

Laboratory – 2

Practical 03

RStudio interface showing a data frame 'df' with 918 observations and 12 variables. The console shows an error message: 'Error: object \'file_list\' not found'.

	Age	Sex	ChestPainType	RestingBP	Cholesterol	FastingBS	RestingECG	MaxHR	ExerciseAngina	Oldpeak
1	40	M	ATA	140	289	0	Normal	172	N	
2	49	F	NAP	160	180	0	Normal	156	N	
3	37	M	ATA	130	283	0	ST	98	N	
4	48	F	ASY	138	214	0	Normal	108	Y	
5	54	M	NAP	150	195	0	Normal	122	N	
6	39	M	NAP	120	339	0	Normal	170	N	
7	45	F	ATA	130	237	0	Normal	170	N	
8	54	M	ATA	110	208	0	Normal	142	N	
9	37	M	ASY	140	207	0	Normal	130	Y	
10	48	F	ATA	120	284	0	Normal	120	N	
11	37	F	NAP	130	211	0	Normal	142	N	
12	58	M	ATA	136	164	0	ST	99	Y	
13	39	M	ATA	120	204	0	Normal	145	N	
14	49	M	ASY	140	234	0	Normal	140	Y	
15	42	F	NAP	115	211	0	ST	137	N	

```

R 4.3.2 - D:\Computer Science\CS 2nd Year 2st Sem\SCS2211 Laboratory II\Practical - 03/
> for (file in file_list){df <- read.csv(file)}
Error: object 'file_list' not found
> file_list <- list.files("D:/Computer Science/CS 2nd Year 2st Sem/SCS2211 Laboratory II/Practical - 03/")
> for (file in file_list){df <- read.csv(file)}
> View(df)
> row_count <- 0
> for (row in 1:nrow(df)){
+   row_count <- row_count + 1
+ }
> print(paste("Number of rows in df:", row_count))
[1] "Number of rows in df: 918"
>

```

RStudio interface showing a script for calculating summary statistics for a specific column in the 'df' data frame. The console shows the output of the script.

```

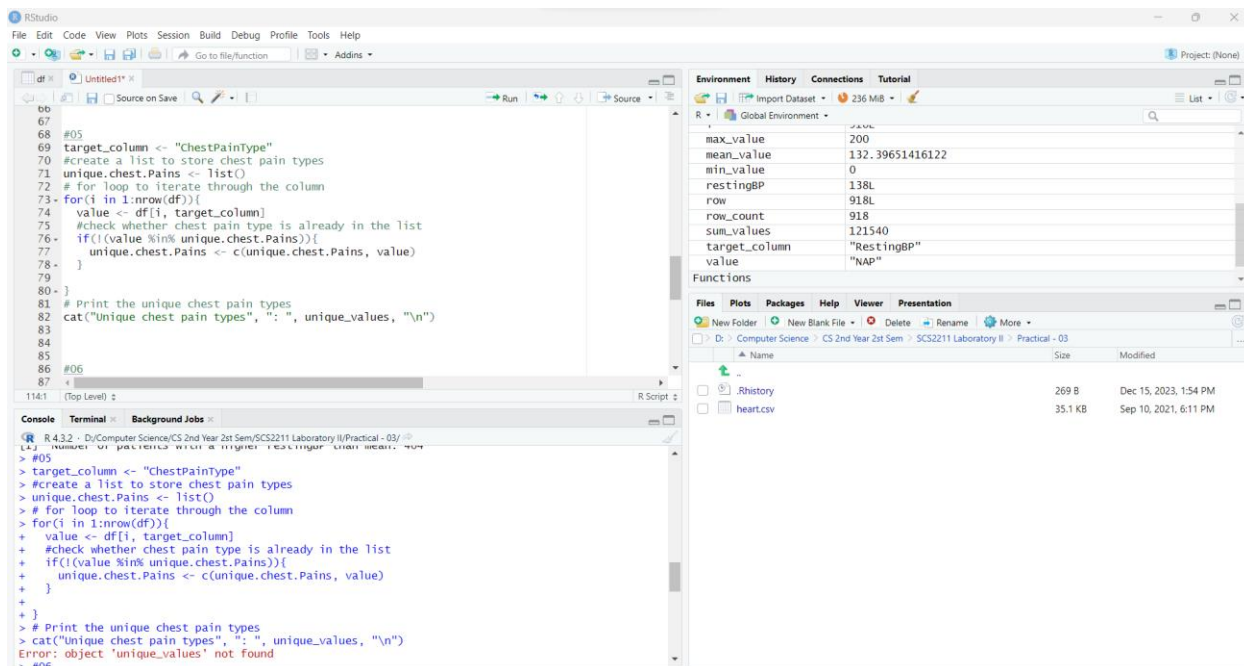
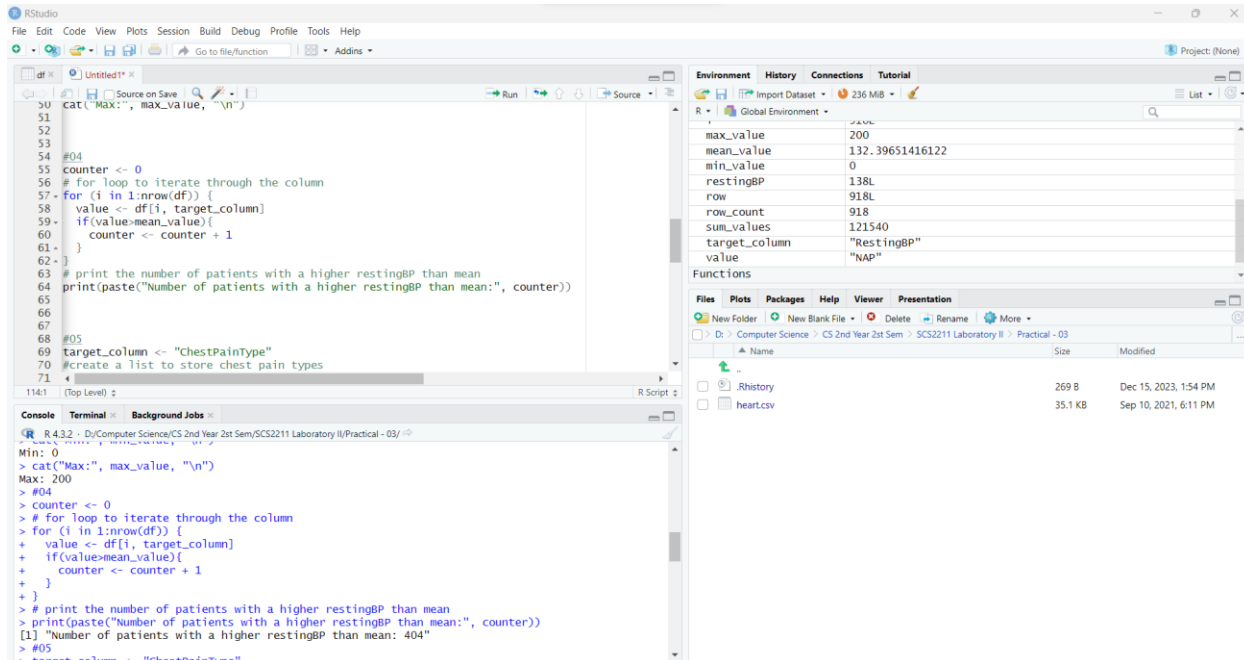
1 target_column <- "RestingBP"
2 sum_values <- 0
3 mean_value <- 0
4 min_value <- Inf
5 max_value <- -Inf
6
7- for (i in 1:nrow(df)){
8   value <- df[i, target_column]
9
10  sum_values <- sum_values + value
11  mean_value <- mean_value + value/nrow(df)
12  min_value <- min(min_value, value)
13  max_value <- max(max_value, value)
14- }
15
16 cat("Summary for column", target_column, ":\n")
17 cat("Sum:", sum_values, ":\n")
18 cat("Mean:", mean_value, ":\n")
19 cat("Min:", min_value, ":\n")
20 cat("Max:", max_value, ":\n")
21
22
23:1 (Top Level)

```

```

R 4.3.2 - D:\Computer Science\CS 2nd Year 2st Sem\SCS2211 Laboratory II\Practical - 03/
+ sum_values <- sum_values + value
+ mean_value <- mean_value + value/nrow(df)
+ min_value <- min(min_value, value)
+ max_value <- max(max_value, value)
+ }
> cat("Summary for column", target_column, ":\n")
Summary for column RestingBP :
> cat("Sum:", sum_values, ":\n")
Sum: 121540 :
> cat("Mean:", mean_value, ":\n")
Mean: 132.3965 :
> cat("Min:", min_value, ":\n")
Min: 0 :
> cat("Max:", max_value, ":\n")
Max: 200 :
>

```



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

```

83
84
85
86 #06
87 gender_column <- "Sex"
88 target_column <- "RestingBP"
89 age_column <- "Age"
90 # for loop to do 10 iterations through the column
91 for(i in 1:10){
92   gender <- df[i, gender_column]
93   restingBP <- df[i, target_column]
94   #checks whether current row is female and restingBP > 140
95   if(gender=="F" && restingBP>140){
96     print(df[i, age_column], "\n")
97   }
98 }
99
100
101
102
103 #07
104
105
106
107
108
109
110
111
112
113
114
115

```

The console shows the following error:

```

R 4.3.2 - D:\Computer Science\CS 2nd Year 2st Sem\SCS2211 Laboratory II\Practical - 03/
> # Print the unique chest pain types
> cat("Unique chest pain types", "\n", unique_values, "\n")
Error: object 'unique_values' not found
> #06
> gender_column <- "Sex"
> target_column <- "RestingBP"
> age_column <- "Age"
> # for loop to do 10 iterations through the column
> gender <- df[i, gender_column]
> restingBP <- df[i, target_column]
> #checks whether current row is female and restingBP > 140
> if(gender=="F" && restingBP>140){
+   print(df[i, age_column], "\n")
+ }
+ }
Error: unexpected '}' in "}"
> #07

```

The Environment pane shows the following variables:

Variable	Value
max_value	200
mean_value	132.39651416122
min_value	0
restingBP	138L
row	918L
row_count	918
sum_values	121540
target_column	"RestingBP"
value	"NAP"

The Files pane shows the following files:

Name	Size	Modified
.Rhistory	269 B	Dec 15, 2023, 1:54 PM
heart.csv	35.1 KB	Sep 10, 2021, 6:11 PM

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

```

93
94
95
96 print(df[i, age_column], "\n")
97 }
98 }
99
100
101
102
103 #07
104 PrintData <- function(row){
105   cat("Age of Patient: ", row$Age, "\n")
106   cat("Gender of Patient: ", row$Sex, "\n")
107   #check cholesterol level
108   chole_level <- ifelse(row$Cholesterol<200, "low", "high")
109   cat("Cholesterol: ", chole_level, "\n")
110 }
111
112 PrintData(df[1, ])
113 PrintData(df[2, ])
114 PrintData(df[3, ])
115

```

The console shows the following output:

```

R 4.3.2 - D:\Computer Science\CS 2nd Year 2st Sem\SCS2211 Laboratory II\Practical - 03/
> # Print the unique chest pain types
+ cat("Unique chest pain types", "\n", unique_values, "\n")
+ }
+ }
> #06
> gender_column <- "Sex"
> target_column <- "RestingBP"
> age_column <- "Age"
> # for loop to do 10 iterations through the column
> gender <- df[i, gender_column]
> restingBP <- df[i, target_column]
> #checks whether current row is female and restingBP > 140
> if(gender=="F" && restingBP>140){
+   print(df[i, age_column], "\n")
+ }
+ }
> #07
> PrintData(df[1, ])
Age of Patient: 40
Gender of Patient: M
Cholesterol: high
> PrintData(df[2, ])
Age of Patient: 49
Gender of Patient: F
Cholesterol: low
> PrintData(df[3, ])
Age of Patient: 37
Gender of Patient: M
Cholesterol: high
>

```

The Environment pane shows the following variables:

Variable	Value
max_value	200
mean_value	132.39651416122
min_value	0
restingBP	138L
row	918L
row_count	918
sum_values	121540
target_column	"RestingBP"
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