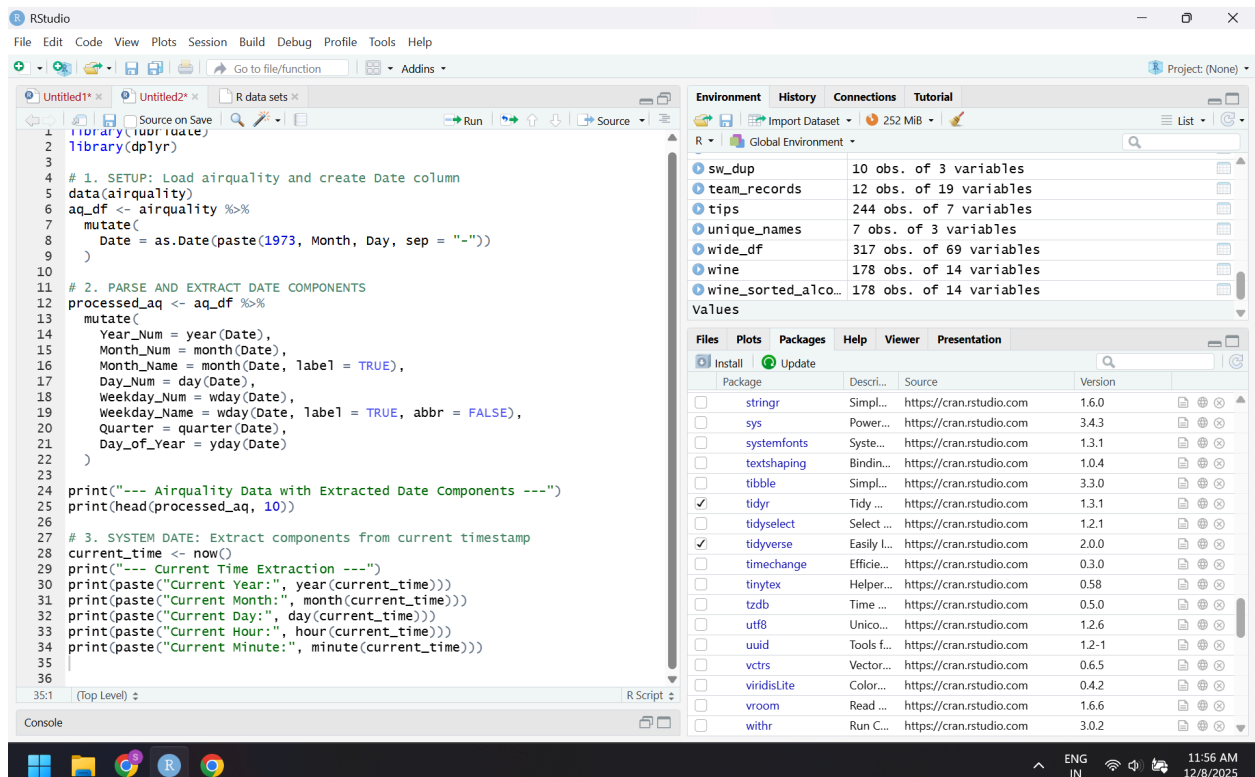


SHETH L.U.J. & SIR M.V. COLLEGE OF SCIENCE
SUBJECT - Data Analysis with SAS / SPSS / R

Aim :- Extracting date components using lubridate:: functions (R).

Input :



The screenshot shows the RStudio interface. The script editor contains the following code:

```
1 library(lubridate)
2 library(dplyr)
3
4 # 1. SETUP: Load airquality and create Date column
5 data(airquality)
6 aq_df <- airquality %>%
7   mutate(
8     Date = as.Date(paste(1973, Month, Day, sep = "-"))
9   )
10
11 # 2. PARSE AND EXTRACT DATE COMPONENTS
12 processed_aq <- aq_df %>%
13   mutate(
14     Year_Num = year(Date),
15     Month_Num = month(Date),
16     Month_Name = month(Date, label = TRUE),
17     Day_Num = day(Date),
18     Weekday_Num = wday(Date),
19     Weekday_Name = wday(Date, label = TRUE, abbr = FALSE),
20     Quarter = quarter(Date),
21     Day_of_Year = yday(Date)
22   )
23
24 print("--- Airquality Data with Extracted Date Components ---")
25 print(head(processed_aq, 10))
26
27 # 3. SYSTEM DATE: Extract components from current timestamp
28 current_time <- now()
29 print("--- Current Time Extraction ---")
30 print(paste("Current Year:", year(current_time)))
31 print(paste("Current Month:", month(current_time)))
32 print(paste("Current Day:", day(current_time)))
33 print(paste("Current Hour:", hour(current_time)))
34 print(paste("Current Minute:", minute(current_time)))
35
36
```

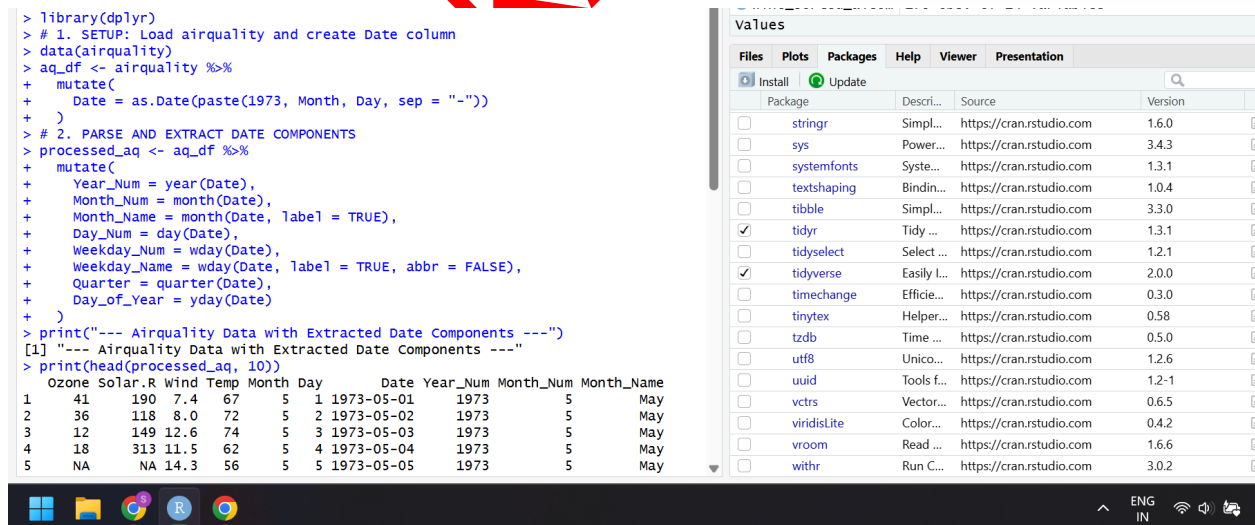
The Environment pane on the right shows the following objects:

Object	Obs.	Vars.
sw_dup	10	3
team_records	12	19
tips	244	7
unique_names	7	3
wide_df	317	69
wine	178	14
wine_sorted_alco...	178	14

The Packages pane shows the following installed packages:

Package	Source	Version
stringr	https://cran.rstudio.com	1.6.0
sys	https://cran.rstudio.com	3.4.3
systemfonts	https://cran.rstudio.com	1.3.1
textshaping	https://cran.rstudio.com	1.0.4
tibble	https://cran.rstudio.com	3.3.0
tidyr	https://cran.rstudio.com	1.3.1
tidyselect	https://cran.rstudio.com	1.2.1
tidyverse	https://cran.rstudio.com	2.0.0
timechange	https://cran.rstudio.com	0.3.0
tinytex	https://cran.rstudio.com	0.58
tzdb	https://cran.rstudio.com	0.5.0
utf8	https://cran.rstudio.com	1.2.6
uuid	https://cran.rstudio.com	1.2-1
vctrs	https://cran.rstudio.com	0.6.5
viridisLite	https://cran.rstudio.com	0.4.2
vroom	https://cran.rstudio.com	1.6.6
withr	https://cran.rstudio.com	3.0.2

Output :



The screenshot shows the RStudio interface with the console output and the Environment pane. The console output is as follows:

```
> library(dplyr)
> # 1. SETUP: Load airquality and create Date column
> data(airquality)
> aq_df <- airquality %>%
+   mutate(
+     Date = as.Date(paste(1973, Month, Day, sep = "-"))
+   )
> # 2. PARSE AND EXTRACT DATE COMPONENTS
> processed_aq <- aq_df %>%
+   mutate(
+     Year_Num = year(Date),
+     Month_Num = month(Date),
+     Month_Name = month(Date, label = TRUE),
+     Day_Num = day(Date),
+     Weekday_Num = wday(Date),
+     Weekday_Name = wday(Date, label = TRUE, abbr = FALSE),
+     Quarter = quarter(Date),
+     Day_of_Year = yday(Date)
+   )
> print("--- Airquality Data with Extracted Date Components ---")
[1] "--- Airquality Data with Extracted Date Components ---"
> print(head(processed_aq, 10))
```

The output shows the first 10 rows of the processed data:

	Ozone	Solar.R	Wind	Temp	Month	Day	Date	Year_Num	Month_Num	Month_Name
1	41	190	7.4	67	5	1	1973-05-01	1973	5	May
2	36	118	8.0	72	5	2	1973-05-02	1973	5	May
3	12	149	12.6	74	5	3	1973-05-03	1973	5	May
4	18	313	11.5	62	5	4	1973-05-04	1973	5	May
5	NA	NA	14.3	56	5	5	1973-05-05	1973	5	May

The Environment pane on the right shows the following objects:

Object	Obs.	Vars.
sw_dup	10	3
team_records	12	19
tips	244	7
unique_names	7	3
wide_df	317	69
wine	178	14
wine_sorted_alco...	178	14

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SHETH L.U.J. & SIR M.V. COLLEGE OF SCIENCE

SUBJECT - Data Analysis with SAS / SPSS / R

The screenshot shows the RStudio interface with the following components:

- Source Panel:** Contains R code for processing air quality data. The code includes comments, variable assignments, and a loop to extract date components from a timestamp.
- Console Panel:** Displays the output of the R code, showing the extracted date components for the first 10 observations of the 'processed_aq' dataset.
- Environment Panel:** Lists the objects in the global environment, including 'sw_dup', 'team_records', 'tips', 'unique_names', 'wide_df', 'wine', and 'wine_sorted_alco...'. Each object is associated with a specific number of observations and variables.
- Files Panel:** Shows the installed and available packages, including 'stringr', 'sys', 'systemfonts', 'textshaping', 'tibble', 'tidyverse', 'timechange', 'tinytex', 'tzdb', 'utf8', 'uuid', 'vctrs', 'viridisLite', 'vroom', and 'withr'.

The screenshot shows the RStudio interface with the following components:

- Source Panel:** Contains R code for processing air quality data. The code includes comments, variable assignments, and a loop to extract date components from a timestamp.
- Console Panel:** Displays the output of the R code, showing the extracted date components for the first 10 observations of the 'processed_aq' dataset.
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- Files Panel:** Shows the installed and available packages, including 'stringr', 'sys', 'systemfonts', 'textshaping', 'tibble', 'tidyverse', 'timechange', 'tinytex', 'tzdb', 'utf8', 'uuid', 'vctrs', 'viridisLite', 'vroom', and 'withr'.

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