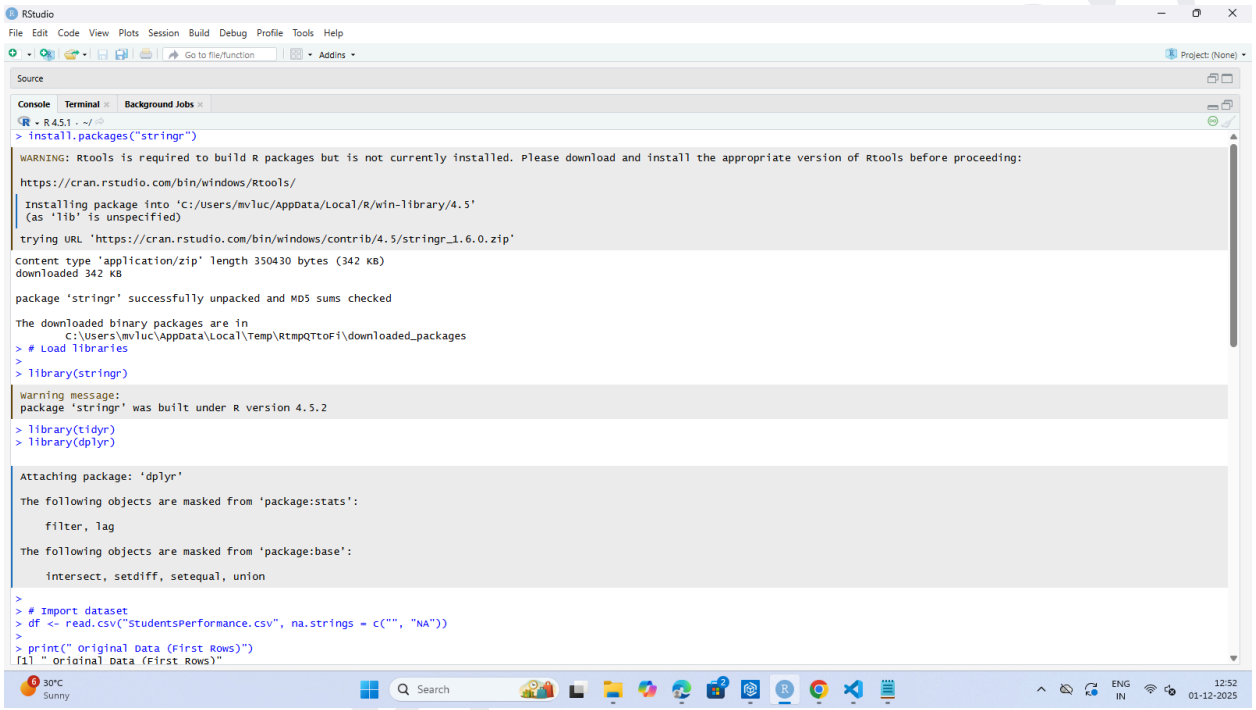
SHETH L.U.J. AND SIR M.V. COLLEGE OF ARTS SCIENCE AND COMMERCE

SUBJECT : R Programming

Practical No 9

Aim : Performing text manipulation using str_sub(), str_split() (R). import dataset.

Output :



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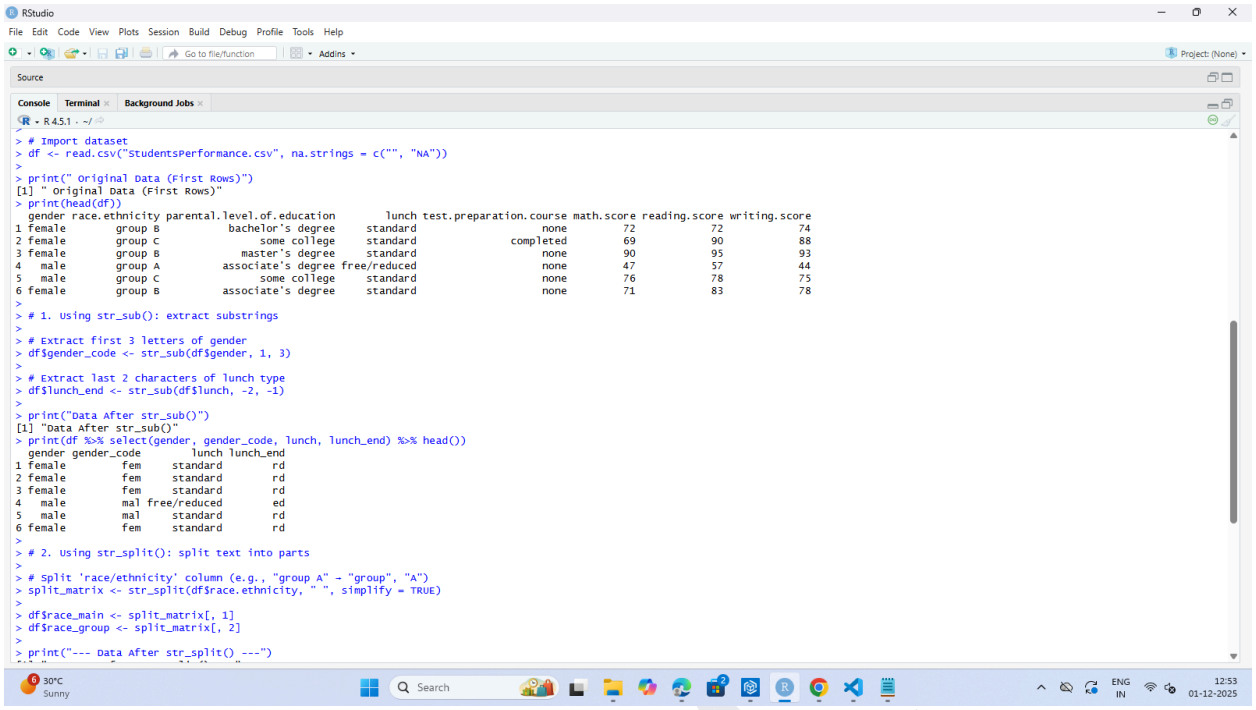
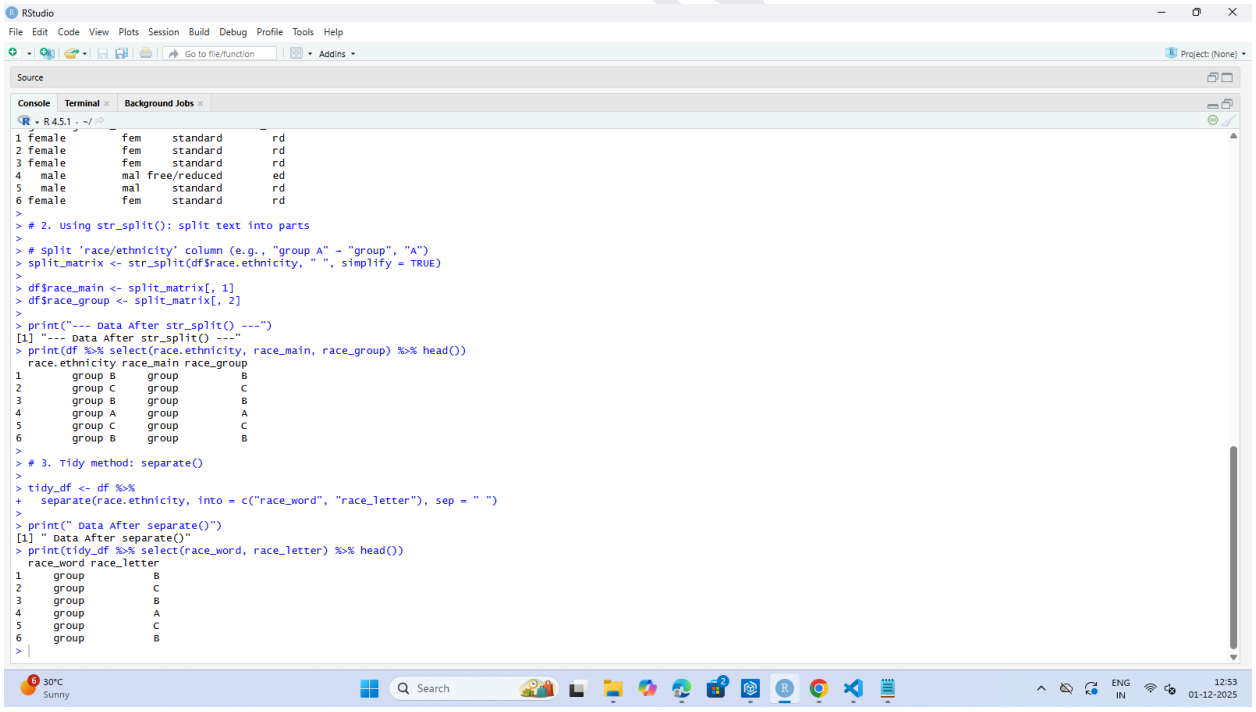


```
> # Import dataset
> df <- read.csv("StudentsPerformance.csv", na.strings = c("", "NA"))
>
> print(" Original Data (First Rows)")
[1] " Original Data (First Rows)"
> print(head(df))
  gender race.ethnicity parental.level.of.education       lunch test.preparation.course math.score reading.score writing.score
1 female        group B           bachelor's degree    standard                  none         72            72            74
2 female        group C                some college    standard             completed         69            90            88
3 female        group B            master's degree    standard                  none         90            95            93
4   male        group A         associate's degree free/reduced                  none         47            57            44
5   male        group C                some college    standard                  none         76            78            75
6 female        group B         associate's degree    standard                  none         71            83            78
>
> # 1. Using str_sub(): extract substrings
>
> # Extract first 3 letters of gender
> df$gender_code <- str_sub(df$gender, 1, 3)
>
> # Extract last 2 characters of lunch type
> df$lunch_end <- str_sub(df$lunch, -2, -1)
>
> print("Data After str_sub()")
[1] "Data After str_sub()"
> print(df %>% select(gender, gender_code, lunch, lunch_end) %>% head())
  gender gender_code       lunch lunch_end
1 female         fem    standard        rd
2 female         fem    standard        rd
3 female         fem    standard        rd
4   male         mal free/reduced        ed
5   male         mal    standard        rd
6 female         fem    standard        rd
>
> # 2. Using str_split(): split text into parts
>
> # Split 'race/ethnicity' column (e.g., "group A" → "group", "A")
> split_matrix <- str_split(df$race.ethnicity, " ", simplify = TRUE)
>
> df$race_main <- split_matrix[, 1]
> df$race_group <- split_matrix[, 2]
>
> print("--- Data After str_split() ---")
```



```
1 female         fem    standard        rd
2 female         fem    standard        rd
3 female         fem    standard        rd
4   male         mal free/reduced        ed
5   male         mal    standard        rd
6 female         fem    standard        rd
>
> # 2. Using str_split(): split text into parts
>
> # Split 'race/ethnicity' column (e.g., "group A" → "group", "A")
> split_matrix <- str_split(df$race.ethnicity, " ", simplify = TRUE)
>
> df$race_main <- split_matrix[, 1]
> df$race_group <- split_matrix[, 2]
>
> print("--- Data After str_split() ---")
[1] "--- Data After str_split() ---"
> print(df %>% select(race.ethnicity, race_main, race_group) %>% head())
  race.ethnicity race_main race_group
1        group B     group          B
2        group C     group          C
3        group B     group          B
4        group A     group          A
5        group C     group          C
6        group B     group          B
>
> # 3. Tidy method: separate()
>
> tidy_df <- df %>%
+   separate(race.ethnicity, into = c("race_word", "race_letter"), sep = " ")
>
> print(" Data After separate()")
[1] " Data After separate()"
> print(tidy_df %>% select(race_word, race_letter) %>% head())
  race_word race_letter
1     group           B
2     group           C
3     group           B
4     group           A
5     group           C
6     group           B
>
```

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