

ITDS 6th Practical

The image shows two side-by-side RStudio sessions. Both sessions have the following structure:

```
File Edit Code View Plots Session Build Debug Profile Tools Help
Source on Save Go to file/function Addins Project: (None)
```

Session 1 (Top Left):

```
Untitled2.R
1 #Step 1: Install and Load Tidyverse
2 library(tidyverse)
3 
4 #Step 2: Create a sample dataset
5 students <- tibble(
6   Name = c("Anjali", "Rahul", "Priya", "Aman", "Sneha", "Ravi"),
7   Age = c(20, 22, 19, 21, 20, 23),
8   Gender = c("F", "M", "F", "M", "F", "M"),
9   Marks = c(85, 78, 92, 88, 95, 60)
10 )
11 #install.packages("tidyverse")
12 
13 #view the original dataset
14 print("Original Data: ")
15 print(students)
```

Session 2 (Bottom Left):

```
Untitled2.R
1 #Step 1: Install and Load Tidyverse
2 library(tidyverse)
3 
4 #Step 2: Create a sample dataset
5 students <- tibble(
6   Name = c("Anjali", "Rahul", "Priya", "Aman", "Sneha", "Ravi"),
7   Age = c(20, 22, 19, 21, 20, 23),
8   Gender = c("F", "M", "F", "M", "F", "M"),
9   Marks = c(85, 78, 92, 88, 95, 60)
10 )
11 #install.packages("tidyverse")
12 
13 #view the original dataset
14 print("Original Data: ")
15 print(students)
```

Environment Tab (Top Right):

```
install.packages("tidyverse")
library(tidyverse)
library(dplyr)
students <- tibble(
  Name = c("Anjali", "Rahul", "Priya", "Aman", "Sneha", "Ravi"),
  Age = c(20, 22, 19, 21, 20, 23),
  Gender = c("F", "M", "F", "M", "F", "M"),
  Marks = c(85, 78, 92, 88, 95, 60)
)
#install.packages("tidyverse")
#view the original dataset
print("Original Data: ")
print(students)
```

Packages Tab (Bottom Right):

Name	Description	Version
dplyr	A Grammar of Data Manipulation	1.1.4
dplyr	A 'dplyr' Back End for Databases	2.5.0
dtplyr	Data Table Back-End for 'dplyr'	1.3.1

Console Tab (Bottom Left):

```
R 4.4.1 - ~/d
> #view the original dataset
> print("Original Data: ")
[1] "Original Data: "
> print(students)
# A tibble: 6 × 4
  Name     Age Gender Marks
  <chr> <dbl> <chr> <dbl>
1 Anjali    20 F      85
2 Rahul     22 M      78
3 Priya     19 F      92
4 Aman      21 M      88
5 Sneha     20 F      95
6 Ravi      23 M      60
> |
```

Files Tab (Bottom Right):

Name	Size	Modified
.Data	4.4 KB	Jul 31, 2025, 12:21 PM
.History	6.5 KB	Jul 31, 2025, 12:21 PM
1B.cpp	1.1 KB	Jun 30, 2025, 11:54 AM
1B.exe	1.8 MB	Jun 30, 2025, 12:32 PM
9133 dir Q.xlsx	12.5 KB	Apr 3, 2025, 8:39 AM
254038		
Adobe		
Desktop - Shortcut.lnk	740 B	Jul 17, 2025, 8:22 AM
desktop.ini	402 B	Feb 1, 2023, 3:56 PM
EDA-B2		
edaPSAB.txt	842 B	Jul 17, 2025, 8:49 AM

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The image shows two separate instances of the RStudio IDE running side-by-side. Both instances have the same layout: a top menu bar, a left sidebar with tabs like 'Console' and 'Background Jobs', a central script editor area, and a right panel for file management.

Session 1 (Left):

```
print(students)
#> # a. Using select(): Select name and marks columns
#> selected_data <- students %>%
#>   select(Name,Marks)
#>
#> print("Selected Name and Marks: ")
#> print(selected_data)
#>
#> #b. Using filter(): Filter students who scored above 85
#> high Scorers <- students %>%
#>   filter(Marks>85)
#>
#> print("Students with Marks > 85: ")
#> print(high Scorers)
```

Session 2 (Right):

```
selected_data <- students %>%
  select(Name,Marks)
print("Selected Name and Marks: ")
print(selected_data)
#a. Using select(): Select name and marks columns
selected_data <- students %>%
  select(Name,Marks)
print("Selected Name and Marks: ")
print(selected_data)
#b. Using filter(): Filter students who scored above 85
high Scorers <- students %>%
  filter(Marks>85)
print("Students with Marks > 85: ")
print(high Scorers)
```

Common Console Output:

```
R 4.4.1 - ~/d
> #b. Using filter(): Filter students who scored above 85
> high Scorers <- students %>%
+   filter(Marks>85)
>
> print("Students with Marks > 85: ")
[1] "Students with Marks > 85: "
> print(high Scorers)
# A tibble: 3 × 4
  Name  Age Gender Marks
  <chr><dbl><chr><dbl>
1 Priya  19 F    92
2 Aman   21 M    88
3 Sneha  20 F    95
> |
```

Session 3 (Bottom Left):

```
#> #b. Using filter(): Filter students who scored above 85
#> high Scorers <- students %>%
#>   filter(Marks>85)
#>
#> print("Students with Marks > 85: ")
#> print(high Scorers)
#>
#> #c. Using mutate(): Add a new column 'Result' as Pass/Fail
#> students_with_result <- students %>%
#>   mutate(Result = ifelse(Marks >= 75, "Pass", "Fail"))
#> print("Data with Result column: ")
#> print(students_with_result)
#>
#> # A tibble: 6 × 5
#>   Name  Age Gender Marks Result
#>   <chr><dbl><chr><dbl><chr>
1 Anjali 20 F    85 Pass
2 Rahul   22 M    78 Pass
3 Priya   19 F    92 Pass
4 Aman   21 M    88 Pass
5 Sneha  20 F    95 Pass
6 Rav1   23 M    60 Fail
> |
```

Session 4 (Bottom Right):

```
selected_data <- students %>%
  select(Name,Marks)
print("Selected Name and Marks: ")
print(selected_data)
#b. Using filter(): Filter students who scored above 85
high Scorers <- students %>%
  filter(Marks>85)
print("Students with Marks > 85: ")
print(high Scorers)
#c. Using mutate(): Add a new column 'Result' as Pass/Fail
students_with_result <- students %>%
  mutate(Result = ifelse(Marks >= 75, "Pass", "Fail"))
print("Data with Result column: ")
print(students_with_result)
```

Common Console Output:

```
R 4.4.1 - ~/d
> #b. Using filter(): Filter students who scored above 85
> high Scorers <- students %>%
+   filter(Marks>85)
>
> print("Students with Marks > 85: ")
[1] "Students with Marks > 85: "
> print(high Scorers)
# A tibble: 3 × 4
  Name  Age Gender Marks
  <chr><dbl><chr><dbl>
1 Priya  19 F    92
2 Aman   21 M    88
3 Sneha  20 F    95
> |
> #c. Using mutate(): Add a new column 'Result' as Pass/Fail
> students_with_result <- students %>%
+   mutate(Result = ifelse(Marks >= 75, "Pass", "Fail"))
> print("Data with Result column: ")
> print(students_with_result)
# A tibble: 6 × 5
  Name  Age Gender Marks Result
  <chr><dbl><chr><dbl><chr>
1 Anjali 20 F    85 Pass
2 Rahul   22 M    78 Pass
3 Priya   19 F    92 Pass
4 Aman   21 M    88 Pass
5 Sneha  20 F    95 Pass
6 Rav1   23 M    60 Fail
> |
```

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The screenshot shows the RStudio interface with the following components:

- Top Bar:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Source Editor:** Untitled2.R containing R code for data manipulation and analysis.
- Console:** Displays the output of the R code, including the creation of a tibble and its contents.
- Environment Tab:** Shows the current environment variables.
- Files Tab:** Shows the file structure of the current project directory.

```
## Using mutate(): Add a new column 'Result' as Pass/Fail
36 students_with_result <- students %>%
37   mutate(Result = ifelse(Marks >= 75, "Pass", "Fail"))
38 print("Data with Result column: ")
39 print(students_with_result)
40
41
42
43
44
#d. Using group_by() and summarise (): Average Marks by Gender
45 avg_marks_by_gender <- students %>%
46   group_by(Gender) %>%
47   summarise(Average_Marks = mean(Marks))
48
49 print("Average Marks by Gender: ")
50 print(avg_marks_by_gender)
51
52
```

```
R 4.4.1 - ~/Ravi
> #c. Using mutate(): Add a new column 'Result' as Pass/Fail
> students_with_result <- students %>%
+   mutate(Result = ifelse(Marks >= 75, "Pass", "Fail"))
> print("Data with Result column: ")
> print(students_with_result)
> 
> print("Average Marks by Gender: ")
[1] "Average Marks by Gender: "
> print(avg_marks_by_gender)
# A tibble: 2 × 2
  Gender Average_Marks
  <chr>        <dbl>
1 F            90.7
2 M            75.3
```

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.RData	4.4 KB	Jul 31, 2025, 12:21 PM
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