Actual_DateTime = ymd_hm(order_time),
31
32     # Extract Components
33     Year = year(Actual_DateTime),
34     Month_Number = month(Actual_DateTime),
35     Month_Name = month(Actual_DateTime, label = TRUE),
36
37     Day = day(Actual_DateTime),
38     Weekday_Number = wday(Actual_DateTime),
39     Weekday_Name = wday(Actual_DateTime, label = TRUE, abbr = FALSE),
40
41     Hour = hour(Actual_DateTime),
42     Minute = minute(Actual_DateTime),
43
44     Quarter = quarter(Actual_DateTime),
45     Day_of_Year = yday(Actual_DateTime)
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48 print("--- Extracted Date-Time Components ---")
49 print(head(processed_data))
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58 print(paste("Current Month:", month(current_time)))
59 print(paste("Current Day:", day(current_time)))
60 print(paste("Current Hour:", hour(current_time)))
61 print(paste("Current Minute:", minute(current_time))))
62
63 # -----
64 current_time <- now()
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66 print(paste("Current Year:", year(current_time)))
67 print(paste("Current Month:", month(current_time)))
68 print(paste("Current Day:", day(current_time)))
69 print(paste("Current Hour:", hour(current_time)))
70 print(paste("Current Minute:", minute(current_time))))
71
72 # -----
73 current_time <- now()
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75 print(paste("Current Year:", year(current_time)))
76 print(paste("Current Month:", month(current_time)))
77 print(paste("Current Day:", day(current_time)))
78 print(paste("Current Hour:", hour(current_time)))
79 print(paste("Current Minute:", minute(current_time))))
```

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RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Source
Console Background Jobs
R - R 4.5.2 - ~/
> # R Script: Extracting date & Time Components using lubridate
> # Dataset: Food_Delivery_Route_Efficiency_Dataset.csv
> #
>
> # install if needed
> 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/itlab/AppData/Local/R/win-library/4.5'
(as 'lib' is unspecified)

also installing the dependency 'timechange'
trying URL 'https://cran.rstudio.com/bin/windows/contrib/4.5/timechange_0.3.0.zip'
trying URL 'https://cran.rstudio.com/bin/windows/contrib/4.5/lubridate_1.9.4.zip'
package 'timechange' successfully unpacked and MD5 sums checked
package 'lubridate' successfully unpacked and MD5 sums checked
The downloaded binary packages are in
c:/users/itlab/AppData/Local/Temp/RtmpagzxM7/downloaded_packages
> library(lubridate)

Attaching package: 'lubridate'
The following objects are masked from 'package:base':
date, intersect, setdiff, union
> library(dplyr)

Attaching package: 'dplyr'
The following objects are masked from 'package:stats':
filter, lag
50088 128%
File Plots Packages Help Viewer Presentation
Import 165 MB List Global Environment
Data combined_d... 10150 obs. of 2 variables
df 200 obs. of 10 variables
df_clean 200 obs. of 11 variables
df_no_dupl... 200 obs. of 10 variables
df_small 200 obs. of 4 variables
duplicate... 205 obs. of 10 variables
duplicate_... 10 obs. of 10 variables
flower_cle... 10000 obs. of 2 variables
flower_df 10000 obs. of 4 variables
food_deliv... 200 obs. of 10 variables
iris 150 obs. of 5 variables
iris_clean 150 obs. of 2 variables
long_df 600 obs. of 3 variables
processed_... 200 obs. of 21 variables
traffic_cpi... 200 obs. of 4 variables
unique_ord... 200 obs. of 10 variables
unique_rout... 200 obs. of 10 variables
wide_df 200 obs. of 4 variables
values current_t... 2025-12-08 14:15:16 IST
current_t... 2025-12-08 14:15:16 IST
ENG IN 2.17.45 PM 08-12-2025

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Source
Console Background Jobs
R - R 4.5.2 - ~/
The following objects are masked from 'package:base':
intersect, setdiff, setequal, union
>
> # 1. IMPORT FOOD DELIVERY DATA
> #
>
> df <- read.csv(
+ "c:/users/itlab/OneDrive/Desktop/S081_R_studio/Food_Delivery_Route_Efficiency_Dataset.csv",
+ na.strings = c("", "NA"))
+)
>
> print("--- Original Dataset Preview ---")
[1] "... original dataset Preview ..."
> print(head(df))
order_id distance_km delivery_time_min traffic_level route_length_km
1 1 7.97 63.8 High 9.75
2 2 0.90 7.6 High 1.28
3 3 11.12 78.0 Medium 16.65
4 4 4.90 24.8 Low 5.25
5 5 10.04 56.0 High 11.34
6 6 10.98 70.8 High 13.02
delivery_mode weather order_time restaurant zone customer_zone
1 Bicycle Clear 2025-01-01 15:29 South North
2 Car Cloudy 2025-01-03 00:47 west North
3 Bike Rainy 2025-01-04 17:32 south Central
4 Scooter Rainy 2025-01-01 14:12 Central Central
5 Car Rainy 2025-01-02 16:50 west North
6 Car Windy 2025-01-02 09:56 west North
>
> #
> # 2. PARSE DATE-TIME (order_time) AND EXTRACT COMPONENTS
> #
>
> processed_data <- df %>%
+ mutate(
+ # Convert character - POSIX date-time
+ Actual_datetime = ymd_hm(order_time),
+ # Extract Components
+ Year = year(Actual_datetime),
+ Month = month(Actual_datetime),
+ Day = day(Actual_datetime),
+ Hour = hour(Actual_datetime),
+ Minute = minute(Actual_datetime),
+ Second = second(Actual_datetime))
Nifty midcap
File Plots Packages Help Viewer Presentation
Import 165 MB List Global Environment
Data combined_d... 10150 obs. of 2 variables
df 200 obs. of 10 variables
df_clean 200 obs. of 11 variables
df_no_dupl... 200 obs. of 10 variables
df_small 200 obs. of 4 variables
duplicate... 205 obs. of 10 variables
duplicate_... 10 obs. of 10 variables
flower_cle... 10000 obs. of 2 variables
flower_df 10000 obs. of 4 variables
food_deliv... 200 obs. of 10 variables
iris 150 obs. of 5 variables
iris_clean 150 obs. of 2 variables
long_df 600 obs. of 3 variables
processed_... 200 obs. of 21 variables
traffic_cpi... 200 obs. of 4 variables
unique_ord... 200 obs. of 10 variables
unique_rout... 200 obs. of 10 variables
wide_df 200 obs. of 4 variables
values current_t... 2025-12-08 14:15:16 IST
current_t... 2025-12-08 14:15:16 IST
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The screenshot shows an RStudio interface with the following details:

- Console:** Displays R code and its output. The code extracts date-time components from a timestamp and prints the first few rows of a dataset named `processed_udata`. The output includes columns like `order_id`, `distance_km`, `delivery_time_min`, `traffic_level`, `route_length_km`, `delivery_mode`, `weather`, `order_time`, `restaurant_zone`, `customer_zone`, `ActualDateTime`, `Year`, `Month_Number`, `Month_Name`, `Day`, `weekday_number`, and `weekday_name`.
- Data Browser:** Shows a tree view of available datasets. The tree starts with `combined_df` at the top, followed by `df`, `df_clean`, `df_no_dups`, `df_small`, `Duplicate_1`, `Duplicate_2`, `duplicate_1`, `duplicate_2`, `flower_clean`, `flower_df`, `Food_delivery`, `iris`, `iris_clean`, `long_df`, `processed_df`, `traffic_ppl`, `unique_ord`, `unique_route`, and `wide_df`.
- Environment:** Shows the current environment variables, including `current_time` set to `2025-12-08 14:15:16 IST`.
- Bottom Navigation:** Includes tabs for Files, Plots, Packages, Help, Viewer, and Presentation, along with standard system icons.

The screenshot shows an RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Source Editor:** Displays R code for data manipulation and system extraction. The code includes reading a 'weather' dataset, creating a 'Actual_Datetime' column, and extracting current system time information.
- Data View:** Shows the 'weather' dataset with columns: delivery_mode, vehicle, Clear, 2025-01-01 15:29, South, North, ...
- Environment View:** Lists available datasets: combined_df, df_clean, df_no_dupl..., df_small, duplicate..., flower_cle, flower_df, Food_deliv..., iris, iris_clean, long_df, processed..., traffic_pi, unique_ord..., unique_rloo..., wide_df.
- Plots:** No plots are currently displayed.
- Packages:** No packages are currently displayed.
- Help:** No help pages are currently displayed.
- Viewer:** No output is currently displayed.
- Presentation:** No presentation is currently displayed.

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