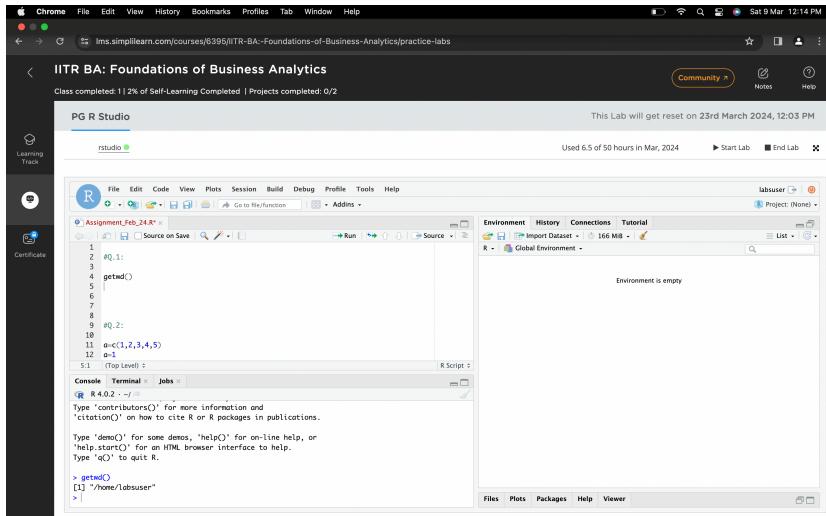


#Q.1:

```
getwd()
```

```
> getwd()  
[1] "/home/labsuser"
```



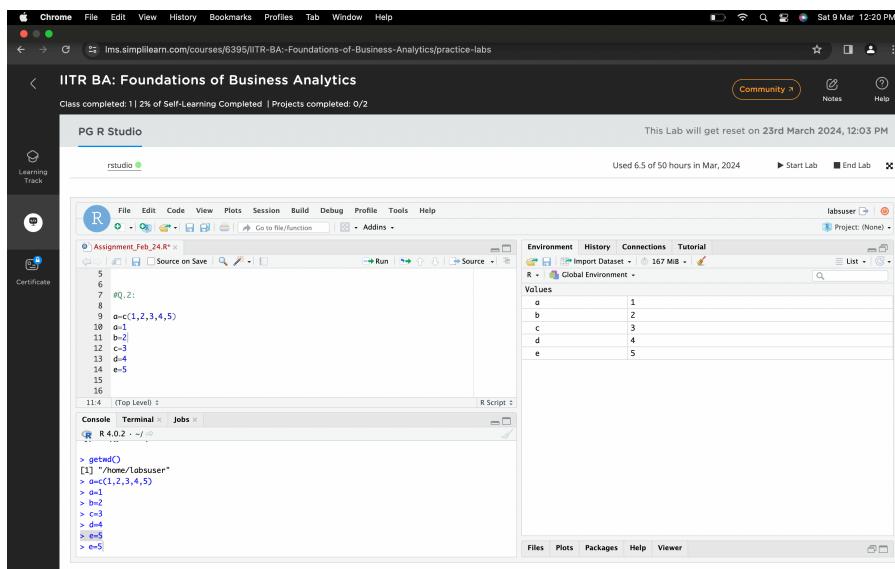
The screenshot shows a browser window for 'IITR BA: Foundations of Business Analytics' on 'PG R Studio'. The R console output is displayed in the center, showing the command 'getwd()' and its result '[1] "/home/labsuser"'. The environment pane on the right shows 'Environment is empty'. The top bar indicates the lab will reset on 23rd March 2024, 12:03 PM.

```
getwd()
[1] "/home/labsuser"
```



```
#Q.2:  
a=c(1,2,3,4,5)  
a=1  
b=2  
c=3  
d=4  
e=5
```

```
> a=c(1,2,3,4,5)  
> a=1  
> b=2  
> c=3  
> d=4  
> e=5
```



#Q.3:

```
sum=a+b  
log=log(b)  
sub=c-d
```

```
> sum=a+b  
> log=log(b)  
> sub=c-d
```

The screenshot shows a browser window for 'IITR BA: Foundations of Business Analytics' practice labs. The main area is 'PG R Studio'. On the left, there's a 'Learning Track' sidebar with 'Assignment_Feb_24.R' selected. The RStudio interface includes an 'Environment' tab showing variables like a=1, b=2, c=3, d=4, e=5, log=0.693147180559945, sub=-1, and sum=3. The 'Console' tab shows the R code being run, and the 'Files' tab shows the file 'Assignment_Feb_24.R'.

```
16 #Q.3:  
17  
18 sum=a+b  
19 log=log(b)  
20 sub=c-d  
21  
22  
23  
24  
25  
26  
27  
16.1 (Top Level) :  
R 4.0.2 · ~/  
> a=c(1,2,3,4,5)  
> a<-  
> b=2  
> c=3  
> d=4  
> e=5  
> sum=a+b  
> log=log(b)  
> sub=c-d  
> e=5
```

#Q.4:

```
chr="Mumbai"  
class(chr)
```

```
logical=TRUE  
class(logical)
```

```
F=factor(c(1,1,1,2,2,3,4,4))  
class(F)
```

```
> chr="Mumbai"  
> logical=TRUE  
> class(logical)  
[1] "logical"  
> F=factor(c(1,1,1,2,2,3,4,4))  
> class(F)  
[1] "factor"
```

The screenshot shows the PG R Studio interface within a web browser window. The top navigation bar includes 'Practice Labs | IITR BA: Foundations of Business Analytics' and a URL 'lms.simplilearn.com/courses/6395/IITR-BA--Foundations-of-Business-Analytics/practice-labs'. The main area is titled 'IITR BA: Foundations of Business Analytics' with a progress message 'Class completed: 1 | 2% of Self-Learning Completed | Projects completed: 0/2'. A banner at the top right says 'This Lab will get reset on 23rd March 2024, 12:03 PM'. On the left, there's a sidebar with 'Learning Track' and 'Certificate' sections. The central workspace has an 'rstudio' tab open. The 'Assignment_Feb_24.R' script contains the R code from the previous text block. The 'Environment' pane on the right shows the following variable values:

Values	Value
a	1
b	2
c	3
chr	"Mumbai"
d	4
e	5
F	Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4
log	0.693147180559945
logical	TRUE
sub	-1
sum	3

The 'Console' pane at the bottom shows the R session output, which matches the R code above.

#Q.5;

```
D=factor(c(3,3,3,4))
summary(D)
```

```
> D=factor(c(3,3,3,4))
> summary(D)
3 4
3 1
```

The screenshot shows the PG R Studio interface within a web browser window titled "IITR BA: Foundations of Business Analytics". The browser URL is "lms.simplilearn.com/courses/6395/IITR-BA-Foundations-of-Business-Analytics/practice-labs". The RStudio interface includes a sidebar with "Learning Track" and "Certificate" sections. The main area has tabs for "rstudio" and "Assignment_Feb_24.R*". The "Console" tab displays the R code and its output:

```
40
41 "#Q.5;
42
43 D=factor(c(3,3,3,4))
44 summary(D)
45
46
47
48
49
50
51
52
53
45:1 (Top Level) <--> R Script
```

```
R 4.0.2 - ~/ ~
> F=factor(c(1,1,1,2,2,3,4,4))
> class(F)
[1] "factor"
> D=factor(c(3,3,3,4))
> summary(D)
3 4
3 1
> e=5
```

The "Environment" tab shows the following variable values:

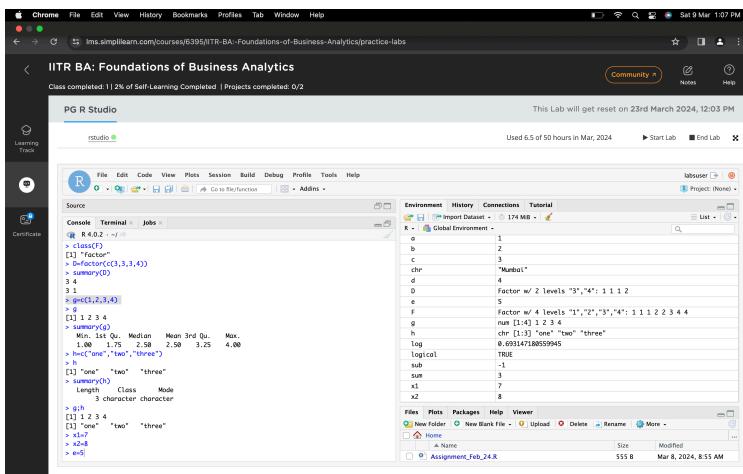
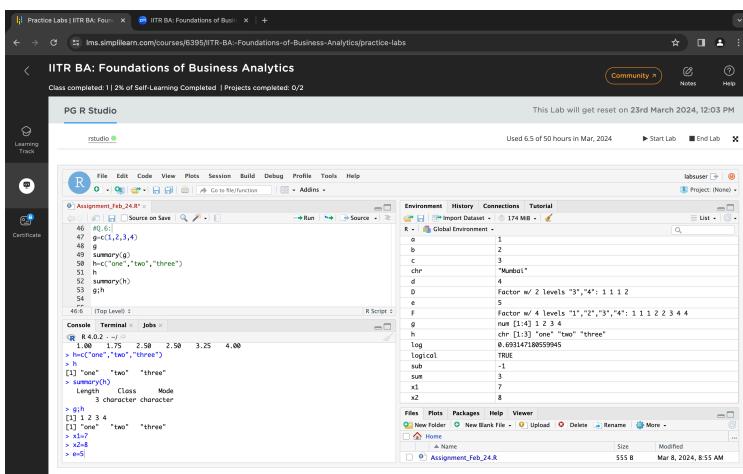
Values	Value
a	1
b	2
c	3
chr	"Mumbai"
d	4
D	Factor w/ 2 levels "3","4": 1 1 1 2
e	5
F	Factor w/ 4 levels "1","2","3","4": 1 1 2 2 3 4 4
log	0.693147180559945
logical	TRUE
sub	-1
sum	3

The "Files" tab shows a single file named "Assignment_Feb_24.R" with a size of 555 B and a modified date of Mar 8, 2024, 8:55 AM.

#Q.6:

```
g=c(1,2,3,4)
g
summary(g)
h=c("one","two","three")
h
summary(h)
g;h

> g=c(1,2,3,4)
> g
[1] 1 2 3 4
> summary(g)
   Min. 1st Qu. Median      Mean 3rd Qu.      Max.
1.00    1.75    2.50    2.50    3.25    4.00
> h=c("one","two","three")
> h
[1] "one"   "two"   "three"
> summary(h)
  Length Class Mode
3 character character
> g;h
[1] 1 2 3 4
[1] "one"   "two"   "three"
```



```
#Q.7:  
#Arithmatic Operations:  
x1=7  
x2=8  
x3=x1+x2  
x3  
x4=x1-x2  
x4  
x5=x1*x2  
x5  
x6=x1/x2  
x6  
#^:shift+6
```

```
x7=x1^x2  
x7
```

```
7^8  
7*7*7*7*7*7*7
```

```
#Use all relational operators on x1 & x2  
# <,>,<=,>=,==,! =
```

```
y1=3  
y2=5
```

```
y1<y2
```

```
y1>y2
```

```
y1<=3
```

```
y1>=3
```

```
y1<3
```

```
y1>3
```

```
y1==y2  
y2==5  
y1!=y2
```

```
e1=c("Abhishek","Mumbai","Analyst")  
e1  
summary(e1)
```

PG R Studio

This Lab will get reset on 23rd March 2024, 12:03 PM

Used 6.5 of 50 hours in Mar, 2024

Start Lab End Lab

R Script: Assignment_Feb_24.R

```

57 #@.7:
58 #Arithmetic Operations:
59 x<-7
60 x<-8
61 x<-x1*x2
62 x3
63 x4=x1*x2
64 x4
65 x5=x1*x2
58:1 (Top Level) :

```

Console Terminal Jobs

```

> x<-7
> x<-8
> x<-x1*x2
> x3
[1] 15
> x4=x1*x2
> x4
[1] -1
> x5=x1*x2
> x5
[1] 56
> x6=x1*x2
> e=5

```

Environment History Connections Tutorial

R - Global Environment

d	4
D	Factor w/ 2 levels "3","4": 1 1 1 2
e	5
F	Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4
g	num [1:4] 1 2 3 4
h	chr [1:3] "one" "two" "three"
log	0.693147180559945
logical	TRUE
sub	-1
sum	3
x1	7
x2	8
x3	15
x4	-1
x5	56
x6	0.875

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Assignment_Feb_24.R

Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

PG R Studio

This Lab will get reset on 23rd March 2024, 12:03 PM

Used 6.5 of 50 hours in Mar, 2024

Start Lab End Lab

R Script: Assignment_Feb_24.R

```

62 x3
63 x4=x1*x2
64 x4
65 x5=x1*x2
66 x5
67 x6=x1*x2
68 x6
69 #>shift+6
70
71 x7=x1*x2
72 x7
73
74 ?*?
75 ?*?+?*?+?*?+?*?
74:1 (Top Level) :

```

Console Terminal Jobs

```

[1] 56
> x<-x1*x2
> x6
[1] 0.875
> x7=x1*x2
> x7
[1] 5764801
> e=5

```

Environment History Connections Tutorial

R - Global Environment

D	Factor w/ 2 levels "3","4": 1 1 1 2
e	5
F	Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4
g	num [1:4] 1 2 3 4
h	chr [1:3] "one" "two" "three"
log	0.693147180559945
logical	TRUE
sub	-1
sum	3
x1	7
x2	8
x3	15
x4	-1
x5	56
x6	0.875
x7	5764801

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Assignment_Feb_24.R

Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

PG R Studio

This Lab will get reset on 23rd March 2024, 12:03 PM

Used 6.5 of 50 hours in Mar, 2024

Start Lab End Lab

R Script: Assignment_Feb_24.R

```

67 x6=x1*x2
68 x6
69 #>shift+6
70
71 x7=x1*x2
72 x7
73
74 ?*?
75 ?*?+?*?+?*?+?*?
76
77 #Use all relational operators on x1 & x2
78 #<,>,<=,>=,==,!=
79
80 y1=3
77:1 (Top Level) :

```

Console Terminal Jobs

```

> x7=x1*x2
> x7
[1] 5764801
> y1=3
[1] 5764801
> ?*?+?*?+?*?+?*?
[1] 5764801
> e=5

```

Environment History Connections Tutorial

R - Global Environment

D	Factor w/ 2 levels "3","4": 1 1 1 2
e	5
F	Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4
g	num [1:4] 1 2 3 4
h	chr [1:3] "one" "two" "three"
log	0.693147180559945
logical	TRUE
sub	-1
sum	3
x1	7
x2	8
x3	15
x4	-1
x5	56
x6	0.875
x7	5764801

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Assignment_Feb_24.R

Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

PG R Studio

This Lab will get reset on 23rd March 2024, 12:03 PM

Used 6.5 of 50 hours in Mar, 2024

Start Lab End Lab

R Studio

Assignment_Feb_24.R

```
81 y2=5
82
83 y1=y2
84
85 y1=y2
86
87 y1<=3
88
89 y1<=3
90
91 y1<=3
92
93 y1<=3
94
95 y1==y2
96 y2=5
97
98 y1!=y2
99
96:1 (Top Level) : R Script
```

Console Terminal Jobs

R 4.0.2 - -/

```
[1] 5764801
> y1<=3
> y2=5
> y1<=3
[1] TRUE
> y1>y2
[1] FALSE
> y1<=3
[1] TRUE
> e=5
```

Environment History Connections Tutorial

Global Environment

F Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4
g num [1:4] 1 2 3 4
h chr [1:3] "one" "two" "three"
log 0.693147180559945
logical TRUE
sub -1
sum 3
x1 7
x2 8
x3 15
x4 -1
x5 56
x6 0.875
x7 5764801
y1 3
y2 5

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Name Size Modified

Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

PG R Studio

This Lab will get reset on 23rd March 2024, 12:03 PM

Used 6.5 of 50 hours in Mar, 2024

Start Lab End Lab

R Studio

Assignment_Feb_24.R

```
90 y1<=3
91
92 y1<=3
93
94
95 y1==y2
96 y2=5
97
98 y1!=y2
99
96:1 (Top Level) : R Script
```

Console Terminal Jobs

R 4.0.2 - -/

```
[1] FALSE
> y1<=3
[1] TRUE
> y1<=3
[1] TRUE
> y1<=3
[1] TRUE
> y1<=3
[1] FALSE
> y1<=3
[1] FALSE
> y1>y2
[1] FALSE
> e=5
```

Environment History Connections Tutorial

Global Environment

F Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4
g num [1:4] 1 2 3 4
h chr [1:3] "one" "two" "three"
log 0.693147180559945
logical TRUE
sub -1
sum 3
x1 7
x2 8
x3 15
x4 -1
x5 56
x6 0.875
x7 5764801
y1 3
y2 5

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Name Size Modified

Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

PG R Studio

This Lab will get reset on 23rd March 2024, 12:03 PM

Used 6.5 of 50 hours in Mar, 2024

Start Lab End Lab

R Studio

Assignment_Feb_24.R

```
96 y2=5
97
98 y1==y2
99
100
101 e1=c("Abhishek","Mumbai","Analyst")
102 e1
103 e1
104 summary(e1)
105
96:1 (Top Level) : R Script
```

Console Terminal Jobs

R 4.0.2 - -/

```
[1] FALSE
> y2=5
[1] TRUE
> y1<=3
[1] TRUE
> e1=c("Abhishek","Mumbai","Analyst")
> e1
[1] "Abhishek" "Mumbai" "Analyst"
> summary(e1)
Length Class Mode
3 character character
```

Environment History Connections Tutorial

Global Environment

e1 chr [1:3] "Abhishek" "Mumbai" "Analyst"
F Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4
g num [1:4] 1 2 3 4
h chr [1:3] "one" "two" "three"
log 0.693147180559945
logical TRUE
sub -1
sum 3
x1 7
x2 8
x3 15
x4 -1
x5 56
x6 0.875
x7 5764801
y1 3

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Name Size Modified

Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

#Q.8:

```
v1=5
v1[2:6]=c(10,20,30,40,50)
v1

v2=c(10,20,30,40,50,60,70)
v2

v2[8]=100
v2

v3=c(7,14,21,35,42,49)
v3

v3=c(c(7,14,21),28,c(35,42,49))
v3

head(v3,-1) #deleting old element
```

```
> v1=5
> v1[2:6]=c(10,20,30,40,50)
> v1
[1] 5 10 20 30 40 50
> v2=c(10,20,30,40,50,60,70)
> v2
[1] 10 20 30 40 50 60 70
> v2[8]=100
> v2
[1] 10 20 30 40 50 60 70 100
> v3=c(7,14,21,35,42,49)
> v3
[1] 7 14 21 35 42 49
> v3=c(c(7,14,21),28,c(35,42,49))
> v3
[1] 7 14 21 28 35 42 49
> head(v3,-1)
[1] 7 14 21 28 35 42
```

IITR BA: Foundations of Business Analytics

Class completed: 1 | 2% of Self-Learning Completed | Projects completed: 0/2

This Lab will get reset on 24th March 2024, 3:59 AM

PG R Studio

rstudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Assignment_Feb_24.R * df * dataframe1 * R_2 (1).R

Run Source

112 v1<-
113
114 v1[2:6]<-c(10,20,30,40,50)
115 v1
116 v1
117
118 v2<-c(10,20,30,40,50,60,70)
119 v2
120
121 v2[8]-100
122 v2
123
124 (Top Level) :

R Script

Console Terminal Jobs

R 4.0.2 - - /

Type 'demo()' for some demos, 'help()' for on-line help, or 'help.start()' for an HTML browser interface to help. Type 'q()' to quit R.

```
> v1<-  
> v1[2:6]<-c(10,20,30,40,50)  
> v1  
[1] 5 10 20 30 40 50  
> v2<-c(10,20,30,40,50,60,70)  
> v2
```

Values	
v1	num [1:6] 5 10 20 30 40 50
v2	num [1:8] 10 20 30 40 50 60 70 100
v3	num [1:7] 7 14 21 28 35 42 49

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

IITR BA: Foundations of Business Analytics

Class completed: 1 | 2% of Self-Learning Completed | Projects completed: 0/2

This Lab will get reset on 24th March 2024, 3:59 AM

PG R Studio

rstudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Assignment_Feb_24.R * df * dataframe1 * R_2 (1).R

Run Source

118 v2<-c(10,20,30,40,50,60,70)
119 v2
120
121 v2[8]-100
122 v2
123
124 (Top Level) :

R Script

Console Terminal Jobs

R 4.0.2 - - /

Type 'demo()' for some demos, 'help()' for on-line help, or 'help.start()' for an HTML browser interface to help. Type 'q()' to quit R.

```
> v1<-  
> v1[2:6]<-c(10,20,30,40,50)  
> v1  
[1] 5 10 20 30 40 50  
> v2<-c(10,20,30,40,50,60,70)  
> v2  
[1] 10 20 30 40 50 60 70  
> v2[8]-100  
> v2  
[1] 10 20 30 40 50 60 70 100  
> v3<-c(7,14,21,35,42,49)
```

Values	
v1	num [1:6] 5 10 20 30 40 50
v2	num [1:8] 10 20 30 40 50 60 70 100
v3	num [1:7] 7 14 21 28 35 42 49

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

IITR BA: Foundations of Business Analytics

Class completed: 1 | 2% of Self-Learning Completed | Projects completed: 0/2

This Lab will get reset on 24th March 2024, 3:59 AM

PG R Studio

rstudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Assignment_Feb_24.R * df * dataframe1 * R_2 (1).R

Run Source

121 v2[8]-100
122 v2
123
124 v3<-c(7,14,21,35,42,49)
125 v3
126
127 v3<-c(7,14,21,28,c(35,42,49))
128 v3
129
130 head(v3,-1) #deleting old element
131
132
133
121.1 (Top Level) :

R Script

Console Terminal Jobs

R 4.0.2 - - /

> v3<-c(7,14,21,35,42,49)
> v3
[1] 7 14 21 35 42 49
> v3<-c(7,14,21,28,c(35,42,49))
> v3
[1] 7 14 21 28 35 42 49
> head(v3,-1) #deleting old element
[1] 7 14 21 28 35 42

Values	
v1	num [1:6] 5 10 20 30 40 50
v2	num [1:8] 10 20 30 40 50 60 70 100
v3	num [1:7] 7 14 21 28 35 42 49

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

#Q.9:

```
p=c(12,2,3,4,8,9,14)
p
print(sort(p))

print(sort(p,decreasing = TRUE))
```

```
> p=c(12,2,3,4,8,9,14)
> p
[1] 12  2   3   4   8   9  14
> print(sort(p))
[1]  2   3   4   8   9  12 14
> print(sort(p,decreasing = TRUE))
[1] 14 12  9   8   4   3   2
```

```
k=c("cc","dd","aa","ff","ee")
k
print(sort(k))
```

```
> k=c("cc","dd","aa","ff","ee")
> k
[1] "cc" "dd" "aa" "ff" "ee"
> print(sort(k))
[1] "aa" "cc" "dd" "ee" "ff"
```

The screenshot shows the PG R Studio interface within a web browser window. The title bar indicates it's a Practice Lab for IITR BA: Foundations of Business Analytics. The main area has a dark theme with several panes:

- R Script:** Displays the R code for Question 9, including the assignment of values to p, sorting p, and then sorting p in decreasing order.
- Environment:** Shows the global environment with variables p, v1, v2, and v3 defined. The value of p is [1:7] 12 2 3 4 8 9 14. The value of v1 is [1:6] 5 10 20 30 40 50. The value of v2 is [1:8] 10 20 30 40 50 60 70 100. The value of v3 is [1:7] 7 14 21 28 35 42 49.
- Console:** Displays the R session history, showing the execution of the R code and its output.
- File Explorer:** Shows a single file named Assignment_Feb_24.R.

Practice Labs | IITR BA: Found... x IITR BA: Foundations of Busin... x +

lms.simplylearn.com/courses/6395/IITR-BA-Foundations-of-Business-Analytics/practice-labs

IITR BA: Foundations of Business Analytics

Class completed: 1 | 2% of Self-Learning Completed | Projects completed: 0/2

This Lab will reset on 24th March 2024, 3:59 AM

PG R Studio

rstudio ●

File Edit Code View Plots Session Build Debug Profile Tools Help

Used 10.7 of 50 hours in Mar, 2024 ► Start Lab ■ End Lab

RStudio User Project: (None)

Assignment_Feb_24.R* df dataframe 1* R_2 (1).R

```
138 print(sort(p,decreasing = TRUE))
139 
140 k<-c("aa","cd","ef")
141 k
142 print(sort(k))
143 
144 
145 
146 k<-c("cc","dd","aa","ff","ee")
147 k
148 print(sort(k))
149 
150 
151 
152 
153
```

151:1 (Top Level) R Script

Console Terminal Jobs

```
R 4.0.2 - -> 
> k<-c("cc","dd","aa","ff","ee")
> k
[1] "cc" "dd" "aa" "ff" "ee"
> print(sort(k))
[1] "aa" "cc" "dd" "ee" "ff"
>
```

Environment History Connections Tutorial

Values

k	chr [1:5] "cc" "dd" "aa" "ff" "ee"
p	num [1:7] 12 2 3 4 8 9 14
v1	num [1:6] 5 10 20 30 40 50
v2	num [1:8] 10 20 30 40 50 60 70 100
v3	num [1:7] 7 14 21 28 35 42 49

Import Dataset 266 MB

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Name 555 B Mar 8, 2024, 8:55 AM Assignment_Feb_24.R

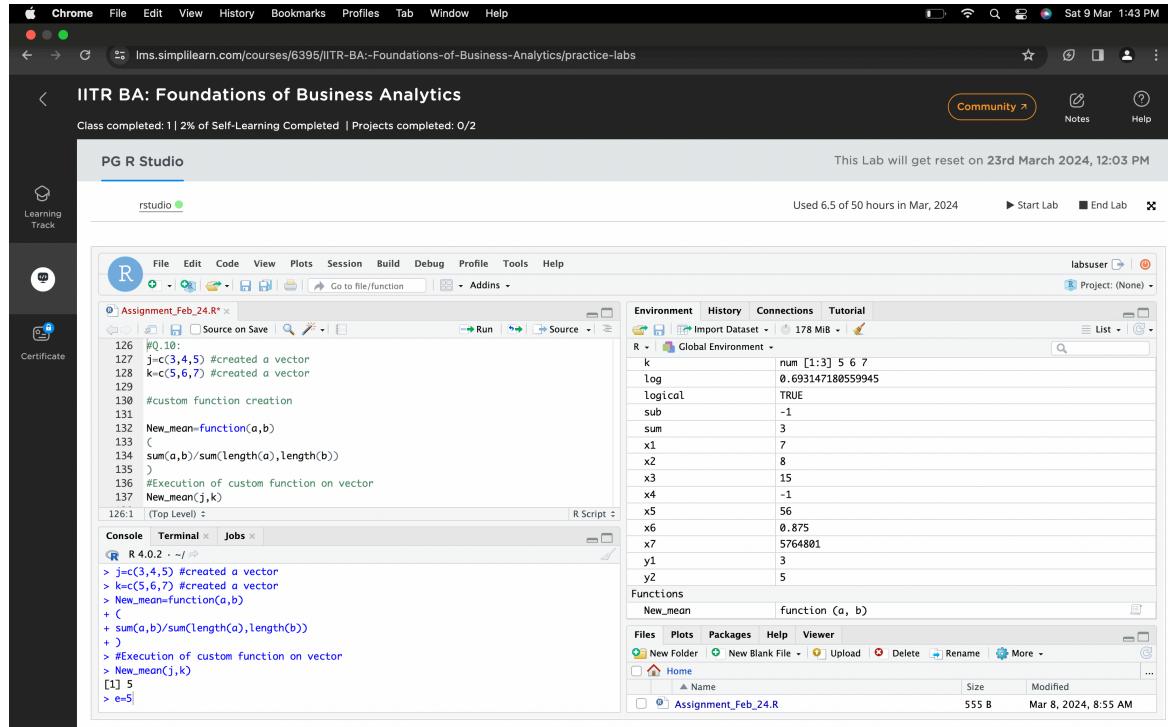
#Q.10:

```
j=c(3,4,5) #created a vector  
k=c(5,6,7) #created a vector
```

```
#custom function creation
```

```
New_mean=function(a,b)  
(  
sum(a,b)/sum(length(a),length(b))  
)  
#Execution of custom function on vector  
New_mean(j,k)
```

```
> j=c(3,4,5) #created a vector  
> k=c(5,6,7) #created a vector  
> New_mean=function(a,b)  
+ (  
+ sum(a,b)/sum(length(a),length(b))  
+ )  
> #Execution of custom function on vector  
> New_mean(j,k)  
[1] 5
```



#Q.11:Created a matrix with the combination of multiple variables

```
m1=matrix(c(1,2,3,4,5,6,7,8),nrow=2,ncol=4)  
m1
```

```
m1[2,2]  
m1[8]
```

```
m1[2,]  
m1[,3]  
m1
```

```
m2=matrix(c(1,2,3,4,5,6,7,8),nrow=2,ncol=4,byrow = T)  
m2  
m2[4]
```

```
m2[c(1,5)]
```

```
m2[4]=5  
m2
```

```
m2[c(1,3)]=c(100,200)  
m2
```

[Row,Column]

```
m1
```

```
m1[2,1]  
m1[6]
```

```
m1[c(2,4,6)]
```

```
m2  
m2[2]  
m2[2,]  
m2[,2]
```

```
> m1=matrix(c(1,2,3,4,5,6,7,8),nrow=2,ncol=4)  
> m1  
     [,1] [,2] [,3] [,4]  
[1,]    1    3    5    7  
[2,]    2    4    6    8  
> m1[2,2]
```

```

[1] 4
> m1[8]
[1] 8
> m1[2,]
[1] 2 4 6 8
> m1[,3]
[1] 5 6
> m1
     [,1] [,2] [,3] [,4]
[1,]    1    3    5    7
[2,]    2    4    6    8
> m2=matrix(c(1,2,3,4,5,6,7,8),nrow=2,ncol=4,byrow = T)
> m2
     [,1] [,2] [,3] [,4]
[1,]    1    2    3    4
[2,]    5    6    7    8
> m2[4]
[1] 6
> m2[c(1,5)]
[1] 1 3
> m2[4]=5
> m2
     [,1] [,2] [,3] [,4]
[1,]    1    2    3    4
[2,]    5    5    7    8
> m2[c(1,3)]=c(100,200)
> m2
     [,1] [,2] [,3] [,4]
[1,]  100  200    3    4
[2,]    5    5    7    8
> m1
     [,1] [,2] [,3] [,4]
[1,]    1    3    5    7
[2,]    2    4    6    8
> m1[2,1]
[1] 2
> m1[6]
[1] 6
> m1[c(2,4,6)]
[1] 2 4 6
> m2
     [,1] [,2] [,3] [,4]
[1,]  100  200    3    4
[2,]    5    5    7    8
> m2[2]

```

```
[1] 5
> m2[2,]
[1] 5 5 7 8
> m2[,2]
[1] 200    5
```

This screenshot shows the PG R Studio interface within a web browser window. The title bar indicates the session is titled 'Assignment_Feb_24.R' and the date is Saturday, March 9, 2024, at 1:57 PM. The R console window displays the following R code and its output:

```
R 4.0.2 - ~/r
> m1<-matrix(c(1,2,3,4,5,6,7,8),nrow=2,ncol=4)
> m1
[1] 5
> m1<-matrix(c(1,2,3,4,5,6,7,8),nrow=2,ncol=4)
> m1
[1] 1 3 5 7
[2] 2 4 6 8
> m1[2,2]
[1] 4
> m1[8]
[1] 8
> |
```

The environment pane shows the following objects:

- Data**: m1 (num [1:2, 1:4] 1 2 3 4 5 6 7 8)
- Values**: a (1), b (2), c (3), chr ("Mumbai"), d (4), D (Factor w/ 2 levels "3","4": 1 1 1 2), e (5), e1 (chr [1:3] "Abhishek" "Mumbai" "Analyst"), F (Factor w/ 4 levels "1","2","3","4": 1 1 2 2 3 4 4), g (num [1:4] 1 2 3 4), h (chr [1:3] "one" "two" "three"), j (num [1:3] 3 4 5), k (num [1:3] 5 6 7)
- Files**: Assignment_Feb_24.R

This screenshot shows the PG R Studio interface within a web browser window. The title bar indicates the session is titled 'Assignment_Feb_24.R' and the date is Saturday, March 9, 2024, at 1:59 PM. The R console window displays the following R code and its output:

```
R 4.0.2 - ~/r
> m1<-
[1] 4
> m1[8]
[1] 8
> m1[2,]
[1] 2 4 6 8
> m1[,3]
[1] 5 6
> m1
[1] 1 3 5 7
[2] 2 4 6 8
> |
```

The environment pane shows the following objects:

- Data**: m1 (num [1:2, 1:4] 1 2 3 4 5 6 7 8)
- Values**: a (1), b (2), c (3), chr ("Mumbai"), d (4), D (Factor w/ 2 levels "3","4": 1 1 1 2), e (5), e1 (chr [1:3] "Abhishek" "Mumbai" "Analyst"), F (Factor w/ 4 levels "1","2","3","4": 1 1 2 2 3 4 4), g (num [1:4] 1 2 3 4), h (chr [1:3] "one" "two" "three"), j (num [1:3] 3 4 5), k (num [1:3] 5 6 7)
- Files**: Assignment_Feb_24.R

PG R Studio

This Lab will get reset on 23rd March 2024, 12:03 PM

Used 6.5 of 50 hours in Mar, 2024

R Script

```
Assignment_Feb_24.R*  
152 m2<-matrix(c(1,2,3,4,5,6,7,8),nrow=2,ncol=4,byrow = T)  
153 m2  
154 m2[4]  
155 m2[c(1,5)]  
157  
158 m2[4]=5  
159 m2  
160  
161 m2[c(1,3)]=c(100,200)  
158:1 (Top Level) :  
R 4.0.2 - ./  
[1,] 1 3 5 7  
[2,] 2 4 6 8  
> m2<-matrix(c(1,2,3,4,5,6,7,8),nrow=2,ncol=4,byrow = T)  
> m2  
[1,] 1 2 3 4  
[2,] 5 6 7 8  
> m2[4]  
[1] 6  
> m2[c(1,5)]  
[1] 1 3  
>
```

Environment History Connections Tutorial

R Global Environment

Data

m1	num [1:2, 1:4] 1 2 3 4 5 6 7 8
m2	num [1:2, 1:4] 1 5 2 6 3 7 4 8

Values

a	1
b	2
c	3
chr	"Mumbai"
d	4
D	Factor w/ 2 levels "3","4": 1 1 1 2
e	5
e1	chr [1:3] "Abhishek" "Mumbai" "Analyst"
F	Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4
g	num [1:4] 1 2 3 4
h	chr [1:3] "one" "two" "three"
j	num [1:3] 3 4 5

Console Terminal Jobs

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Name Size Modified

Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

PG R Studio

This Lab will get reset on 23rd March 2024, 12:03 PM

Used 6.5 of 50 hours in Mar, 2024

R Script

```
Assignment_Feb_24.R*  
156 m2<c(1,5)  
157  
158 m2[4]=5  
159 m2  
160  
161 m2[c(1,3)]=c(100,200)  
162 m2  
163  
164 #[Row,Column]  
165  
166 m1  
167  
168 m1[2,1]  
169 m1[6]  
170  
171 m1[c(2,4,6)]  
172  
161.22 (Top Level) :  
R 4.0.2 - ./  
[1,] 2 4 6 8  
> m2<-matrix(c(1,2,3,4,5,6,7,8),nrow=2,ncol=4,byrow = T)  
> m2  
[1,] 1 2 3 4  
[2,] 5 6 7 8  
> m2[4]  
[1] 6  
> m2[c(1,5)]  
[1] 1 3  
> m2[4]=5  
> m2  
[1,] 1 2 3 4  
[2,] 5 6 7 8  
>
```

Environment History Connections Tutorial

R Global Environment

Data

m1	num [1:2, 1:4] 1 2 3 4 5 6 7 8
m2	num [1:2, 1:4] 1 5 2 6 3 7 4 8

Values

a	1
b	2
c	3
chr	"Mumbai"
d	4
D	Factor w/ 2 levels "3","4": 1 1 1 2
e	5
e1	chr [1:3] "Abhishek" "Mumbai" "Analyst"
F	Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4
g	num [1:4] 1 2 3 4
h	chr [1:3] "one" "two" "three"
j	num [1:3] 3 4 5

Console Terminal Jobs

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Name Size Modified

Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

PG R Studio

This Lab will get reset on 23rd March 2024, 12:03 PM

Used 6.5 of 50 hours in Mar, 2024

R Script

```
Assignment_Feb_24.R*  
163  
164 #[Row,Column]  
165  
166 m1  
167  
168 m1[2,1]  
169 m1[6]  
170  
171 m1[c(2,4,6)]  
172  
169.6 (Top Level) :  
R 4.0.2 - ./  
[1,] 100 200 3 4  
[2,] 5 5 7 8  
> m1  
[1,] 1 2 3 5 7  
[2,] 2 4 6 8  
> m1[2,1]  
[1] 2  
>
```

Environment History Connections Tutorial

R Global Environment

Data

m1	num [1:2, 1:4] 1 2 3 4 5 6 7 8
m2	num [1:2, 1:4] 100 200 5 3 7 4 8

Values

a	1
b	2
c	3
chr	"Mumbai"
d	4
D	Factor w/ 2 levels "3","4": 1 1 1 2
e	5
e1	chr [1:3] "Abhishek" "Mumbai" "Analyst"
F	Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4
g	num [1:4] 1 2 3 4
h	chr [1:3] "one" "two" "three"
j	num [1:3] 3 4 5

Console Terminal Jobs

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Name Size Modified

Assignment_Feb_24.R 555 B Mar 8, 2024, 8:55 AM

Practice Labs | IITR BA | Found... X IITR BA: Foundations of Busin... X +

lms.simplilearn.com/courses/6395/IITR-BA- Foundations-of-Business-Analytics/practice-labs

IITR BA: Foundations of Business Analytics

Class completed: 1 | 2% of Self-Learning Completed | Projects completed: 0/2

PG R Studio

This Lab will get reset on 23rd March 2024, 12:03 PM

Used 6.5 of 50 hours in Mar, 2024 ► Start Lab ■ End Lab X

Community Notes Help

Learning Track Certificate

RStudio

Assignment_Feb_24.R*

```
169 m1[6]
170 
171 m1[c(2,4,6)]
172 
173 m2
174 m2[2]
175 m2[,2]
176 m2[,2]
177 
178 
179:1 (Top Level) R Script
```

Console Terminal Jobs

```
R 4.0.2 · ~/ ...
[1] 2 4 6
> m2
[1,] 100 200 3 4
[1,] 100 200 3 4
[2,] 5 5 7 8
> m2[2]
[1] 5
> m2[2]
[1] 5 5 7 8
> m2[,2]
[1] 200 5
> |
```

Environment History Connections Tutorial

Import Dataset 182 MB

Data

m1	num [1:2, 1:4] 1 2 3 4 5 6 7 8
m2	num [1:2, 1:4] 100 200 5 3 7 4 8

Values

a	1
b	2
c	3

chr

"Mumbai"

d

4

D

Factor w/ 2 levels "3","4": 1 1 1 2

e

5

e1

chr [1:3] "Abhishek" "Mumbai" "Analyst"

F

Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4

g

num [1:4] 1 2 3 4

h

chr [1:3] "one" "two" "three"

j

num [1:3] 3 4 5

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Name Size Modified

Assignment_Feb_24.R 555 8 Mar 8, 2024, 8:55 AM

#Q.12: Create a data frame with multiple variables and summarize it

```
?data.frame  
n=c(6,7,9)  
s=c("cc","dd","cc")  
b=c(TRUE,FALSE,TRUE)  
df=data.frame(n,s,b)
```

```
#as.data.frame  
View(df)  
df  
summary(df)
```

```
> ?data.frame  
> n=c(6,7,9)  
> s=c("cc","dd","cc")  
> b=c(TRUE,FALSE,TRUE)  
> df=data.frame(n,s,b)  
> #as.data.frame  
> View(df)  
> df  
   n   s     b  
1 6 cc  TRUE  
2 7 dd FALSE  
3 9 cc  TRUE  
> summary(df)  
      n                  s                  b  
Min. :6.000  Length:3  Mode :logical  
1st Qu.:6.500  Class :character  FALSE:1  
Median :7.000  Mode  :character  TRUE :2  
Mean   :7.333  
3rd Qu.:8.000  
Max.   :9.000
```

The screenshot shows the RStudio environment with the following details:

- Header:** IITR BA: Foundations of Business Analytics
- Top Bar:** PG R Studio, This Lab will get reset on 23rd March 2024, 12:03 PM, Used 6.5 of 50 hours in Mar, 2024, Start Lab, End Lab.
- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help
- Project:** labsuser, Project: (None)
- Code Editor:** Assignment_Feb_24.R*
The code defines a data frame 'm2' with variables 'cc', 'dd', and 'ee'. It then prints 'm2' and 'm2[2]' to the console, showing the matrix structure and the second row respectively.
- Console:** R 4.0.2 - ~/r
The output of the R code is displayed here, showing the creation of 'm2' and its rows.
- Environment Tab:** Shows the variables 'cc', 'dd', 'ee', and 'm2' in the workspace.
- Plots Tab:** No plots are currently visible.
- Packages Tab:** No packages are currently visible.
- Help Tab:** R Documentation for 'data.frame' is shown.
- Data Frames Tab:** A search bar and a link to 'Find in Topic' are present.
- Description:** A detailed description of what 'data.frame' does.
- Arguments:** A note about the deprecated 'stringsAsFactors' argument.

The screenshot shows a browser window for 'IITR BA: Foundations of Business Analytics' on 'lms.simplilearn.com'. The main area is titled 'PG R Studio' and displays an RStudio interface. In the top-left of the interface, there's a circular icon with an 'R' and the text 'rstudio'. Below it is a file browser showing a folder named 'Assignment_Feb_24.R'. The central workspace shows a data frame 'df' with the following content:

	n	s	b
1	6	cc	TRUE
2	7	dd	FALSE
3	9	cc	TRUE

Below the workspace, the 'Console' tab is active, showing R code and its output. The code includes creating vectors 'm1' and 'm2', defining 'chr', and creating a data frame 'df'. The 'Environment' tab on the right lists variables like 'a' through 'h' and their corresponding values.

The screenshot shows a web-based RStudio interface for an IITR BA Foundations of Business Analytics course. The top navigation bar includes tabs for Practice Labs, IITR BA: Found., and IITR BA: Foundations of Business Analytics. The main title is "IITR BA: Foundations of Business Analytics". A progress bar indicates "Class completed: 1 | 2% of Self-Learning Completed | Projects completed: 0/2". On the right, there are "Community", "Notes", and "Help" buttons.

The RStudio interface has a "PG R Studio" header. It displays the following information:

- Session status: "rstudio" (green)
- Time: "This Lab will get reset on 23rd March 2024, 12:03 PM"
- Usage: "Used 6.5 of 50 hours in Mar, 2024"
- Actions: "▶ Start Lab" and "■ End Lab"

The left sidebar includes "Learning Track" and "Certificate" sections.

The main workspace shows an R script named "Assignment_Feb_24.R" with the following content:

```
184 b<-c(TRUE, FALSE, TRUE)
185 df<-data.frame(n, s, b)
186
187 #as.data.frame
188 View(df)
189 df
190 summary(df)
191
192
193
```

The "Console" tab shows the output of the executed code:

```
1 cc TRUE
2 dd FALSE
3 gg TRUE
> summary(df)
```

The "Environment" tab shows the following variables:

Name	Type	Value
df	3 obs. of 3 variables	num [1:2, 1:4] 1 2 3 4 5 6 7 8
m1	num [1:2, 1:4]	100 5 200 5 3 7 4 8
m2	num [1:2, 1:4]	100 5 200 5 3 7 4 8
Values		
a	1	
b	logi [1:3]	TRUE FALSE TRUE
c	3	
chr	"Mumbai"	
d	4	
D	Factor w/ 2 levels "3","4": 1 1 1 2	
e	5	
e1	chr [1:3]	"Abhishek" "Mumbai" "Analyst"
F	Factor w/ 4 levels "1","2","3","4": 1 1 1 2 2 3 4 4	
g	num [1:4]	1 2 3 4
h	chr [1:3]	"one" "two" "three"

The "Plots" tab shows a histogram of the "n" column from the "df" dataset.

#Q.13:Enter new data ()into the R environment and assign a name to it.

```
> `dataframe 1` <- read.csv("~/Employee detail.csv")
> View(`dataframe 1`)
```

The screenshot shows the PG R Studio interface. On the left, there's a sidebar with 'Learning Track' and 'Certificate'. The main area has tabs for 'Assignment_Feb_24.R' and 'df'. The 'Assignment_Feb_24.R' tab contains the R code provided in the question. The 'df' tab shows the output of the 'View`dataframe 1`' command, which is an empty environment. The right side features a 'Viewer' panel with a file browser showing local files like 'Assignment_Feb_24.R', 'R_1.R', 'R_2 (1).R', 'R_2.R', 'R_3.R', and 'Walmart_Store_sales.csv'. A status bar at the bottom indicates 'Used 9.6 of 50 hours in Mar, 2024'.

This screenshot is similar to the one above, but it shows a 'Select File to Import' dialog box overlaid on the PG R Studio interface. The dialog box has a 'File name:' dropdown set to 'Employee detail.csv' and two buttons at the bottom: 'Open' and 'Cancel'.

IITR BA: Foundations of Business Analytics

Class completed: 1 | 2% of Self-Learning Completed | Projects completed: 0/2

This Lab will get reset on 23rd March 2024, 11:28 PM

PG R Studio

rstudio

Select File to Import

File name: Employee_detail.csv

File tree:

- R
- Assignment_Feb_24.R
- Employee_detail.csv
- R_1.R
- R_2 (1).R
- R_2.R
- R_3.R
- Walmart_Store_sales.csv

Environment is empty

Viewer

Used 9.6 of 50 hours in Mar, 2024

Start Lab End Lab

IITR BA: Foundations of Business Analytics

Class completed: 1 | 2% of Self-Learning Completed | Projects completed: 0/2

This Lab will get reset on 23rd March 2024, 11:28 PM

PG R Studio

rstudio

Import Dataset

Name: dataframe 1

Encoding: Automatic

Heading: Yes No

Row names: Automatic

Separator: Comma

Decimal: Period

Quote: Double ("")

Comment: None

na.strings: NA

Input File

Data Frame

MM,YY	Emp_ID	Age	Gender	City	Education_Level	Salary	Datejoining	LastWorked
2016-01-01	1	28	Male	C23	Master	57387	2015-12-24	
2016-02-01	1	28	Male	C23	Master	57387	2015-12-24	
2016-03-01	1	28	Male	C23	Master	57387	2015-12-24	
4	2017-11-01	2	31	Male	C7	Master	67016	2017-11-06
5	2017-12-01	2	31	Male	C7	Master	67016	2017-11-06
6	2016-12-01	4	43	Male	C13	Master	65603	2016-12-07
7	2017-01-01	4	43	Male	C13	Master	65603	2016-12-07
8	2017-03-01	4	43	Male	C13	Master	65603	2016-12-07
9	2017-04-01	4	43	Male	C13	Master	65603	2016-12-07
10	2017-05-01	4	43	Male	C13	Master	65603	2016-12-07
11	2017-06-01	5	29	Male	C9	College	463	2016-01-09
12	2016-02-01	5	29	Male	C9	College	463	2016-01-09
13	2016-03-01	5	29	Male	C9	College	463	2016-01-09

Import Cancel

Environment is empty

Viewer

Used 9.6 of 50 hours in Mar, 2024

Start Lab End Lab

IITR BA: Foundations of Business Analytics

Class completed: 1 | 2% of Self-Learning Completed | Projects completed: 0/2

This Lab will get reset on 23rd March 2024, 11:28 PM

PG R Studio

rstudio

Assignment_Feb_24.R

Data frame: dataframe 1

Filter

MM,YY	Emp_ID	Age	Gender	City	Education_Level	Salary	Datejoining	LastWorked
2016-01-01	1	28	Male	C23	Master	57387	2015-12-24	
2016-02-01	1	28	Male	C23	Master	57387	2015-12-24	
2016-03-01	1	28	Male	C23	Master	57387	2015-12-24	
4	2017-11-01	2	31	Male	C7	Master	67016	2017-11-06
5	2017-12-01	2	31	Male	C7	Master	67016	2017-11-06
6	2016-12-01	4	43	Male	C13	Master	65603	2016-12-07
7	2017-01-01	4	43	Male	C13	Master	65603	2016-12-07
8	2017-03-01	4	43	Male	C13	Master	65603	2016-12-07
9	2017-04-01	4	43	Male	C13	Master	65603	2016-12-07
10	2017-05-01	4	43	Male	C13	Master	65603	2016-12-07
11	2017-06-01	5	29	Male	C9	College	463	2016-01-09
12	2016-02-01	5	29	Male	C9	College	463	2016-01-09
13	2016-03-01	5	29	Male	C9	College	463	2016-01-09

Showing 1 to 8 of 19,104 entries, 13 total columns

Console Terminal Jobs

R 4.0.2 -

Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

```
> `dataframe 1` <- read.csv("~/Employee_detail.csv")
> View(`dataframe 1`)
```

Environment History Connections Tutorial

Import Dataset 178 MB

Data

dataframe 1 19104 obs. of 13 variables

Files Plots Packages Help Viewer

New Folder New Blank File Upload Delete Rename More

Home Assignment_Feb_24.R R_1.R R_2 (1).R R_2.R R_3.R Walmart_Store_sales.csv Employee_detail.csv

Used 9.6 of 50 hours in Mar, 2024

Start Lab End Lab