SHETH L.U.J.AND SIR M.V. COLLEGE
PRACTICAL NO.14
Data Analysis with SAS / SPSS /R

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

INPUT:-

```
# R Script: Extracting Date Components using lubridate (Wine Dataset Version)



# 1. INSTALL & LOAD LIBRARIES

# Run this ONCE:
install.packages("lubridate")

# Load libraries
library(lubridate)
library(dplyr)



# 2. SET WORKING DIRECTORY

setwd("D:/S079_VIBHUTI/ADV PYTHON FOR DATA SCIENCE")
print(list.files())



# 3. LOAD WINE DATASET

wine <- read.csv("winequality-red.csv")
```

```
head(wine)



# 4. ADD DATE COLUMN


wine$date_recorded <- seq(
  from = as.Date("2023-01-01"),
  length.out = nrow(wine),
  by = "day"
)



# 5. PARSE & EXTRACT DATE COMPONENTS


wine_dates_processed <- wine %>%
  mutate(
    Actual_Date = ymd(date_recorded),
    Year_Num = year(Actual_Date),
    Month_Num = month(Actual_Date),
    Month_Name = month(Actual_Date, label = TRUE),
    Day_Num = day(Actual_Date),
    Weekday_Num = wday(Actual_Date),
    Weekday_Name = wday(Actual_Date, label = TRUE, abbr = FALSE),
    Quarter = quarter(Actual_Date),
    Day_of_Year = yday(Actual_Date)
```

```
)

print(head(wine_dates_processed))



# 6. SYSTEM DATE & TIME


current_time <- now()


print(paste("Current Year:", year(current_time)))
print(paste("Current Month:", month(current_time)))
print(paste("Current Day:", day(current_time)))
print(paste("Current Hour:", hour(current_time)))
print(paste("Current Minute:", minute(current_time)))
```

OUTPUT:-

```
        C:\Users\mvlui\AppData\Local\Temp\RtmpMl5EzG\downloaded_packages
> # R Script: Extracting Date Components using lubridate (Wine Dataset Version)
>
>
> # 1. INSTALL & LOAD LIBRARIES
>
> # Run this ONCE:
> install.packages("lubridate")
```

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```
The downloaded binary packages are in
        C:\Users\mvlui\AppData\Local\Temp\RtmpMl5EzG\downloaded_packages
>
> # Load libraries
> library(lubridate)

Attaching package: 'lubridate'

The following objects are masked from 'package:base':

    date, intersect, setdiff, union

Warning message:
package 'lubridate' was built under R version 4.1.3
> library(dplyr)

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
```

```
Warning message:
package 'dplyr' was built under R version 4.1.3
>
>
> # 2. SET WORKING DIRECTORY
>
> setwd("D:/S079_VIBHUTI/ADV PYTHON FOR DATA SCIENCE")
> print(list.files())
 [1] "cardata.csv"                          "Cleaned_cardata.csv"
 [3] "Cleaned_data.csv"                     "Cleaned_dataset_summary.csv"
 [5] "Cleaned_IRIS.csv"                     "Cleaned_shades.csv"
 [7] "Cleaned_Student_Mental_Health.csv"    "Cleaned_winequality-red.csv"
 [9] "dataset_summary.csv"                  "day.csv"
[11] "IRIS.csv"                             "Processed_dataset_summary.csv"
[13] "Processed_IRIS.csv"                   "Processed_Shades.csv"
[15] "Processed_Shades_Summary.csv"         "Processed_Student_Mental_Health.csv"
[17] "Processed_WineQuality_Red.csv"        "S079_PRAC1.py"
[19] "S079_VIBHUTI_PRAC1.docx"              "S079_VIBHUTI_PRAC1.pdf"
[21] "S079Vibhu.py"                         "S079VIBHUTI.PY"
[23] "S079VIBHUTI_PRAC11.pdf"               "S079VIBHUTI_PRAC12.pdf"
[25] "S079VIBHUTI_PRAC13.pdf"               "S079VIBHUTI_PRAC2.pdf"
[27] "S079VIBHUTI_PRAC3.pdf"                "S079VIBHUTI_PRAC4.pdf"
[29] "S079VIBHUTI_PRAC6.pdf"                "sales_data.csv"
[31] "shades.csv"                           "Social_Network_Ads.csv"
[33] "Student Mental health.csv"            "ua_passengers.csv"
[35] "vibh.ipynb"                           "VIBHUTI_PRAC11.R"
[37] "VIBHUTI_PRAC12.R"                     "VIBHUTI_PRAC13.R"
[39] "VIBHUTI_PRAC14.R"                     "Vibhuti_prac3.py"
[41] "vibhuti_prac6.py"                     "VIBHUTI_PRAC6.R"
[43] "VIBHUTIS079.ipynb"                    "VIBHUTIS079.PY"
[45] "winequality-red.csv"
>
>
> # 3. LOAD WINE DATASET
>
> wine <- read.csv("winequality-red.csv")
> head(wine)
  fixed.acidity volatile.acidity citric.acid residual.sugar chlorides free.sulfur.dioxide
1           7.4             0.70        0.00            1.9     0.076                  11
```

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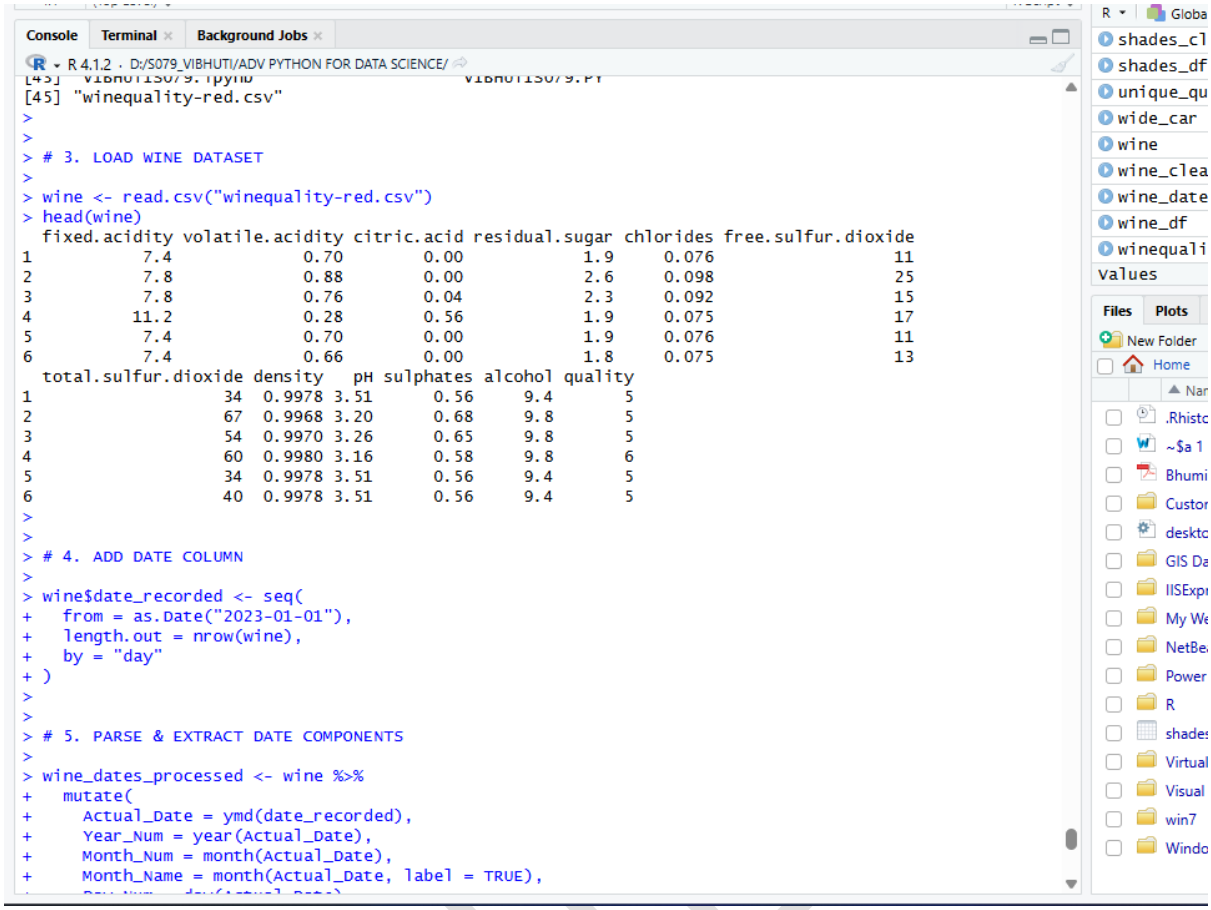

```
[45] "winequality-red.csv"
>
>
> # 3. LOAD WINE DATASET
>
> wine <- read.csv("winequality-red.csv")
> head(wine)
  fixed.acidity volatile.acidity citric.acid residual.sugar chlorides free.sulfur.dioxide
1           7.4             0.70        0.00            1.9     0.076                  11
2           7.8             0.88        0.00            2.6     0.098                  25
3           7.8             0.76        0.04            2.3     0.092                  15
4          11.2             0.28        0.56            1.9     0.075                  17
5           7.4             0.70        0.00            1.9     0.076                  11
6           7.4             0.66        0.00            1.8     0.075                  13
  total.sulfur.dioxide density   pH sulphates alcohol quality
1                   34  0.9978 3.51      0.56     9.4       5
2                   67  0.9968 3.20      0.68     9.8       5
3                   54  0.9970 3.26      0.65     9.8       5
4                   60  0.9980 3.16      0.58     9.8       6
5                   34  0.9978 3.51      0.56     9.4       5
6                   40  0.9978 3.51      0.56     9.4       5
>
>
> # 4. ADD DATE COLUMN
>
> wine$date_recorded <- seq(
+   from = as.Date("2023-01-01"),
+   length.out = nrow(wine),
+   by = "day"
+ )
>
>
> # 5. PARSE & EXTRACT DATE COMPONENTS
>
> wine_dates_processed <- wine %>%
+   mutate(
+     Actual_Date = ymd(date_recorded),
+     Year_Num = year(Actual_Date),
+     Month_Num = month(Actual_Date),
+     Month_Name = month(Actual_Date, label = TRUE),
```


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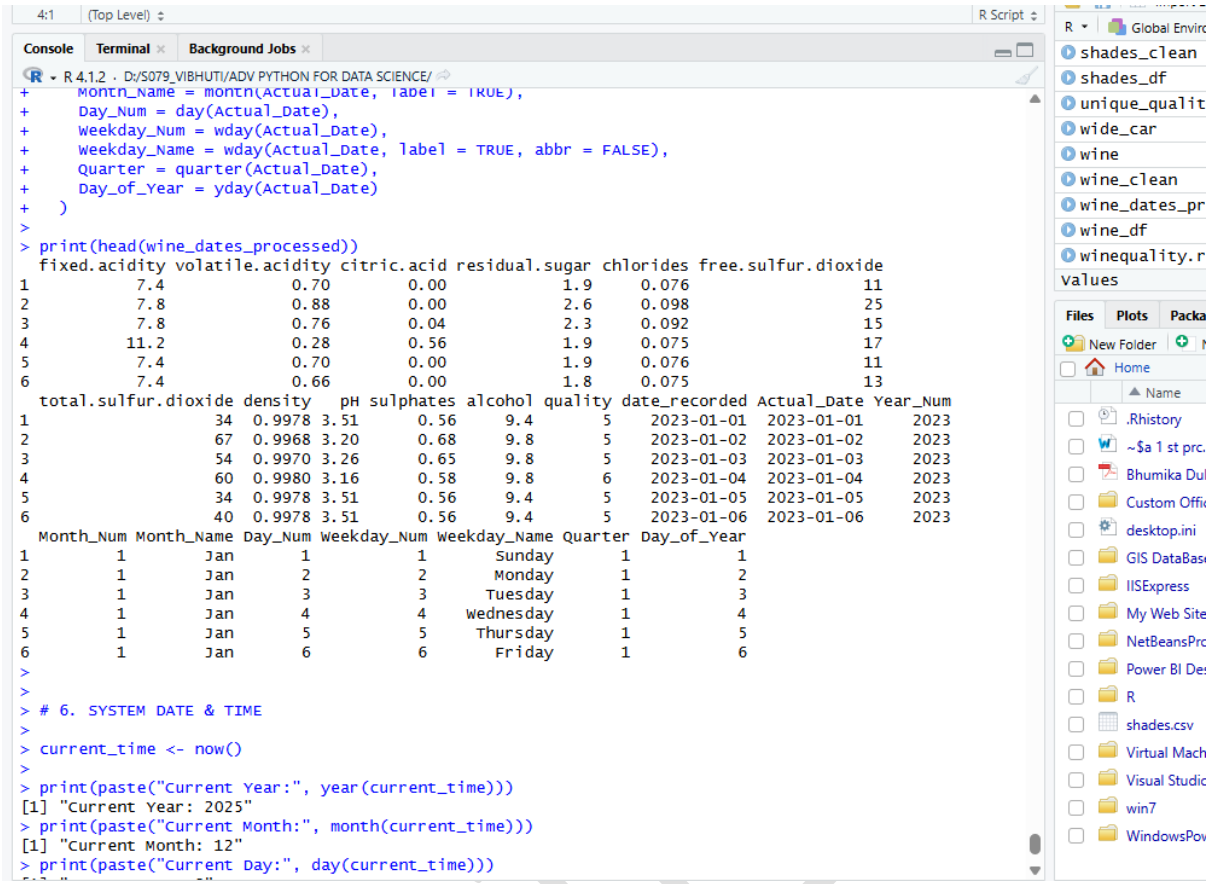

```
+     Month_Name = month(Actual_Date, label = TRUE),
+     Day_Num = day(Actual_Date),
+     Weekday_Num = wday(Actual_Date),
+     Weekday_Name = wday(Actual_Date, label = TRUE, abbr = FALSE),
+     Quarter = quarter(Actual_Date),
+     Day_of_Year = yday(Actual_Date)
+   )
>
> print(head(wine_dates_processed))
  fixed.acidity volatile.acidity citric.acid residual.sugar chlorides free.sulfur.dioxide
1           7.4             0.70        0.00            1.9     0.076                  11
2           7.8             0.88        0.00            2.6     0.098                  25
3           7.8             0.76        0.04            2.3     0.092                  15
4          11.2             0.28        0.56            1.9     0.075                  17
5           7.4             0.70        0.00            1.9     0.076                  11
6           7.4             0.66        0.00            1.8     0.075                  13
  total.sulfur.dioxide density   pH sulphates alcohol quality date_recorded Actual_Date Year_Num
1                   34  0.9978 3.51      0.56     9.4       5    2023-01-01  2023-01-01      2023
2                   67  0.9968 3.20      0.68     9.8       5    2023-01-02  2023-01-02      2023
3                   54  0.9970 3.26      0.65     9.8       5    2023-01-03  2023-01-03      2023
4                   60  0.9980 3.16      0.58     9.8       6    2023-01-04  2023-01-04      2023
5                   34  0.9978 3.51      0.56     9.4       5    2023-01-05  2023-01-05      2023
6                   40  0.9978 3.51      0.56     9.4       5    2023-01-06  2023-01-06      2023
  Month_Num Month_Name Day_Num Weekday_Num Weekday_Name Quarter Day_of_Year
1         1        Jan       1           1       Sunday       1           1
2         1        Jan       2           2       Monday       1           2
3         1        Jan       3           3      Tuesday       1           3
4         1        Jan       4           4    Wednesday       1           4
5         1        Jan       5           5     Thursday       1           5
6         1        Jan       6           6       Friday       1           6
>
>
> # 6. SYSTEM DATE & TIME
>
> current_time <- now()
>
> print(paste("Current Year:", year(current_time)))
[1] "Current Year: 2025"
> print(paste("Current Month:", month(current_time)))
[1] "Current Month: 12"
> print(paste("Current Day:", day(current_time)))
```


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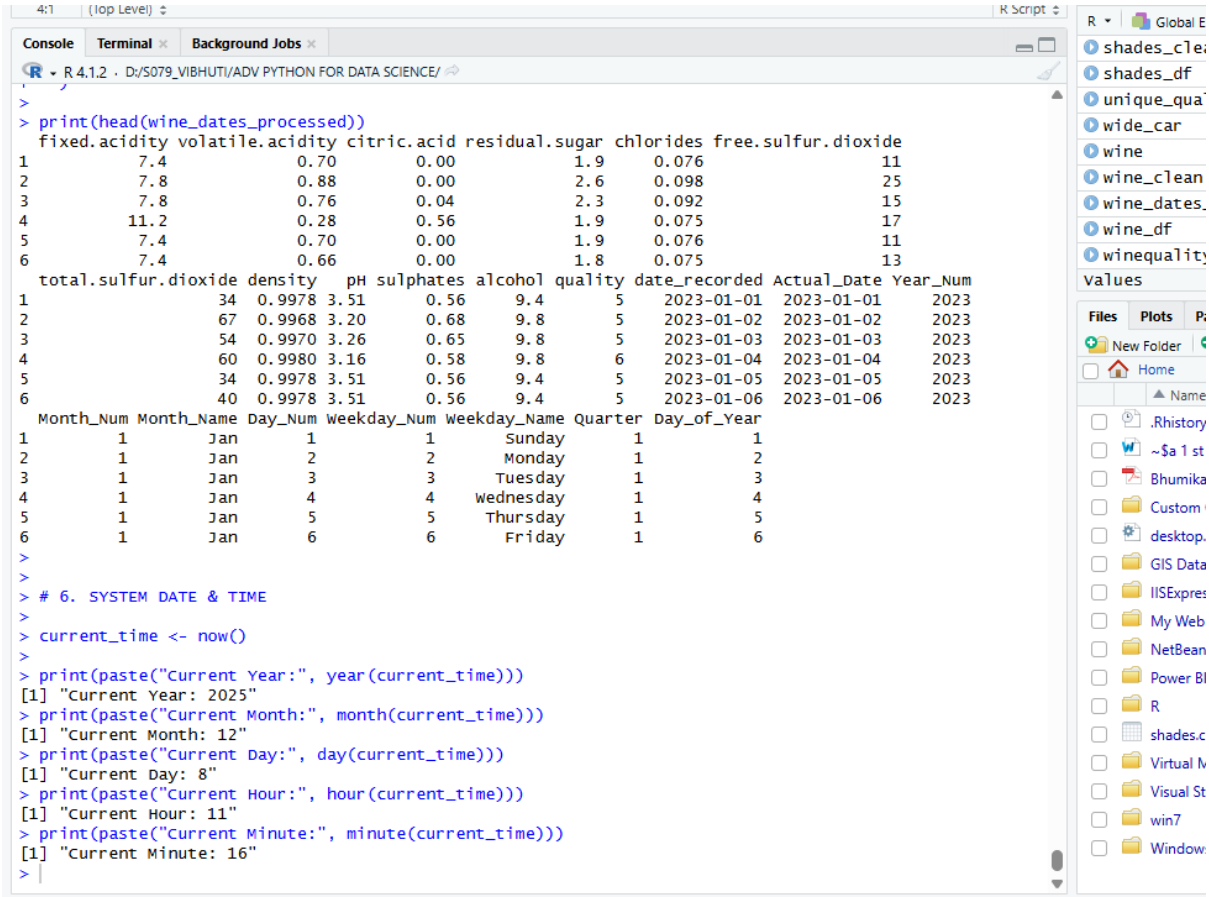

```
> print(head(wine_dates_processed))
  fixed.acidity volatile.acidity citric.acid residual.sugar chlorides free.sulfur.dioxide
1           7.4             0.70        0.00            1.9     0.076                  11
2           7.8             0.88        0.00            2.6     0.098                  25
3           7.8             0.76        0.04            2.3     0.092                  15
4          11.2             0.28        0.56            1.9     0.075                  17
5           7.4             0.70        0.00            1.9     0.076                  11
6           7.4             0.66        0.00            1.8     0.075                  13
  total.sulfur.dioxide density   pH sulphates alcohol quality date_recorded Actual_Date Year_Num
1                   34  0.9978 3.51      0.56     9.4       5    2023-01-01  2023-01-01     2023
2                   67  0.9968 3.20      0.68     9.8       5    2023-01-02  2023-01-02     2023
3                   54  0.9970 3.26      0.65     9.8       5    2023-01-03  2023-01-03     2023
4                   60  0.9980 3.16      0.58     9.8       6    2023-01-04  2023-01-04     2023
5                   34  0.9978 3.51      0.56     9.4       5    2023-01-05  2023-01-05     2023
6                   40  0.9978 3.51      0.56     9.4       5    2023-01-06  2023-01-06     2023
  Month_Num Month_Name Day_Num Weekday_Num Weekday_Name Quarter Day_of_Year
1         1        Jan       1           1      Sunday       1           1
2         1        Jan       2           2      Monday       1           2
3         1        Jan       3           3     Tuesday       1           3
4         1        Jan       4           4   Wednesday       1           4
5         1        Jan       5           5    Thursday       1           5
6         1        Jan       6           6      Friday       1           6
>
>
> # 6. SYSTEM DATE & TIME
>
> current_time <- now()
>
> print(paste("Current Year:", year(current_time)))
[1] "Current Year: 2025"
> print(paste("Current Month:", month(current_time)))
[1] "Current Month: 12"
> print(paste("Current Day:", day(current_time)))
[1] "Current Day: 8"
> print(paste("Current Hour:", hour(current_time)))
[1] "Current Hour: 11"
> print(paste("Current Minute:", minute(current_time)))
[1] "Current Minute: 16"
>
```


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