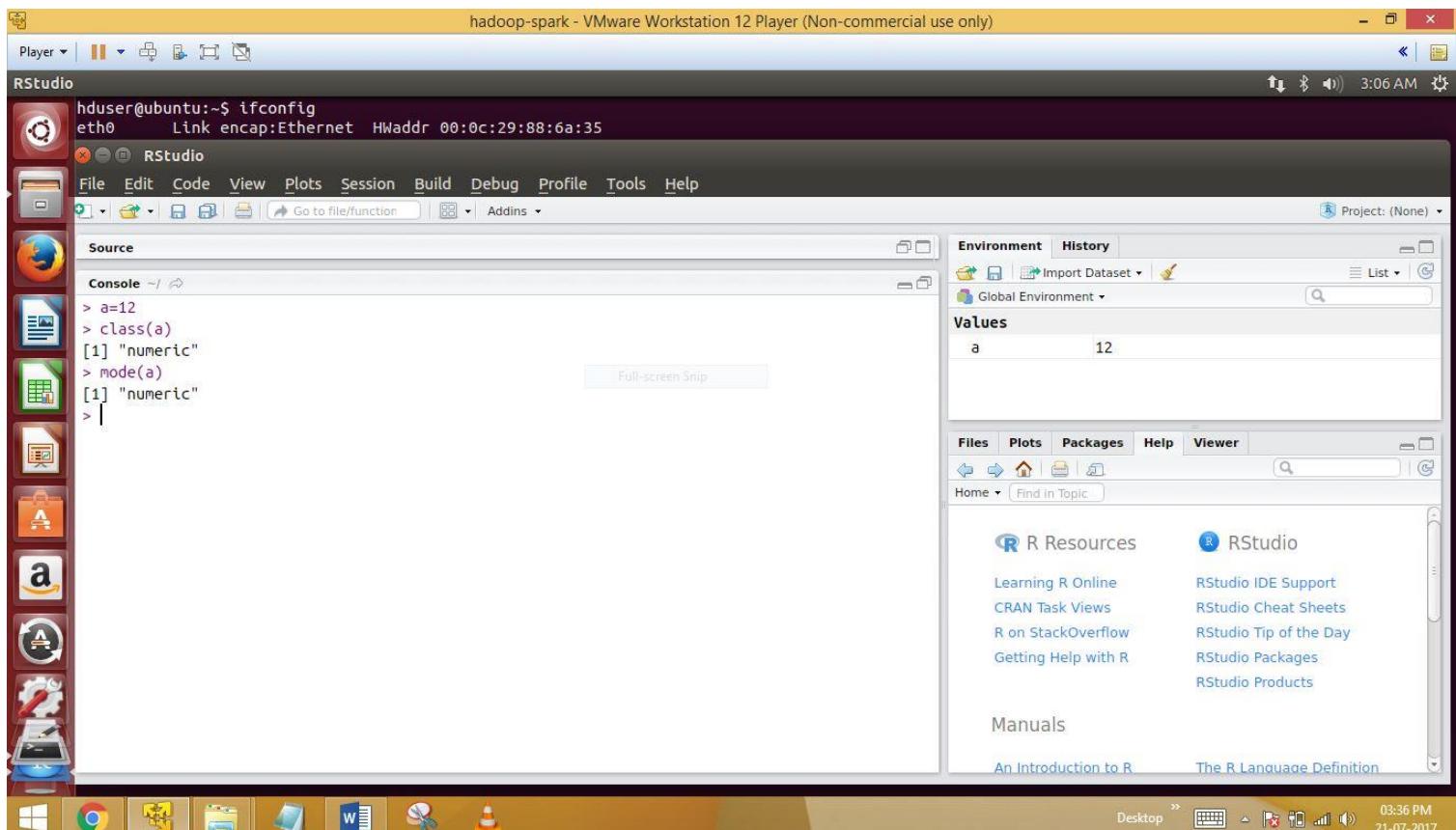


Introduction of R :

- ✓ It is an **open source programming language** and software environment for statistical computing and graphics that is supported by the R Foundation for Statistical Computing.
- ✓ The R language is widely used among statisticians and data miners for developing statistical software and data analysis.
- ✓ Polls, surveys of data miners, and studies of scholarly literature databases show that R's popularity has increased substantially in recent years.
- ✓ In R programming we are using [<- or =]

1) Class/Mode :



Description :

Here we have 4 objects in modes : Numeric, Character, Logical, Complex
Mode//class tells kind of object

Here also we are finding class of object “a”

a=12

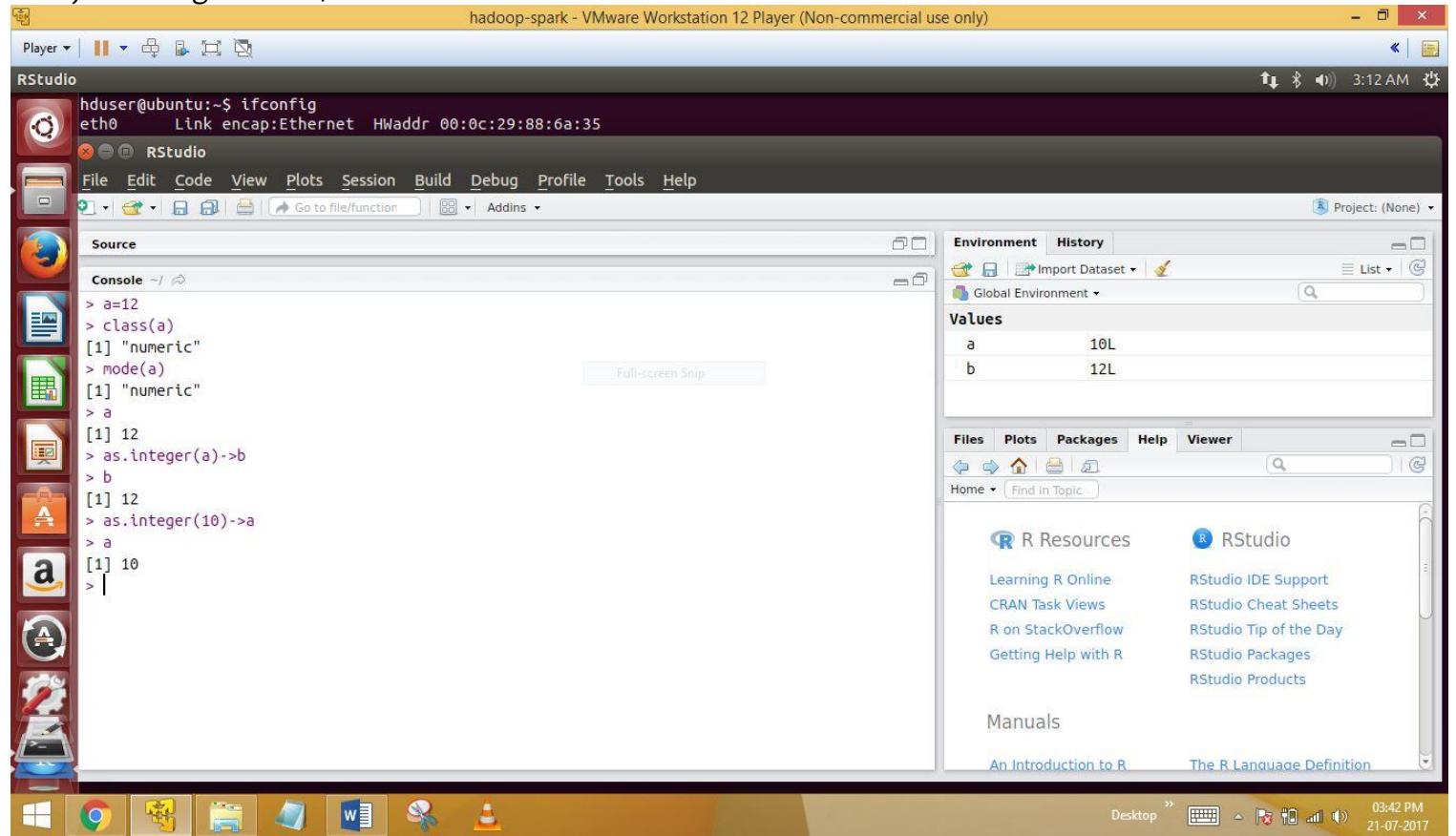
Class of “a” is numeric

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

2) As.integer..Class /mode



The screenshot shows an RStudio interface running on a Windows operating system. The title bar indicates the session is titled "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The left sidebar contains icons for various RStudio features like Source, Console, Files, Plots, Packages, Help, and Viewer. The main area has two panes: the top one is the "Console" showing R code and its output, and the bottom one is the "Environment" pane showing the current values assigned to objects "a" and "b". The taskbar at the bottom shows other open applications like Google Chrome, Microsoft Word, and VLC media player.

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0c:29:88:6a:35
          ... (output truncated)

Source
Console ~/ ~
> a=12
[1] "numeric"
> mode(a)
[1] "numeric"
> a
[1] 12
> as.integer(a)->b
> b
[1] 12
> as.integer(10)->a
> a
[1] 10
> |
```

Environment

Values	a	10L
b	12L	

Files Plots Packages Help Viewer

R Resources RStudio

Learning R Online
CRAN Task Views
R on StackOverflow
Getting Help with R

RStudio IDE Support
RStudio Cheat Sheets
RStudio Tip of the Day
RStudio Packages
RStudio Products

Manuals

An Introduction to R The R Language Definition

Desktop 03:42 PM 21-07-2017

Description :

as.integer(a)->a

Here also we are finding same class of object a in various method...

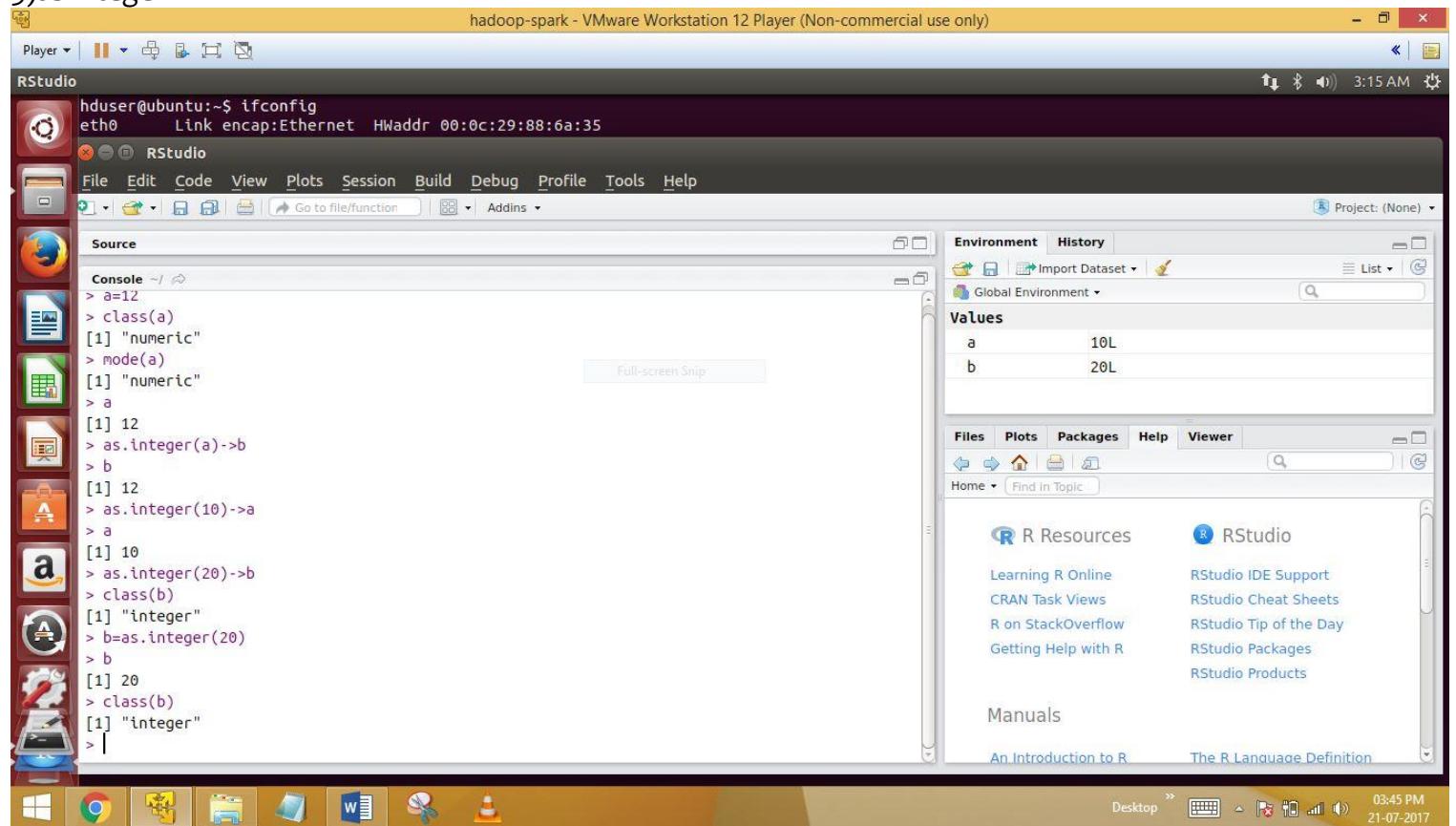
Compare to both here assign a in as.integer(a)=a

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

3)as.integer



The screenshot shows an RStudio interface running on a Windows desktop. The title bar indicates the session is titled "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The Source pane contains the R code:

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0c:29:88:6a:35
          ... (output truncated)

Source ~/ ~
> a=12
> class(a)
[1] "numeric"
> mode(a)
[1] "numeric"
> a
[1] 12
> as.integer(a)->b
> b
[1] 12
> as.integer(10)->a
> a
[1] 10
> as.integer(20)->b
> class(b)
[1] "integer"
> b=as.integer(20)
> b
[1] 20
> class(b)
[1] "integer"
> |
```

The Environment pane shows the variables `a` and `b` defined in the global environment:

Values	a	10L
b	20L	

The bottom right corner of the RStudio window displays links to R Resources, RStudio, and Manuals.

Description :

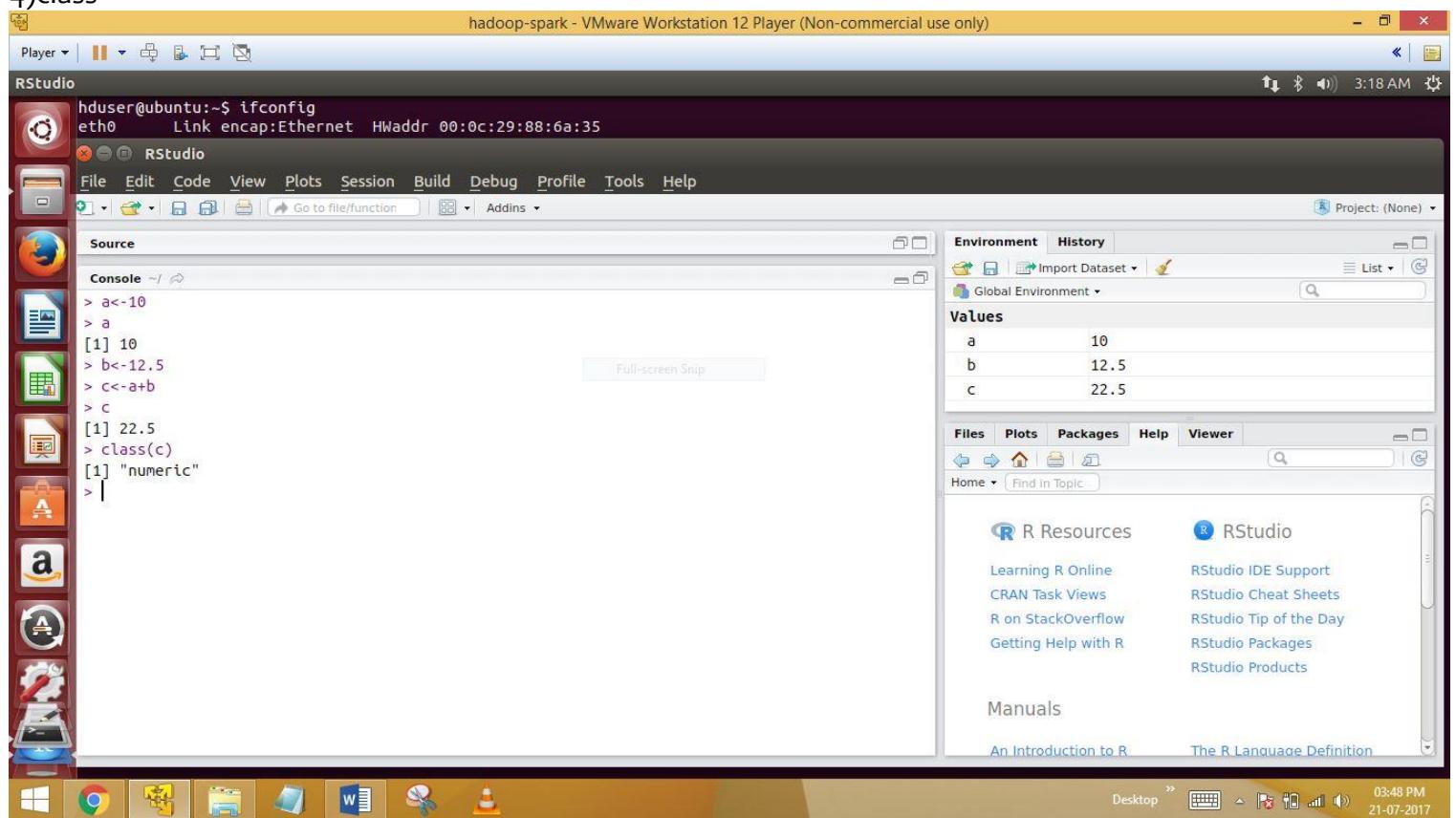
As.integer(20)->b
Integer value assign in “b”, b =12..class is integer

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

4) class



The screenshot shows the RStudio interface running on a Windows operating system. The title bar indicates the session is named "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, and Help. The Source pane contains the following R code:

```
> a<-10
> a
[1] 10
> b<-12.5
> c<-a+b
> c
[1] 22.5
> class(c)
[1] "numeric"
>
```

The Environment pane displays the following variable values:

Values	a	10
b	12.5	
c	22.5	

The status bar at the bottom right shows the date and time: 21-07-2017 03:48 PM.

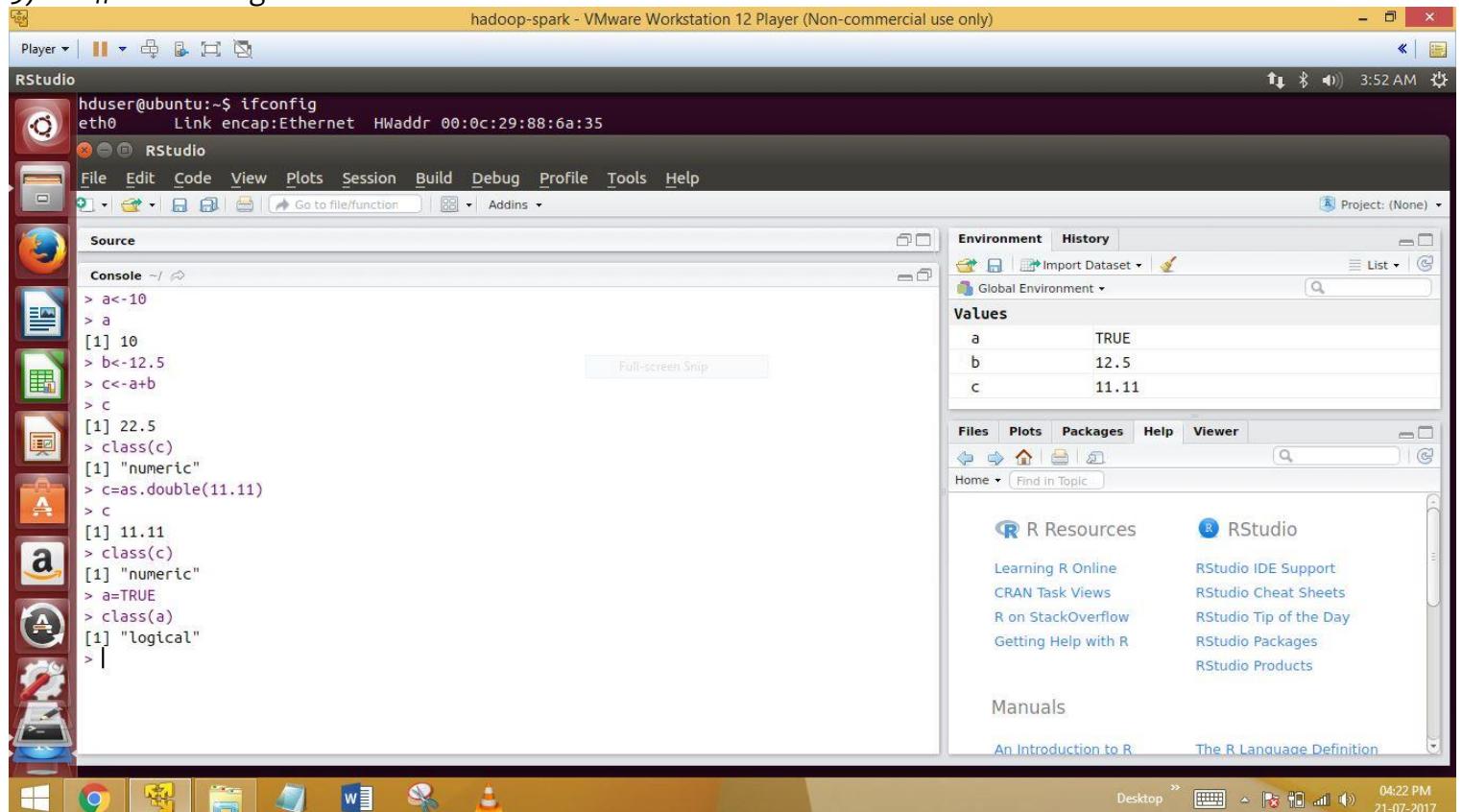
Description :

a=10

b=12.5

c=a+b ;;; In R float//double variables belongs to numeric category : class of "c" is numeric

5) float//double =logical



The screenshot shows the RStudio interface running on a Windows operating system. The title bar indicates the session is named "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, and Help. The Source pane contains the following R code:

```
> a<-10
> a
[1] 10
> b<-12.5
> c<-a+b
> c
[1] 22.5
> class(c)
[1] "numeric"
> c=as.double(11.11)
> c
[1] 11.11
> class(c)
[1] "numeric"
> a=TRUE
> class(a)
[1] "logical"
>
```

The Environment pane displays the following variable values:

Values	a	TRUE
b	12.5	
c	11.11	

The status bar at the bottom right shows the date and time: 21-07-2017 04:22 PM.

Description :

Logical true : another class is logical either TRUE //FALSE.. checking condition places it will occur..(TRUE//FALSE)

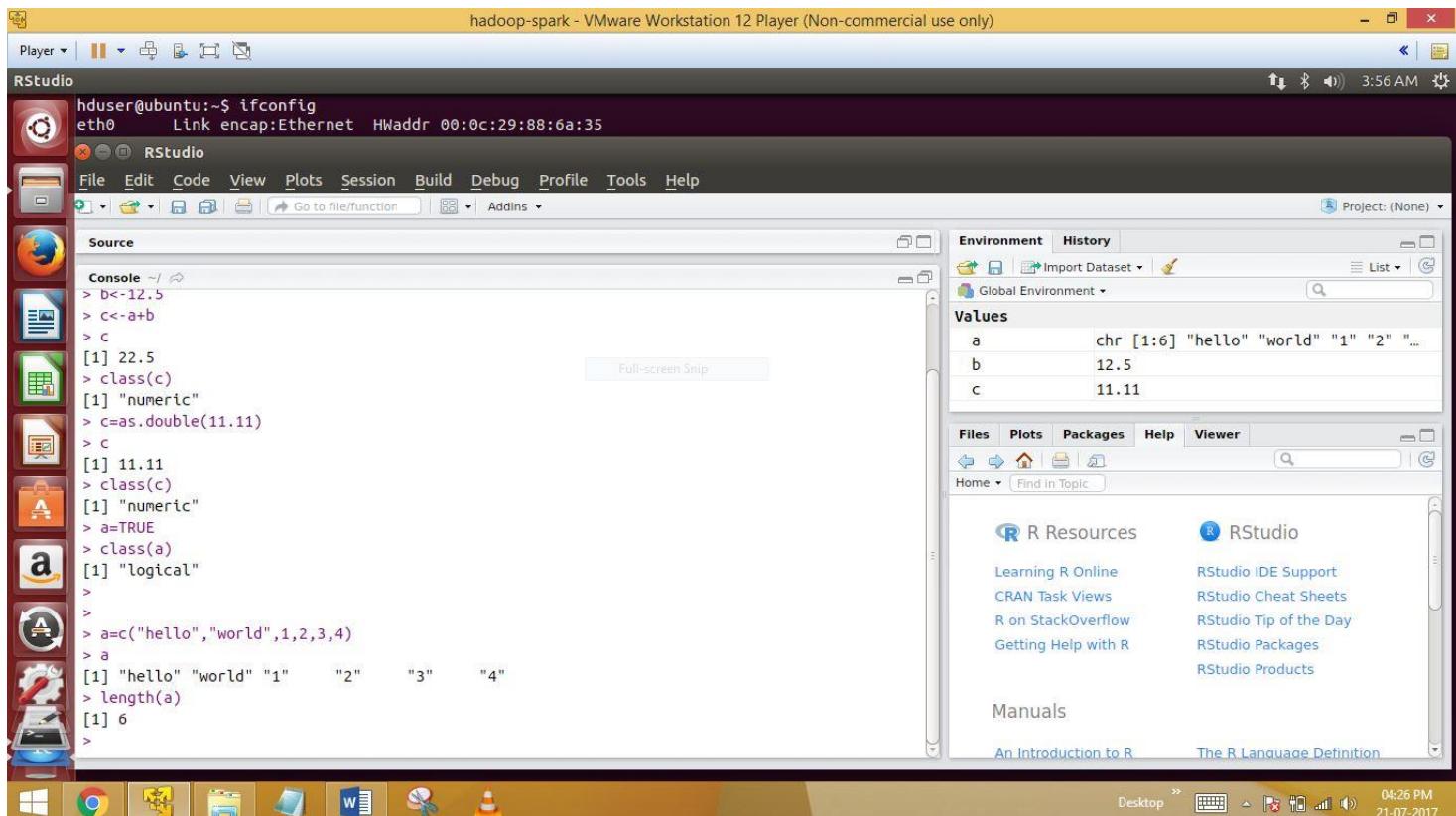
6) VECTOR

A **vector** is a sequence of data elements of the same basic type. Members in a vector are officially called **components**. Nevertheless, we will just call them **members** in this site.

Here is a vector containing three numeric values 2, 3 and 5.

```
> c(2, 3, 5)
```

```
[1] 2 3 5
```



Description :

Ex of Vector : `a=c("Hello","World",1,2,3)`

Here we finding length of vector (How many objects in vectors → it is the length of vector

Assignment 2 TERMINOLOGY IN R

THEJA BODDU

9912054321

7) Append

The screenshot shows the RStudio interface with the following session history:

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0c:29:88:6a:35
          ... (output omitted)

> c
[1] 11.11
> class(c)
[1] "numeric"
> a=TRUE
> class(a)
[1] "logical"
>
>
> a=c("hello","world",1,2,3,4)
> a
[1] "hello" "world" "1"     "2"     "3"     "4"
> length(a)
[1] 6
> append(a,"hi")
[1] "hello" "world" "1"     "2"     "3"     "4"     "hi"
> a
[1] "hello" "world" "1"     "2"     "3"     "4"
> a=append(a,"hi")
> a
[1] "hello" "world" "1"     "2"     "3"     "4"     "hi"
> |
```

The Environment pane shows the following objects:

Values	a	chr [1:7] "hello" "world" "1" "2" "3" "4" "hi"
b	12.5	
c	11.11	

The R Resources sidebar includes links to Learning R Online, CRAN Task Views, R on StackOverflow, Getting Help with R, and Manuals.

Description :

Append(a,"hi") : Append means Adding additional object to vector, here assign hi" object to "a" also..

8)append

The screenshot shows the RStudio interface with the following session history:

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0c:29:88:6a:35
          ... (output omitted)

> a<-c("Hello","World",1,2,3)
> a
[1] "Hello" "World" "1"     "2"     "3"
> a[1]
[1] "Hello"
> a[2:5]
[1] "World" "1"     "2"     "3"
> b<-c(1,2,3,4)
> b
[1] 1 2 3 4
> a[b]
[1] "Hello" "World" "1"     "2"
> a
[1] "Hello" "World" "1"     "2"     "3"
> a[1,2,5]
Error in a[1, 2, 5] : incorrect number of dimensions
>
```

The Environment pane shows the following objects:

Values	a	chr [1:5] "Hello" "World" "1" "2" "3"
b	num [1:4] 1 2 3 4	

The R Resources sidebar includes links to Learning R Online, CRAN Task Views, R on StackOverflow, Getting Help with R, and Manuals.

Description :

a[b] means vector location using index operation, in vector a" indexing b variables...
length also finding by using a[2:5]..

9) Length & nchar == & Mys==bc

The screenshot shows the RStudio interface running on a Windows operating system. The title bar indicates the session is titled "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, and Help. The main area has tabs for "Untitled1" (R Script) and "Console". The Console tab shows the following R session:

```

hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet HWaddr 00:0c:29:88:6a:35

[...]
> myse<-c("b","c","bc","acdf")
> mys
[1] "b"    "c"    "bc"   "acdf"
> length(mys)
[1] 4
> nchar
function (x, type = "chars", allowNA = FALSE)
.Internal(nchar(x, type, allowNA))
<bytecode: 0x35293f8>
<environment: namespace:base>
> nchar(mys)
[1] 1 1 2 4
> mys=="b"
[1] TRUE FALSE FALSE FALSE
> mys=="bc"
[1] FALSE FALSE TRUE FALSE
> mys=='a'
[1] FALSE FALSE FALSE FALSE
>

```

To the right of the console is the "Environment" pane, which displays the following objects:

Object	Type	Value
a	chr	[1:5] "Hello" "World" "1" "2..."
b	num	[1:4] 1 2 3 4
d	logi	[1:2] TRUE FALSE
mys	chr	[1:4] "b" "c" "bc" "acdf"

Below the Environment pane are links for "R Resources" and "Manuals". The "R Resources" section includes links to Learning R Online, CRAN Task Views, R on StackOverflow, Getting Help with R, and RStudio products. The "Manuals" section includes links to RStudio IDE Support, RStudio Cheat Sheets, RStudio Tip of the Day, RStudio Packages, and RStudio Products.

Description :

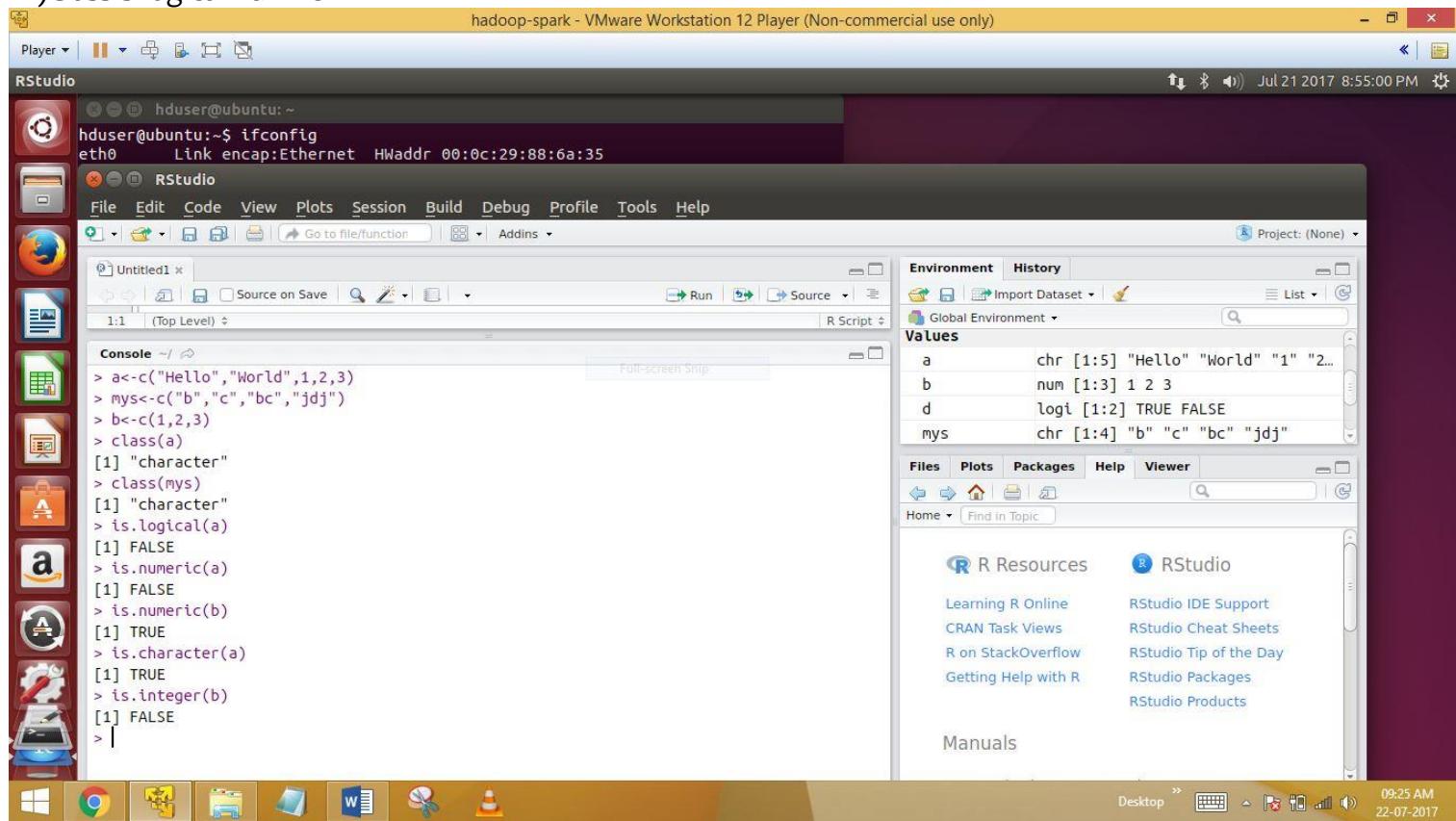
- ✓ Here we can find length of vector (b c bc acdf → 4 objects)& number of characters in vector (b c bc acdf → 1 1 2 4)
- ✓ Mys having “b c bc acdf “ objects & we comparing equal to any one of the object we got output like **TRUE //FALSE**
- ✓ Logical function also shown in above function

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

10) Class & logical numeric



The screenshot shows the RStudio interface running on a Windows desktop. The title bar indicates it's a VMware Workstation 12 Player. The terminal window shows the command `ifconfig` being run, displaying network interface information. The R console window contains the following session:

```
> a<-c("Hello","World",1,2,3)
> mys<-c("b","c","bc","jdj")
> b<-c(1,2,3)
> class(a)
[1] "character"
> class(mys)
[1] "character"
> is.logical(a)
[1] FALSE
> is.numeric(a)
[1] FALSE
> is.numeric(b)
[1] TRUE
> is.character(a)
[1] TRUE
> is.integer(b)
[1] FALSE
> |
```

The Environment pane shows variables `a`, `b`, `d`, and `mys` defined in the global environment. The `a` variable is a character vector containing "Hello", "World", "1", "2", and "3". The `mys` variable is a character vector containing "b", "c", "bc", and "jdj". The `b` variable is an integer vector containing 1, 2, and 3. The `d` variable is a logical vector containing TRUE and FALSE.

Description :

A having 5 elements in vector a & mys having 4 elements & C also 3 elements

From my observation class of a is “character”

Is.logical(a) gives the ouput like TRUE //FALSE

Numeric

Character

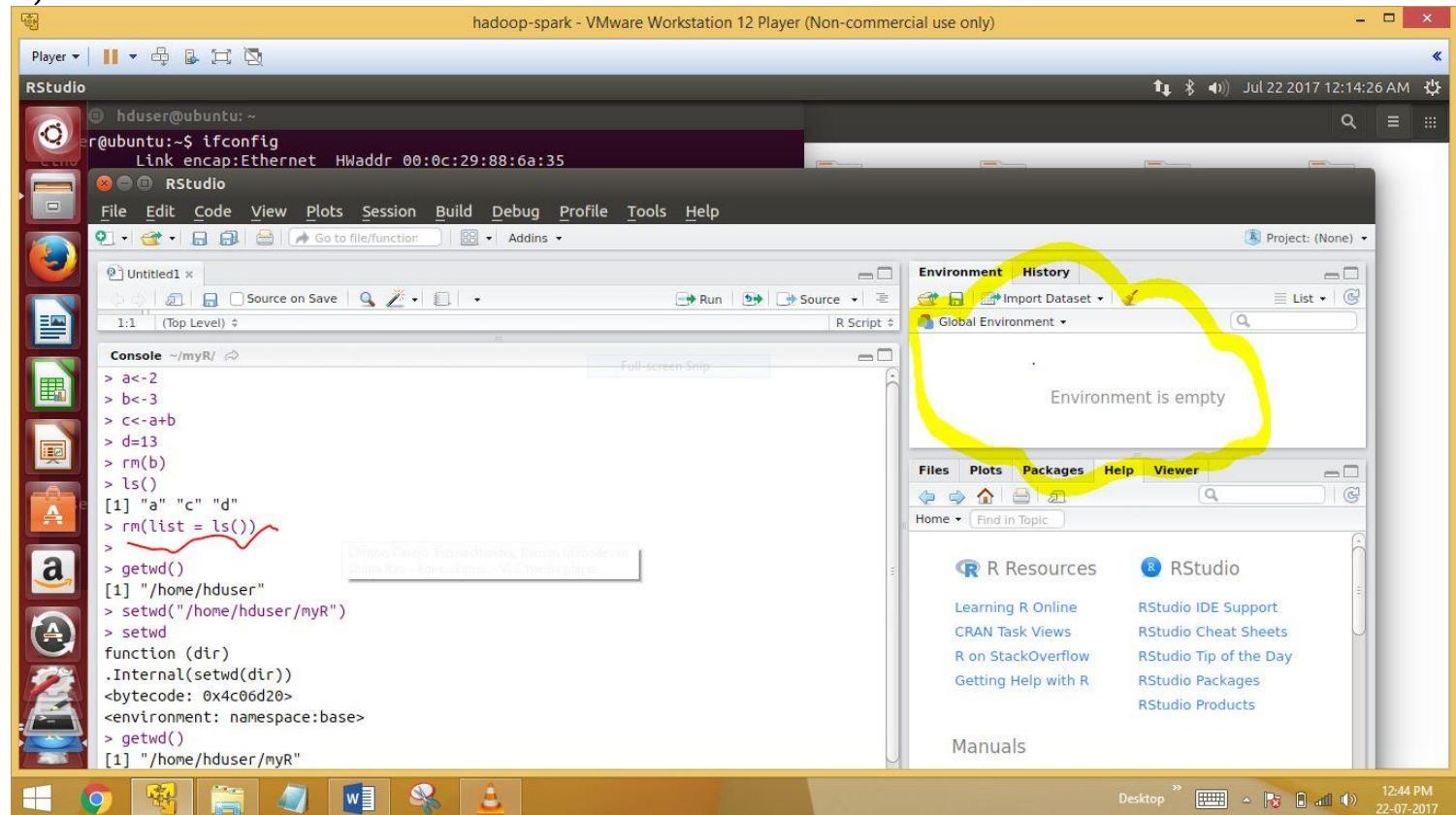
integer

Is means comparing all the math functions...

WORK SPACE :

It is actually a folder where all the work done in the r console would get saved.

11) remove



Description :

as shown in fig when I click **rm(list=list())**, environment is empty

getwd() means get our home directory

setwd() means all data will be saved on created by us in home directory

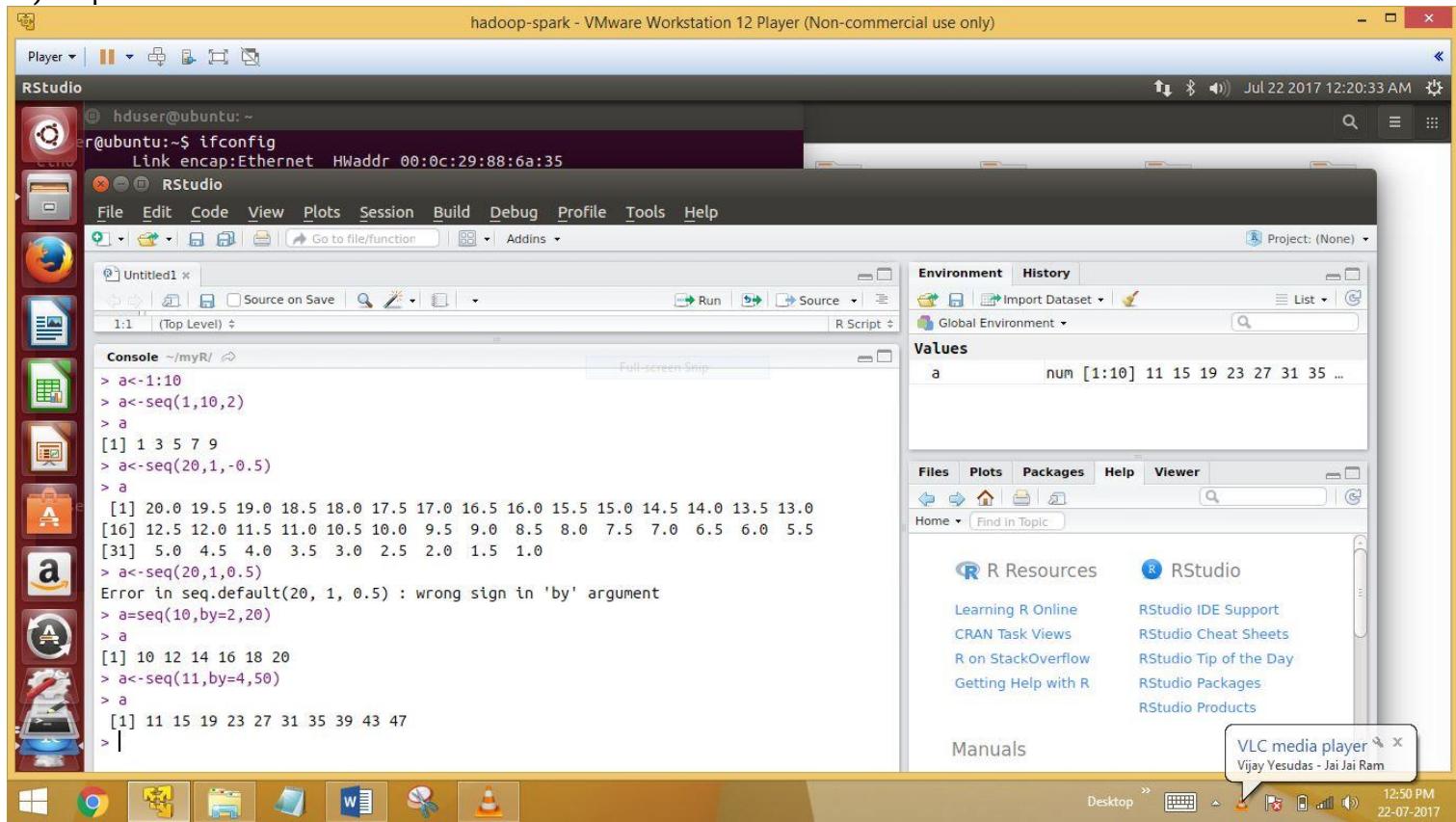
setwd("home/hduser/myR")

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

12) Sequences



The screenshot shows an RStudio interface running on a Windows desktop. The title bar indicates the session is titled "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, and Help. A sidebar on the left contains icons for various applications like Player, RStudio, and others. The main workspace shows a console window with the following R code and its output:

```
> a<-1:10
> a<-seq(1,10,2)
> a
[1] 1 3 5 7 9
> a<-seq(20,1,-0.5)
> a
[1] 20.0 19.5 19.0 18.5 18.0 17.5 17.0 16.5 16.0 15.5 15.0 14.5 14.0 13.5 13.0
[16] 12.5 12.0 11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5
[31] 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0
> a<-seq(20,1,0.5)
Error in seq.default(20, 1, 0.5) : wrong sign in 'by' argument
> a<-seq(10,by=2,20)
> a
[1] 10 12 14 16 18 20
> a<-seq(11,by=4,50)
> a
[1] 11 15 19 23 27 31 35 39 43 47
>
```

The "Values" pane on the right shows the variable "a" defined as a numeric vector from 1 to 10 with a step of 2. The "Environment" pane shows the global environment. The bottom right corner of the screen has a VLC media player notification for "Vijay Yesudas - Jai Jai Ram". The taskbar at the bottom shows various application icons.

Description :

A having 10 elements

From sequence function contain elements & stepping factor. Here

A=seq(1,10,2) 2 is the stepping factor...data would be stepped by 2..

Another ex : stepping factor -0.5

Accordingly 20 to 1,I am giving stepping factor is -0.5 means ...decreased by 0.5..

In same aspect a=seq(10,by=4,50)

It seems same like above 10: 50 is numbers and stepping factor is 4.. o/p will be 11,15,19,23,...,47..

Assignment 2 TERMINOLOGY IN R

THEJA BODDU

9912054321

13) Repeat

The screenshot shows the RStudio interface running on a Windows operating system. The R console window displays the following R code and its output:

```
> z<-c("a","b","c")
> z
[1] "a" "b" "c"
> rep(5,10)
[1] 5 5 5 5 5 5 5 5 5 5
[40] 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4
> rep(1:4,each=4)
[1] 1 1 1 1 2 2 2 2 3 3 3 3 4 4 4 4
> rep(1:4,each=2,times=5)
[1] 1 2 2 2 3 3 3 4 4 1 1 2 2 3 3 4 4 1 1 2 2 3 3 4 4 1 1 2 2 3 3 4
[40] 4
> rep(1:5,3)
[1] 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5
> |
```

The RStudio interface includes the Environment pane showing the variable `z` as a character vector [1:3] "a" "b" "c", and the Global Environment pane listing `R Resources`, `RStudio`, and other support links.

Description :

Z have a,b,c elements, here rep function (5,10) means 5 repeat in 10 times..
1:5,10 means 10 times repeating 1to 5 number accordingly..

14) Append

The screenshot shows the RStudio interface running on a Windows operating system. The R console window displays the following R code and its output:

```
> a<-1:4
> b<-c("hi")
> c<-(1,4,5)
Error: unexpected ',', in "c<-(1,"
> d<-c(1,4,5)
> z<-c(a,b,d)
> z
[1] "1" "2" "3" "4" "hi" "1" "4" "5"
> APPENDING
```

The RStudio interface includes the Environment pane showing variables `a`, `b`, `d`, and `z`, and the Global Environment pane listing `R Resources`, `RStudio`, and other support links.

Description :

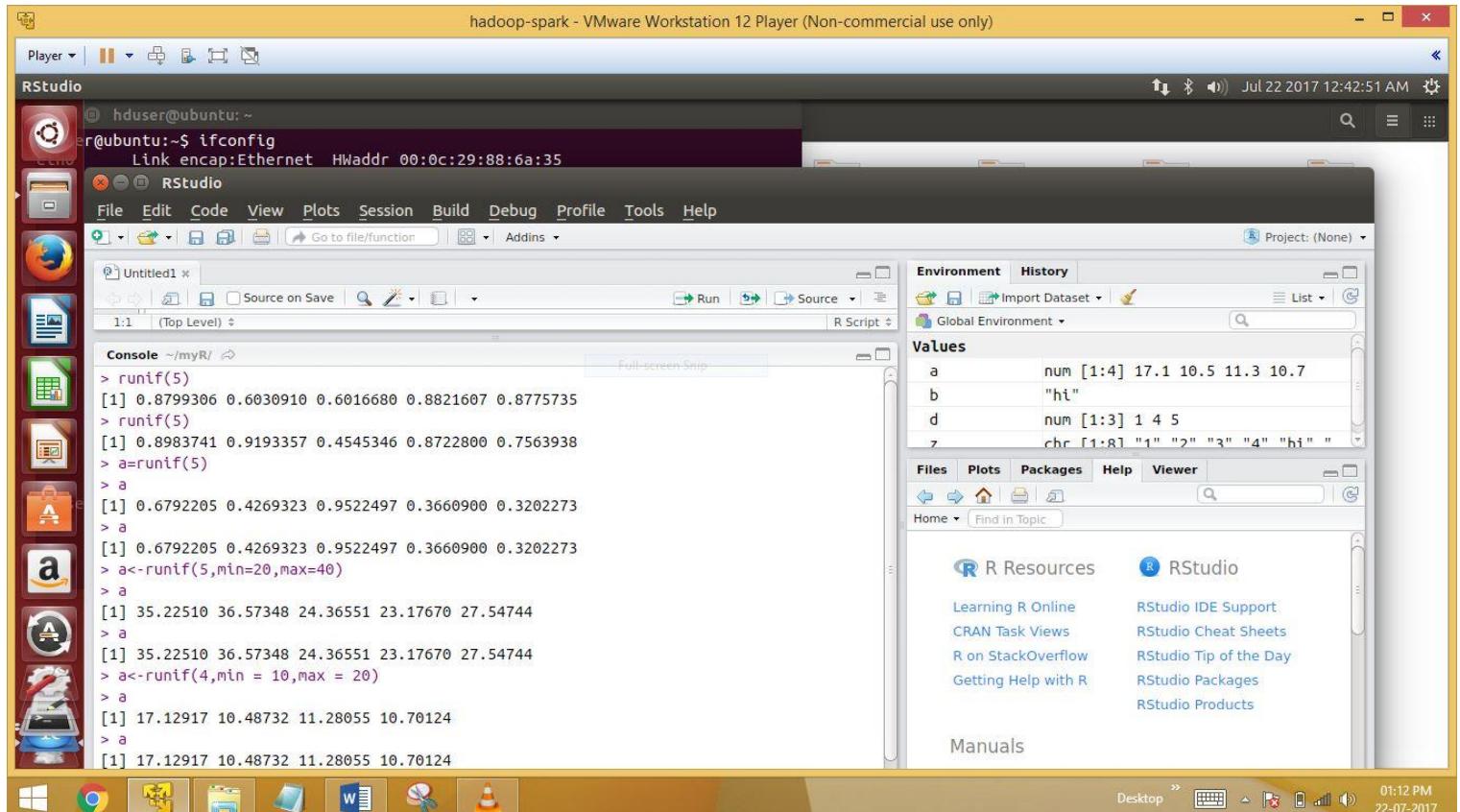
Appending means adding another elements to vectors...

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

15) RandomRunif(10) random



The screenshot shows an RStudio interface running on a Windows desktop. The title bar indicates it's a VMware Workstation 12 Player session. The RStudio window has several panes: a top-left pane showing terminal output for 'ifconfig', a top-right pane showing system status, a left sidebar with icons for various applications like R, RStudio, and Firefox, a main console pane with R code and output, and an environment pane showing variables 'a', 'b', 'd', and 'z'. The desktop taskbar at the bottom shows other open applications like Google Chrome, Microsoft Word, and File Explorer.

```
> runif(5)
[1] 0.8799306 0.6030910 0.6016680 0.8821607 0.8775735
> runif(5)
[1] 0.8983741 0.9193357 0.4545346 0.8722800 0.7563938
> a=runif(5)
> a
[1] 0.6792205 0.4269323 0.9522497 0.3660900 0.3202273
> a
[1] 0.6792205 0.4269323 0.9522497 0.3660900 0.3202273
> a<-runif(5,min=20,max=40)
> a
[1] 35.22510 36.57348 24.36551 23.17670 27.54744
> a
[1] 35.22510 36.57348 24.36551 23.17670 27.54744
> a<-runif(4,min = 10,max = 20)
> a
[1] 17.12917 10.48732 11.28055 10.70124
> a
[1] 17.12917 10.48732 11.28055 10.70124
```

Description :

Runif function means random number in given number...

Like 152378234

76374623

6734763

7435323

It will display random number

A=runif(4,min=10,max=20)

in between 10 – 20 it will be displayed any 4 random numbers...

16) Small medium large

The screenshot shows an RStudio interface running on a Windows host. The title bar indicates the session is titled "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The left sidebar contains various icons for file operations like Open, Save, Print, and Help. The main window has tabs for "Console", "Files", "Plots", "Packages", "Help", and "Viewer". The "Console" tab is active, displaying the following R session:

```
hadoop-spark@ubuntu:~$ ifconfig
Link encap:Ethernet HWaddr 00:0c:29:88:6a:35

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1 * Go to file/function Addins Project: (None)

Console ~/myR/
> a<-runif(10,min=15,max=25)
> a
[1] 23.18149 22.31387 20.98863 22.79505 20.75674 20.40890 21.81678 21.59926
[9] 17.08733 16.06051
> names(a)<-c("small","medium","large")
> a
  small   medium    large    <NA>    <NA>    <NA>    <NA>    <NA>
23.18149 22.31387 20.98863 22.79505 20.75674 20.40890 21.81678 21.59926 17.08733
  <NA>
16.06051
>
> b<-c(1,2,3)
> b
[1] 1 2 3
> names(b)<-c("small","medium","large")
Error: unexpected ',' in "names(b)<-c("small",
> b
[1] 1 2 3
> names(b)<-c("small","medium","large")
```

The "Environment" pane on the right shows the global environment with two objects defined:

a	Named num [1:10]
a	23.2 22.3 21 22...
b	num [1:3]
b	1 2 3

The status bar at the bottom shows the date and time as "Jul 22 2017 3:08:13 AM".

`Names` is the function key to display the assign names to the elements of vector..

Small 23.18

Large 22.31

Large 20.98

Assignment 2 TERMINOLOGY IN R

THEJA BODDU

9912054321

17) Names

RStudio - hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)

File Edit Code View Plots Session Build Debug Profile Tools Help

Untitled1

Console ~/myR/ ↵

```
> num=c(1:3)
> a<-c("one", "two", "three")
> names(num)=a
> a
[1] "one"   "two"   "three"
> a>num
one two three
TRUE TRUE TRUE
> |
```

Environment History

Values

a	chr [1:3] "one" "two" "three"
b	num [1:3] 1 2 3
num	Named int [1:3] 1 2 3

Files Plots Packages Help Viewer

R Resources RStudio

Learning R Online RStudio IDE Support
CRAN Task Views RStudio Cheat Sheets
R on StackOverflow RStudio Tip of the Day
Getting Help with R RStudio Packages
RStudio Products

Manuals

03:41 PM 22-07-2017

Description :

Names is the function key to display the assign names to the elements of vector..

18) Replace.omit

RStudio - hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)

File Edit Code View Plots Session Build Debug Profile Tools Help

Source

Console ~/ ↵

```
> a<-1:10
> a
[1] 1 2 3 4 5 6 7 8 9 10
> a[3]<-NA
> a
[1] 1 2 NA 4 5 6 7 8 9 10
> !is.na(a)
[1] TRUE TRUE FALSE TRUE TRUE TRUE TRUE TRUE TRUE
> is.na(a)
[1] FALSE FALSE TRUE FALSE FALSE FALSE FALSE FALSE FALSE
> b<-na.omit(a)
> b
[1] 1 2 4 5 6 7 8 9 10
attr(,"na.action")
[1] 3
attr(,"class")
[1] "omit"
> |
```

Environment History

Values

c	6 obs. of 1 variable
df	3 obs. of 3 variables
a	int [1:10] 1 2 NA 4 5 6 7 8 9 10
b	atomic [1:9] 1 2 4 5 6 7 8 9 10

Files Plots Packages Help Viewer

R Resources RStudio

Learning R Online RStudio IDE Support
CRAN Task Views RStudio Cheat Sheets
R on StackOverflow RStudio Tip of the Day
Getting Help with R RStudio Packages
RStudio Products

Manuals

09:26 AM 23-07-2017

Description :

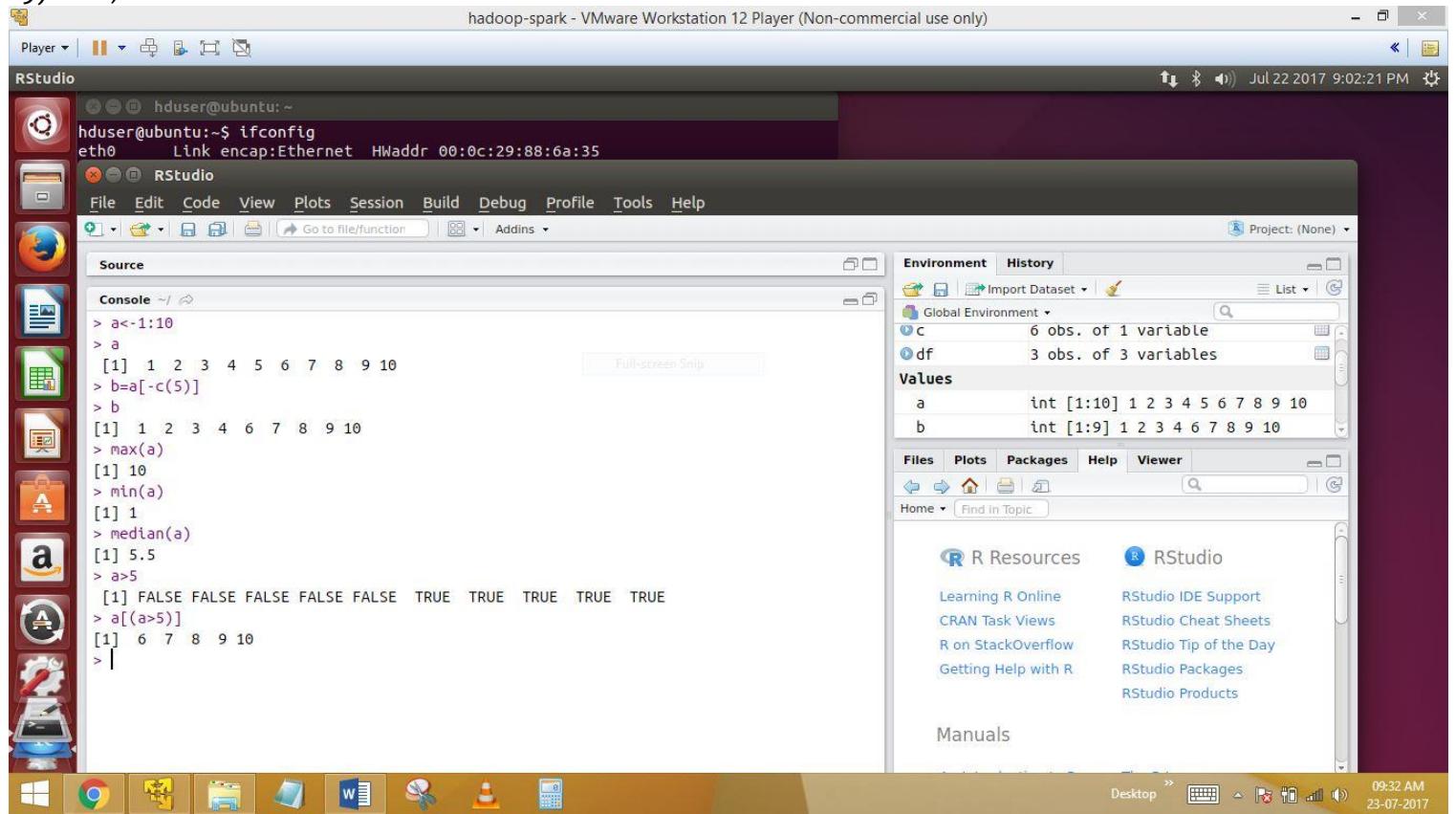
Is command means logical to vector, the o/p will be TRUE//FALSE..
A[3] index shows false o/p will be shown...

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

19) Max,min median



hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)

RStudio

hduser@ubuntu:~\$ ifconfig
eth0 Link encap:Ethernet HWaddr 00:0c:29:88:6a:35

File Edit Code View Plots Session Build Debug Profile Tools Help

Source

Console ~/ ↻

```
> a<-1:10
> a
[1] 1 2 3 4 5 6 7 8 9 10
> b=a[-c(5)]
> b
[1] 1 2 3 4 6 7 8 9 10
> max(a)
[1] 10
> min(a)
[1] 1
> median(a)
[1] 5.5
> a>5
[1] FALSE FALSE FALSE FALSE FALSE TRUE TRUE TRUE TRUE TRUE
> a[(a>5)]
[1] 6 7 8 9 10
> |
```

Environment History

Global Environment

- c 6 obs. of 1 variable
- df 3 obs. of 3 variables

Values

a	int [1:10]	1 2 3 4 5 6 7 8 9 10
b	int [1:9]	1 2 3 4 6 7 8 9 10

Files Plots Packages Help Viewer

R Resources RStudio

- Learning R Online
- CRAN Task Views
- R on StackOverflow
- Getting Help with R

- RStudio IDE Support
- RStudio Cheat Sheets
- RStudio Tip of the Day
- RStudio Packages
- RStudio Products

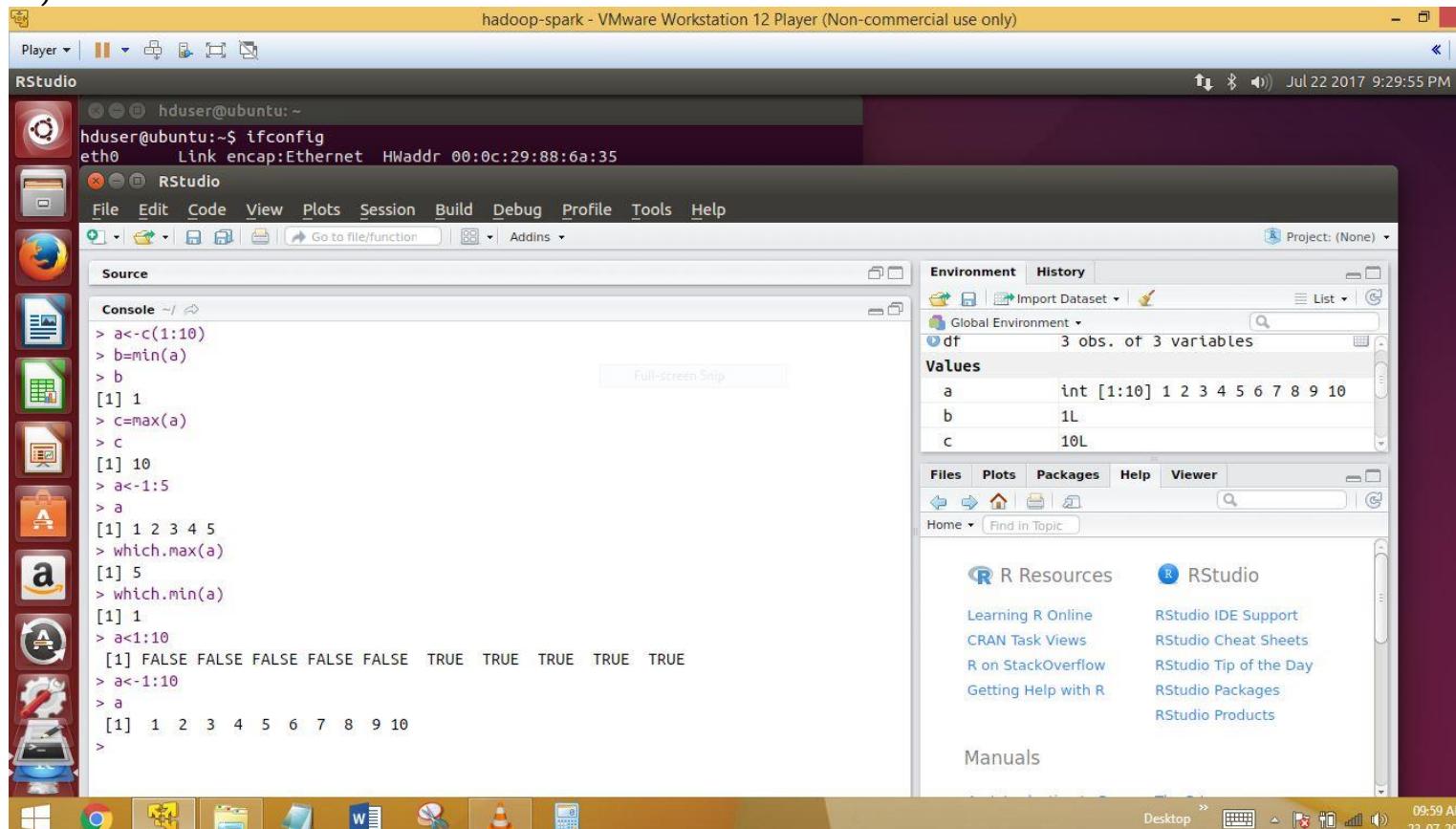
Manuals

Desktop 09:32 AM 23-07-2017

Description :

In the vector a, it will displayed max & min & median values from max(a),min(a),median(a) function..

20) Which min max



hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)

RStudio

hduser@ubuntu:~\$ ifconfig
eth0 Link encap:Ethernet HWaddr 00:0c:29:88:6a:35

File Edit Code View Plots Session Build Debug Profile Tools Help

Source

Console ~/ ↻

```
> a<-c(1:10)
> b=min(a)
> b
[1] 1
> c=max(a)
> c
[1] 10
> a<-1:5
> a
[1] 1 2 3 4 5
> which.max(a)
[1] 5
> which.min(a)
[1] 1
> a<1:10
[1] FALSE FALSE FALSE FALSE FALSE TRUE TRUE TRUE TRUE TRUE
> a<-1:10
> a
[1] 1 2 3 4 5 6 7 8 9 10
> |
```

Environment History

Global Environment

- df 3 obs. of 3 variables

Values

a	int [1:10]	1 2 3 4 5 6 7 8 9 10
b	1L	
c	10L	

Files Plots Packages Help Viewer

R Resources RStudio

- Learning R Online
- CRAN Task Views
- R on StackOverflow
- Getting Help with R

- RStudio IDE Support
- RStudio Cheat Sheets
- RStudio Tip of the Day
- RStudio Packages
- RStudio Products

Manuals

Desktop 09:59 AM 23-07-2017

Description :

Which max means display max value from the vector..

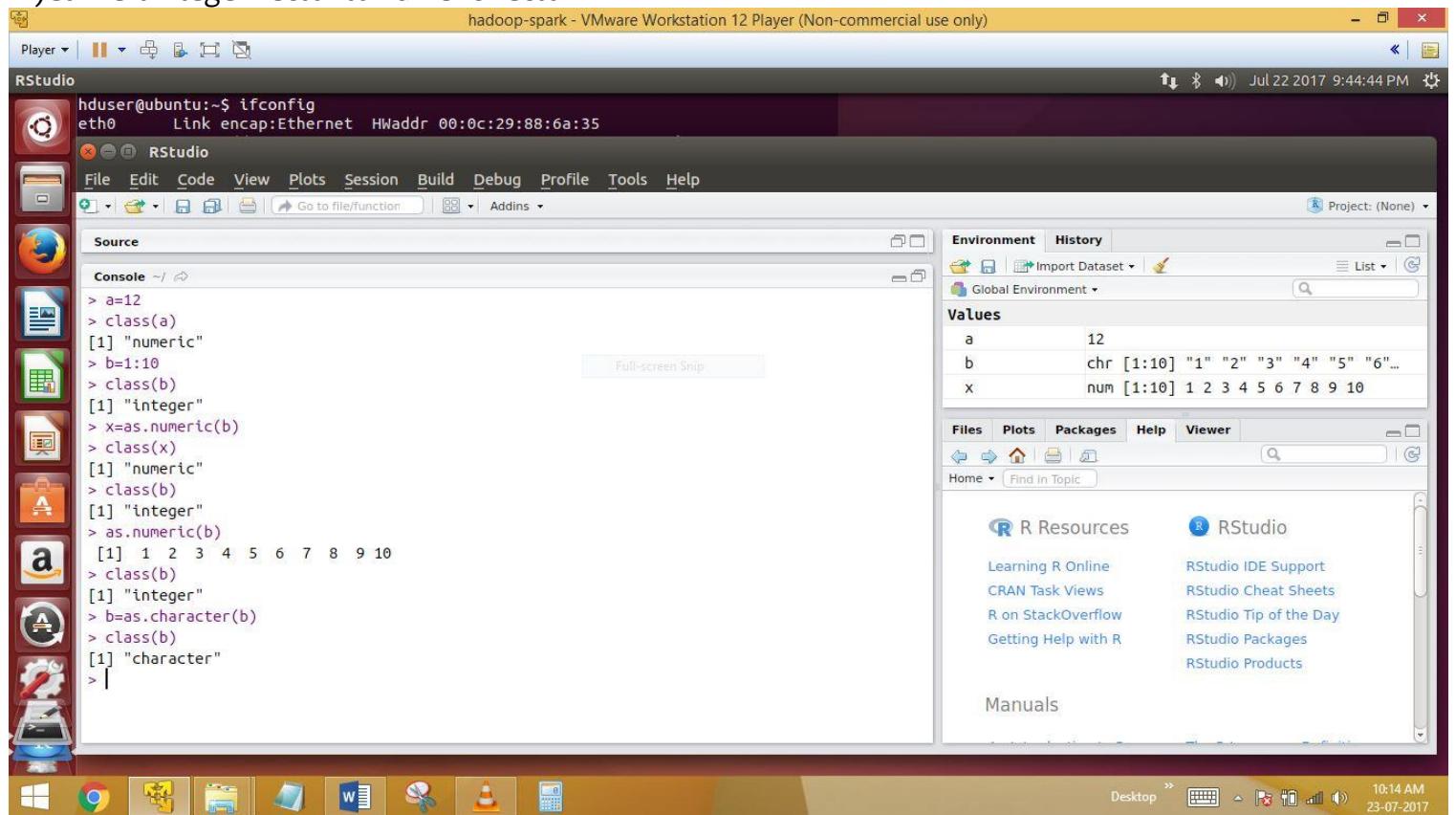
Which min means display min value from the vector..

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

21) Convert integer vector to numeric vector



The screenshot shows the RStudio interface running on a Windows desktop. The RStudio window title is "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The R console window displays the following R code and output:

```
> a=12
> class(a)
[1] "numeric"
> b=1:10
> class(b)
[1] "integer"
> x=as.numeric(b)
> class(x)
[1] "numeric"
> class(b)
[1] "integer"
> as.numeric(b)
[1] 1 2 3 4 5 6 7 8 9 10
> class(b)
[1] "integer"
> b=as.character(b)
> class(b)
[1] "character"
```

The Environment pane shows the following objects:

Object	Type	Value
a	12	
b	chr [1:10]	"1" "2" "3" "4" "5" "6" "7" "8" "9" "10"
x	num [1:10]	1 2 3 4 5 6 7 8 9 10

The RStudio sidebar includes links to R Resources, RStudio, and Manuals.

Description :

Here I am converting integer class to numeric class

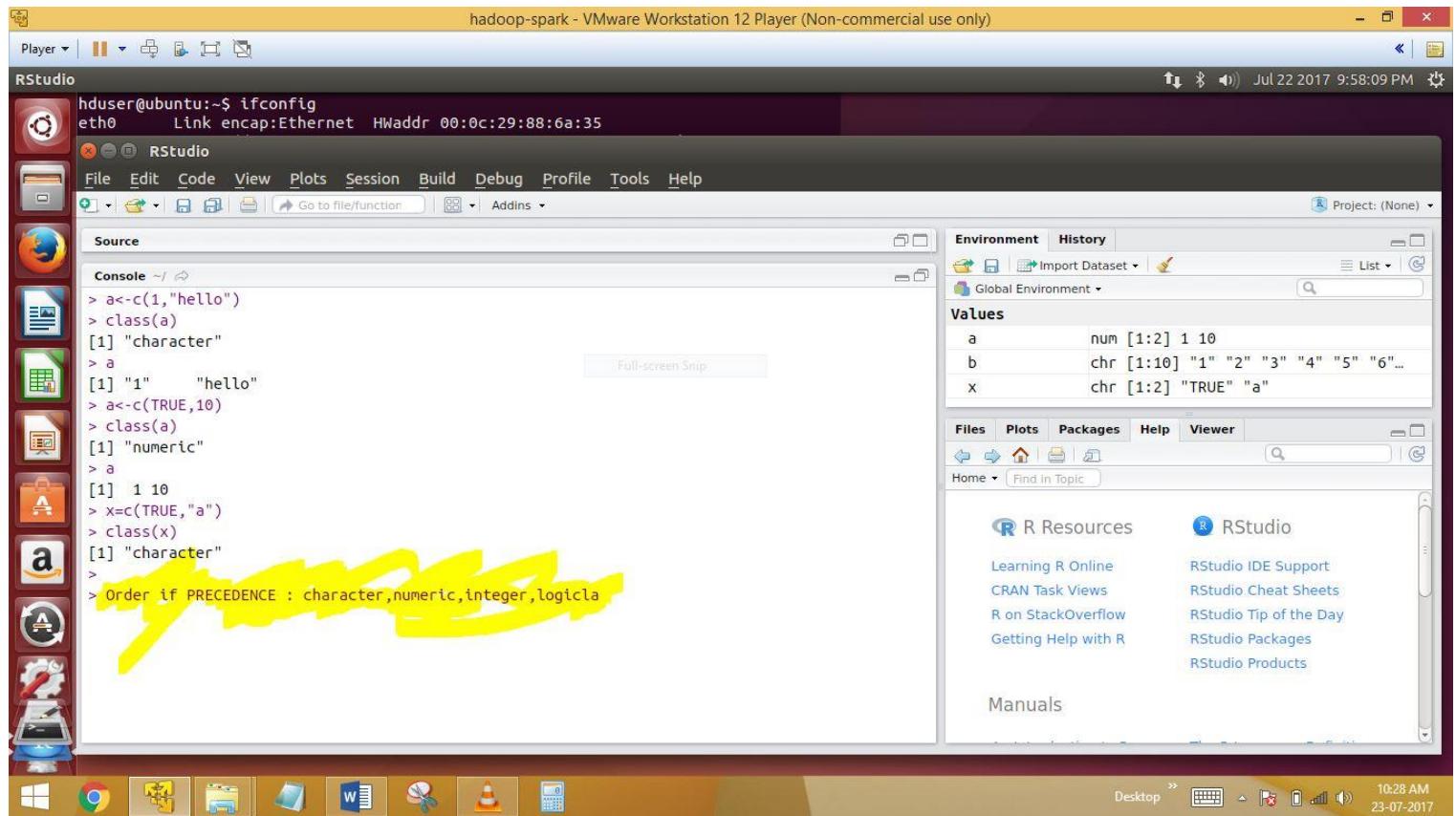
The command will be as.numeric(some x)..the o/p will be numeric ..
& same as character

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

22) Mixed data type & Order of precedence



The screenshot shows the RStudio interface running on a Windows desktop. The title bar reads "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The left sidebar has icons for various applications like R, GitHub, and Google Sheets. The main area has two panes: "Console" and "Environment". The "Console" pane shows R code and its output:

```
> a<-c(1,"hello")
> class(a)
[1] "character"
> a
[1] "1"      "hello"
> a<-c(TRUE,10)
> class(a)
[1] "numeric"
> a
[1] 1 10
> x=c(TRUE,"a")
> class(x)
[1] "character"
>
> Order if PRECEDENCE : character, numeric, integer, logical
```

The "Environment" pane shows the values of variables:

Values	a	num [1:2] 1 10
b	chr [1:10] "1" "2" "3" "4" "5" "6" ...	
x	chr [1:2] "TRUE" "a"	

The right sidebar contains links to R Resources, RStudio, and Manuals.

Description :

Here precedence of order in vectors is Charcter → Numeric → Integer → Logical
In this case also we concluded 1) character & Numerical

Character
2)Logical & Numerical
Numerical

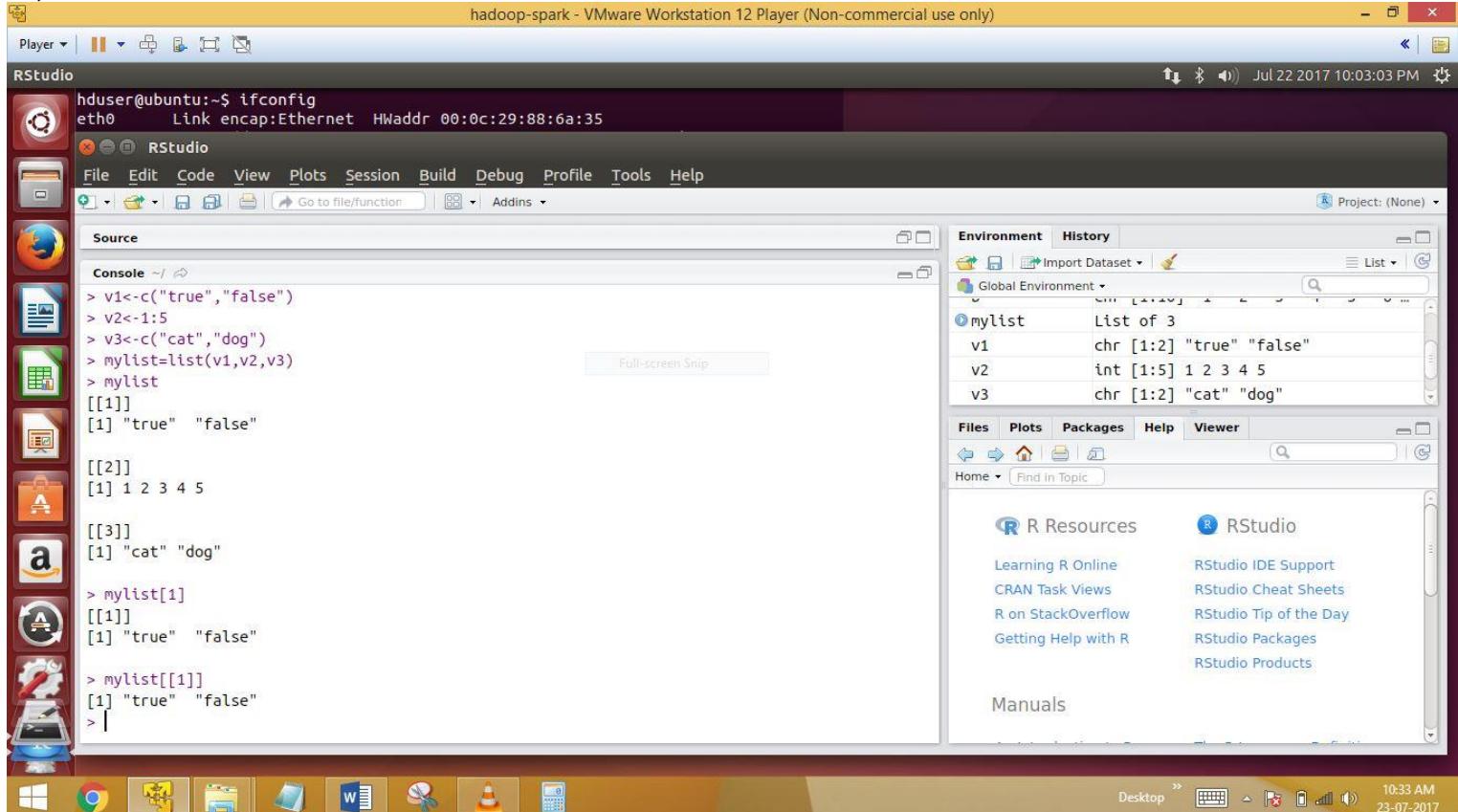
Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

Lists :

23)



RStudio interface showing the creation of a list named 'mylist' from three vectors 'v1', 'v2', and 'v3'. The 'Environment' pane shows the list and its components.

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet HWaddr 00:0c:29:88:6a:35
          ... (output truncated)

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Source ~/ 
Console ~/ 
> v1<-c("true","false")
> v2<-1:5
> v3<-c("cat","dog")
> mylist=list(v1,v2,v3)
> mylist
[[1]]
[1] "true"  "false"

[[2]]
[1] 1 2 3 4 5

[[3]]
[1] "cat"  "dog"

> mylist[1]
[[1]]
[1] "true"  "false"

> mylist[[1]]
[1] "true"  "false"
> |
```

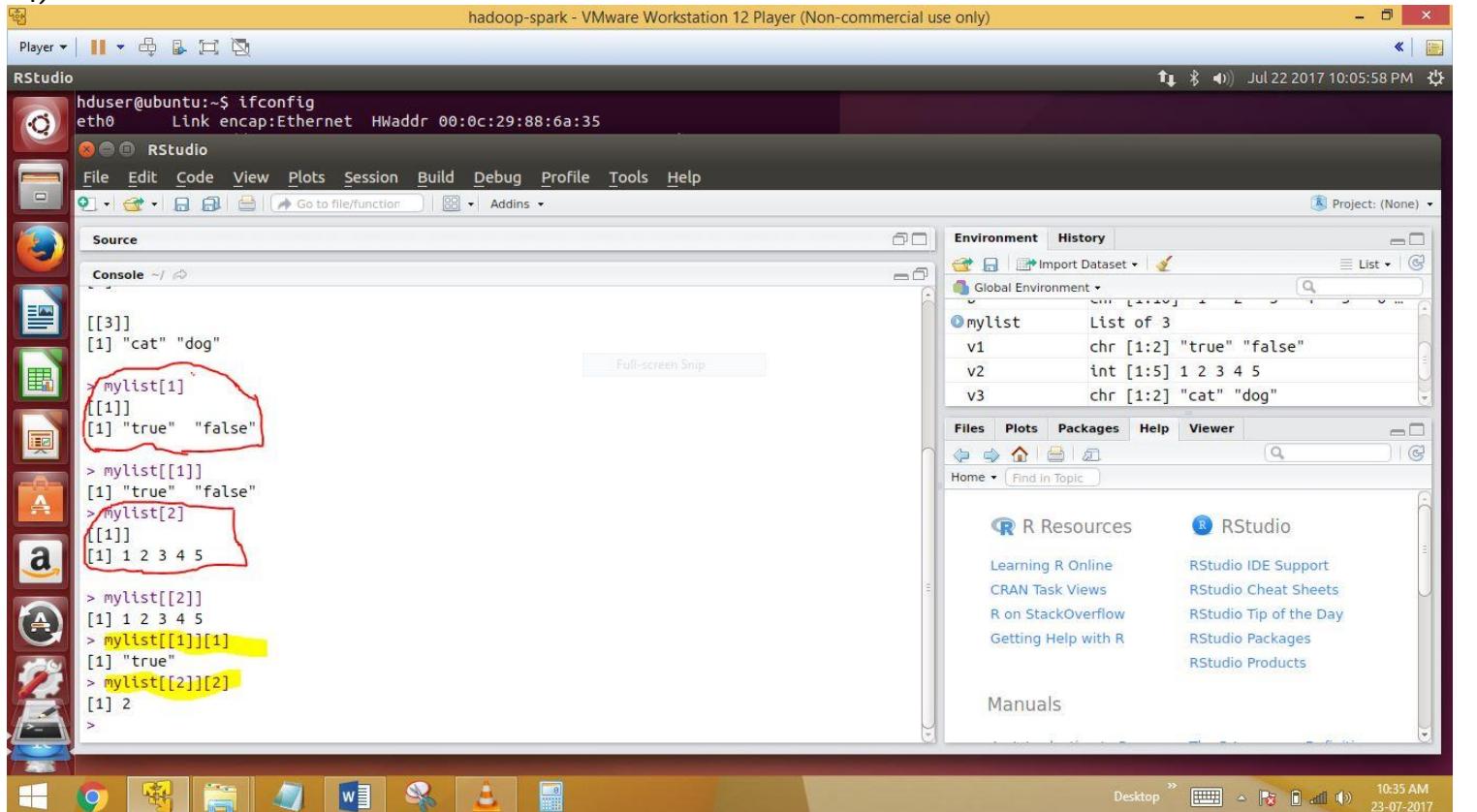
Environment pane content:

- mylist List of 3
- v1 chr [1:2] "true" "false"
- v2 int [1:5] 1 2 3 4 5
- v3 chr [1:2] "cat" "dog"

Description :

3 vectors is listed in one vector is shown by list function..

24) List observation



RStudio interface showing the creation of a list named 'mylist' from three vectors 'v1', 'v2', and 'v3'. The 'Environment' pane shows the list and its components. A red oval highlights the first element of the list, and a yellow box highlights the first element of the first list component.

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet HWaddr 00:0c:29:88:6a:35
          ... (output truncated)

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Source ~/ 
Console ~/ 
> mylist[[1]]
[[1]]
[1] "true"  "false"

> mylist[[1]]
[1] "true"  "false"
> mylist[[2]]
[[1]]
[1] 1 2 3 4 5

> mylist[[3]]
[1] 1 2 3 4 5
> mylist[[1]][1]
[1] "true"
> mylist[[2]][2]
[1] 2
>
```

Environment pane content:

- mylist List of 3
- v1 chr [1:2] "true" "false"
- v2 int [1:5] 1 2 3 4 5
- v3 chr [1:2] "cat" "dog"

Description :

List index will be shown by mylist[1]

“[[1]]”

[1] “True”

Mylist[[2]] means total 2nd vector elements will be displayed..

25) Mylist length

The screenshot shows the RStudio interface running on a Windows desktop. The top bar displays the title "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The Global Environment pane shows:

Object	Type	Value
mylist	List of 3	
v1	chr [1:2]	"true" "false"
v2	int [1:5]	1 2 3 4 5
v3	chr [1:2]	"cat" "dog"

The Source pane contains the following R code:

```
> v1<-c("true","false")
> v2<-1:5
> v3<-c("cat","dog")
> mylist=list(v1,v2,v3)
> length(mylist)
[1] 3
> mylist
[[1]]
[1] "true" "false"

[[2]]
[1] 1 2 3 4 5

[[3]]
[1] "cat" "dog"
> |
```

Description :

Length of my list is “total vectors”

V1=c(“true”,“false”)

V2=

V3=C(cat,dog)

Mylist=list(v1,v2,v3)

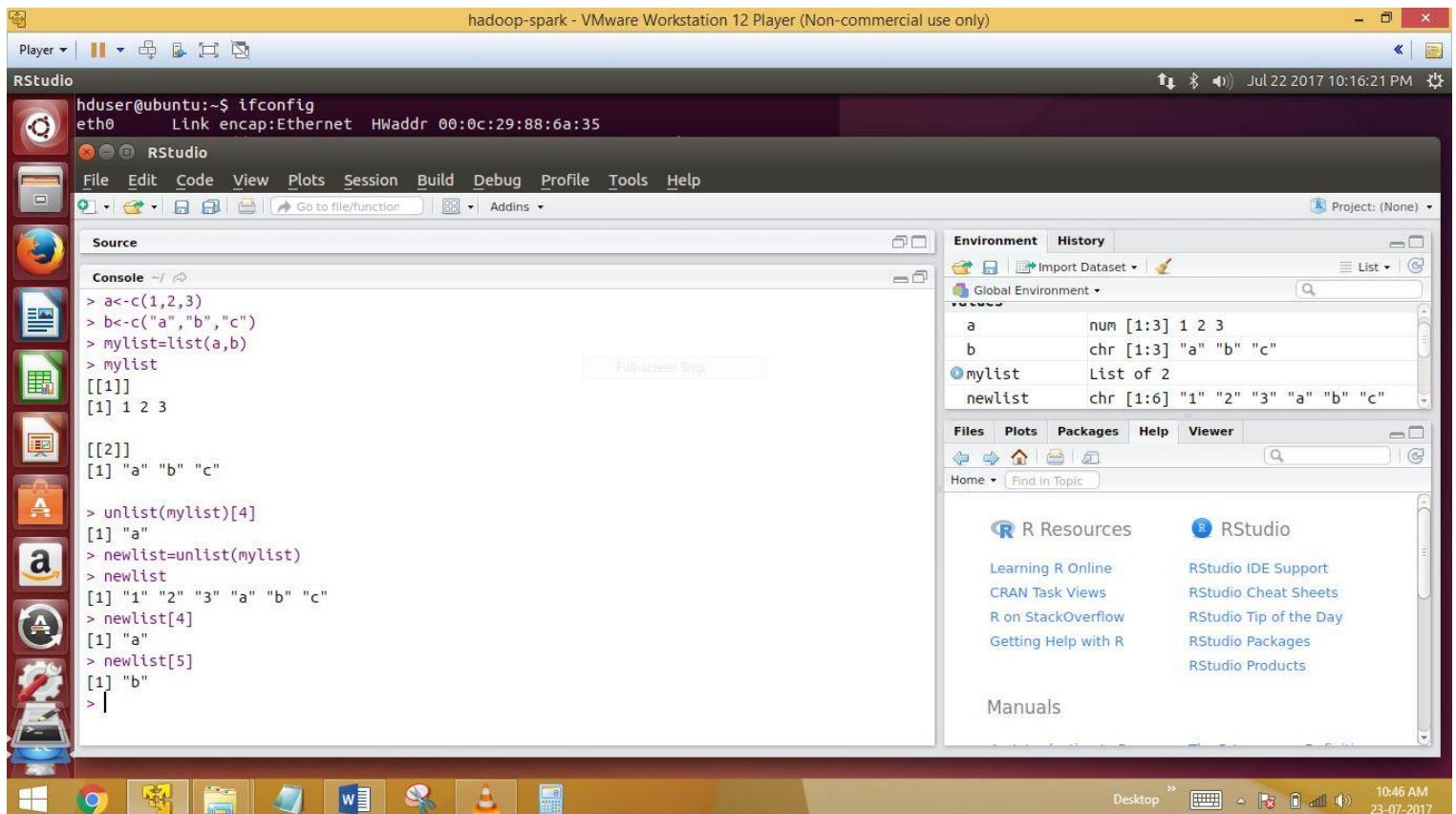
Here list is the function..

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

26) Unlist



The screenshot shows the RStudio interface running on a Windows desktop. The title bar reads "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The Source tab is active, showing R code. The Console tab shows the execution of the code, creating a list 'mylist' from vectors 'a' and 'b', and then using the 'unlist' function to remove the fourth element of 'mylist'. The Environment tab shows the resulting objects: 'a' (vector [1:3] 1 2 3), 'b' (vector [1:3] "a" "b" "c"), 'mylist' (list of 2), and 'newlist' (vector [1:6] "1" "2" "3" "a" "b" "c"). The bottom status bar shows the date and time: 23-07-2017 10:46 AM.

```
> a<-c(1,2,3)
> b<-c("a","b","c")
> mylist=list(a,b)
> mylist
[[1]]
[1] 1 2 3

[[2]]
[1] "a" "b" "c"

> unlist(mylist)[4]
[1] "a"
> newlist=unlist(mylist)
> newlist
[1] "1" "2" "3" "a" "b" "c"
> newlist[4]
[1] "a"
> newlist[5]
[1] "b"
>
```

Description :

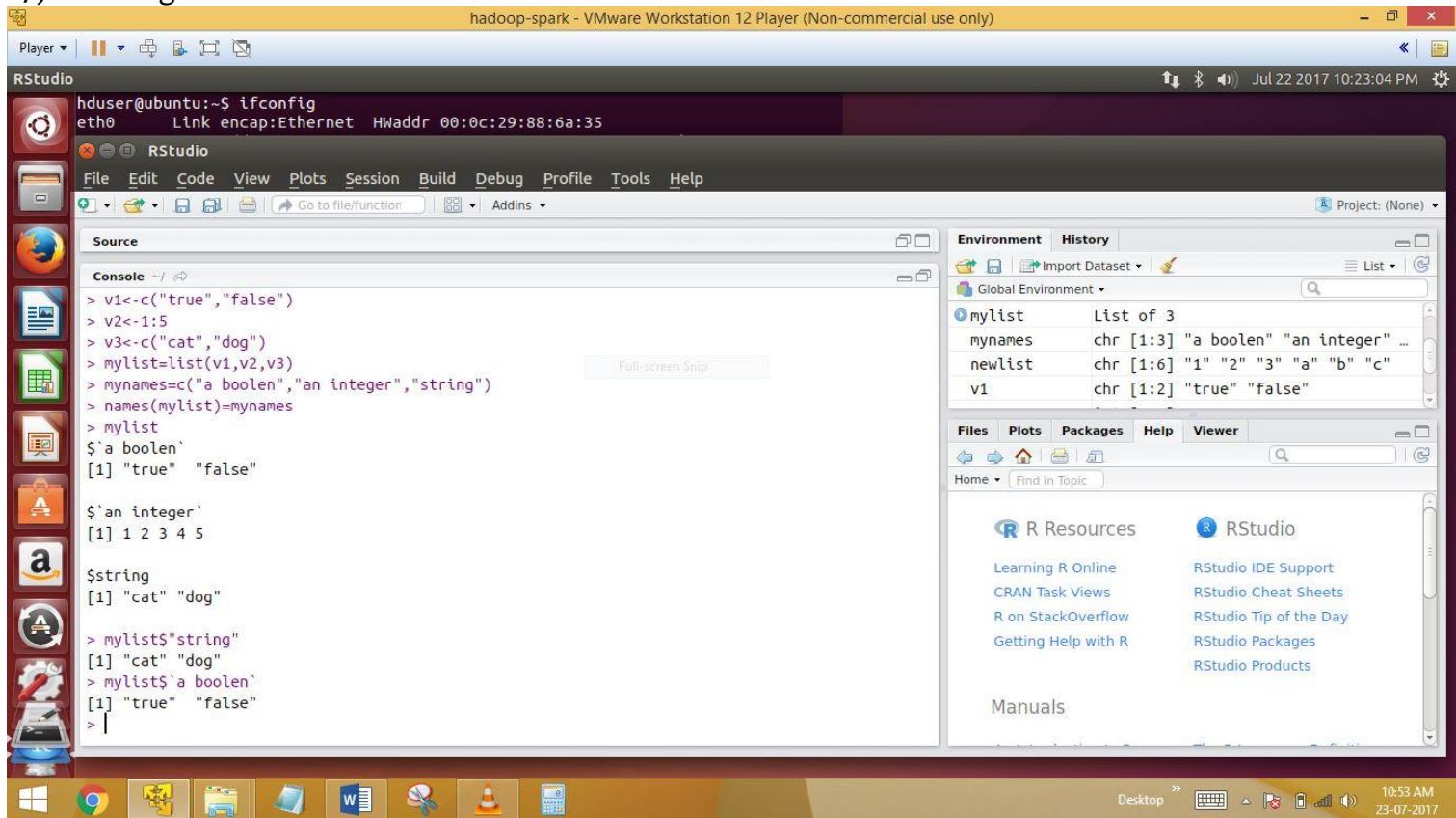
In my vector having total 6 elements, if we have delete any one of the element, in that case we will use unlist function,it will help delete particular element from vector..

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

27) Accessing names



The screenshot shows an RStudio interface running on a Windows operating system. The title bar indicates the session is titled "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The Source pane contains R code for creating lists and vectors, and the Environment pane shows the resulting objects in the global environment.

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet HWaddr 00:0c:29:88:6a:35
          ... (output truncated)

Source
Console ~ / 
> v1<-c("true","false")
> v2<-1:5
> v3<-c("cat","dog")
> mylist=list(v1,v2,v3)
> mynames=c("a boolean","an integer","string")
> names(mylist)=mynames
> mylist
$`a boolean`
[1] "true" "false"

$`an integer`
[1] 1 2 3 4 5

$string
[1] "cat" "dog"

> mylist$string
[1] "cat" "dog"
> mylist$a boolean
[1] "true" "false"
> |
```

Environment

mylist	List of 3
mynames	chr [1:3] "a boolean" "an integer" ...
newlist	chr [1:6] "1" "2" "3" "a" "b" "c"
v1	chr [1:2] "true" "false"

Files Plots Packages Help Viewer

R Resources RStudio

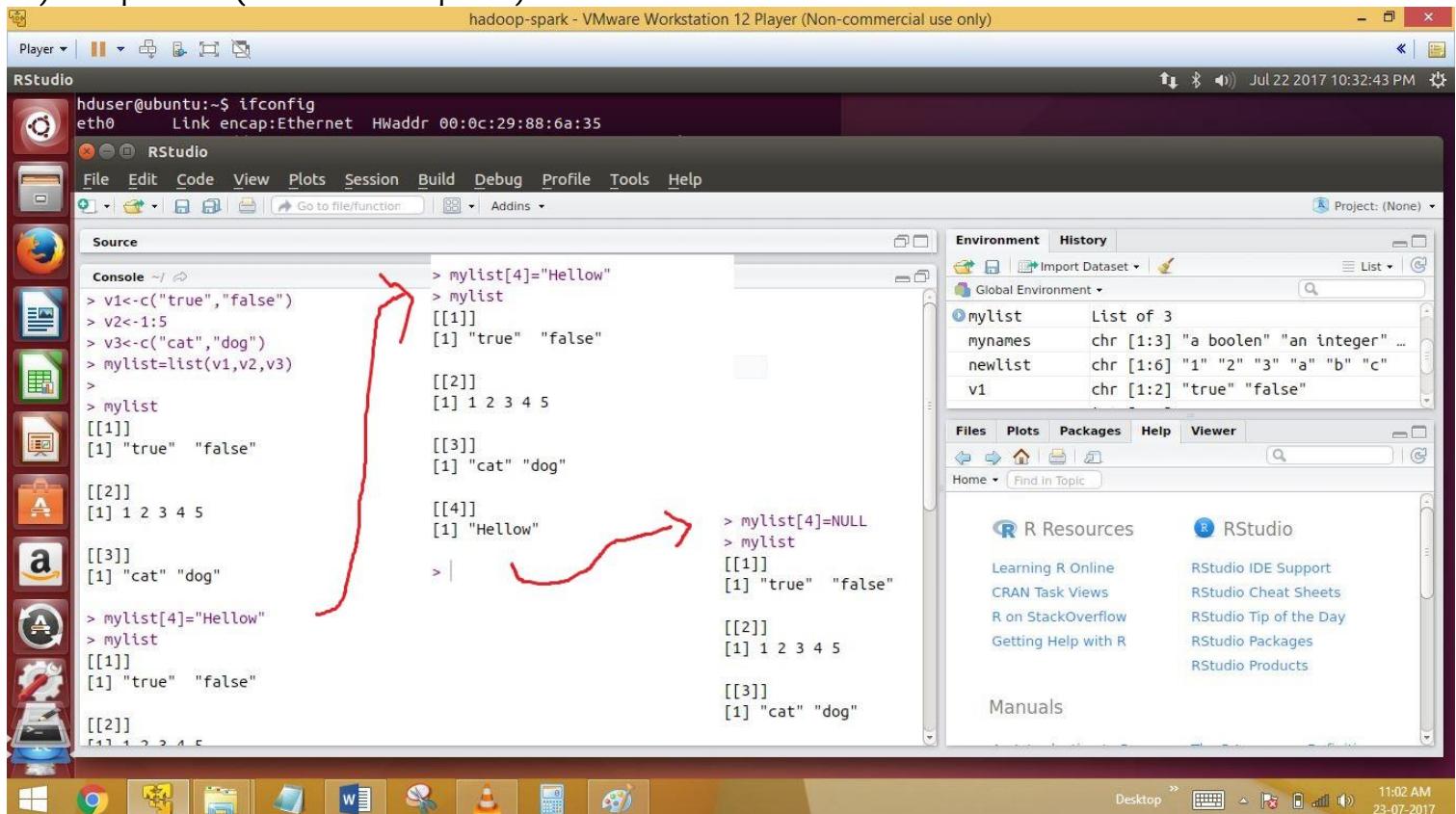
Learning R Online CRAN Task Views R on StackOverflow Getting Help with R RStudio Packages RStudio Products

Manuals

Description :

Here we are creating the names to particular vector elements .
The content of mylist by using the command names(mylist)
Here \$ symbol is mandatory....

28) Manipulation (add Delete & update)



The screenshot shows an RStudio interface running on a Windows operating system. The title bar indicates the session is titled "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The Source pane contains R code demonstrating list manipulation, specifically changing the fourth element of mylist from "Hellow" to NULL. Red arrows highlight the assignment statement and the resulting list structure in the Environment pane.

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet HWaddr 00:0c:29:88:6a:35
          ... (output truncated)

Source
Console ~ / 
> mylist[4]="Hellow"
> mylist
[[1]]
[1] "true" "false"
[[2]]
[1] 1 2 3 4 5
[[3]]
[1] "cat" "dog"
[[4]]
[1] "Hellow"
> |
```

Environment

mylist	List of 3
mynames	chr [1:3] "a boolean" "an integer" ...
newlist	chr [1:6] "1" "2" "3" "a" "b" "c"
v1	chr [1:2] "true" "false"

Files Plots Packages Help Viewer

R Resources RStudio

Learning R Online CRAN Task Views R on StackOverflow Getting Help with R RStudio Packages RStudio Products

Manuals

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

Description :

In mylist having 3 elements, by using index function adding another vector to this..
After using NULL function we can delete same as..

29) Mylist insert null

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet HWaddr 00:0c:29:88:6a:35
          ... (output omitted)

RStudio
File Edit Code View Plots Session Build Debug Pr > mylist[[1]][6]=6
> mylist
[[1]]
[1] "true"  "false" NA      NA      NA      "6"
[[2]]
[1] 1 2 3 4 5
[[3]]
[1] "cat"   "dog"
[[4]]
NULL
[[5]]
NULL
[[6]]
[1] 6

> mylist[[1]][6]=NULL
Error in mylist[[1]][6] = NULL : replacement has length zero
> mylist
[[1]]
[1] "true"  "false" NA      NA      NA      "6"
[[2]]
[1] 1 2 3 4 5
[[3]]
[1] "cat"   "dog"
[[4]]
NULL
[[5]]
NULL
[[6]]
[1] 6
```

Description :

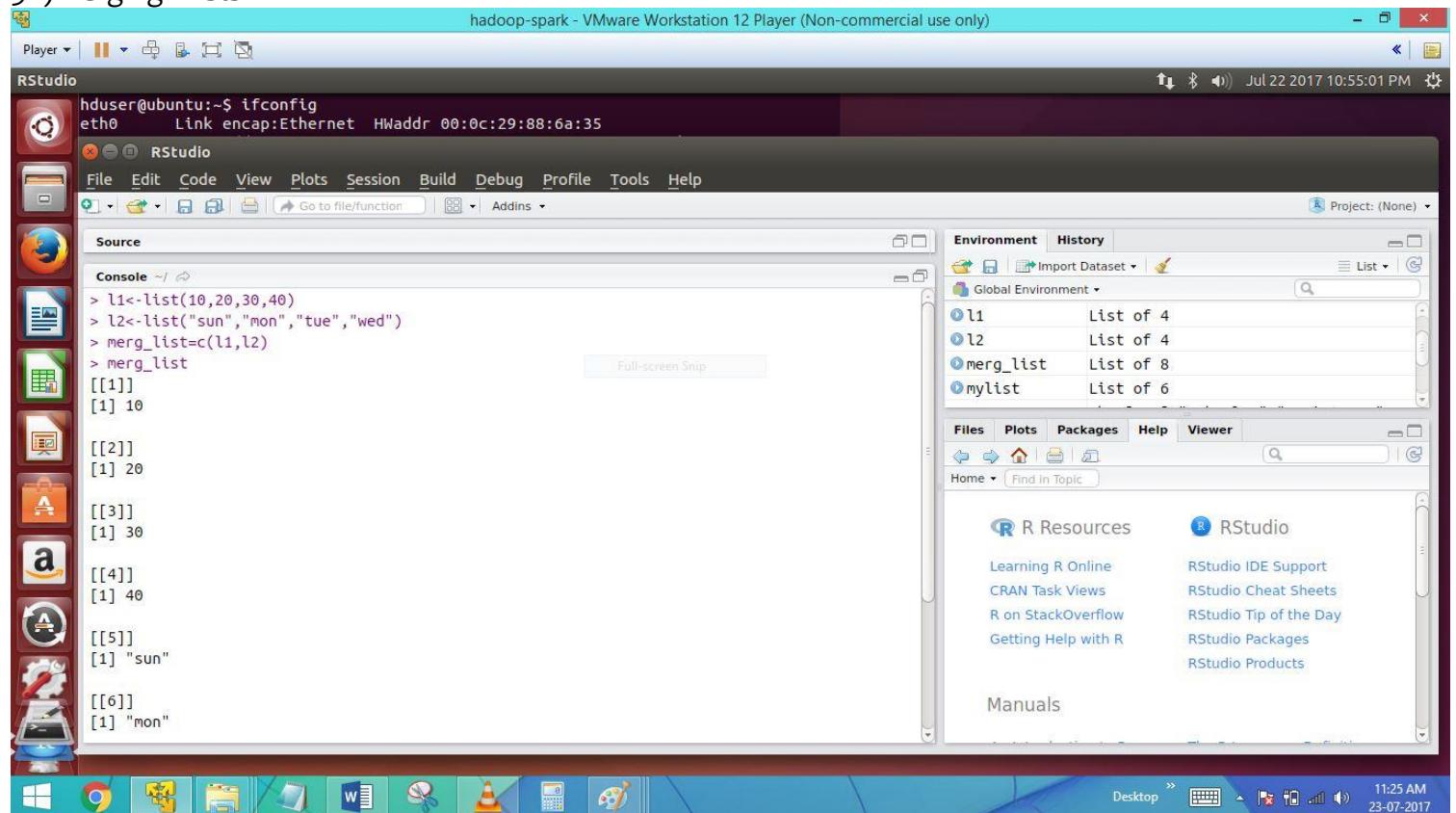
Mylist having 3 vectors, for further I want to add one more vector to this we can do mylist[[6]]=6
4th & 5th vectors will be NULL... in 1st vector I am adding 6th element 4th & 5th elements will be NULL shown in above

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

30) Merging 2 lists



The screenshot shows the RStudio interface running on a Windows desktop. The title bar reads "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The Source tab is active, displaying R code and its output. The Environment tab shows variables l1, l2, merg_list, and mylist. The History tab is also visible. The bottom status bar shows the date and time: 23-07-2017, 11:25 AM.

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0c:29:88:6a:35
          ... (output truncated)

Source ~ / 
> l1<-list(10,20,30,40)
> l2<-list("sun","mon","tue","wed")
> merg_list=c(l1,l2)
> merg_list
[[1]]
[1] 10

[[2]]
[1] 20

[[3]]
[1] 30

[[4]]
[1] 40

[[5]]
[1] "sun"

[[6]]
[1] "mon"
```

Environment | History

l1	List of 4
l2	List of 4
merg_list	List of 8
mylist	List of 6

Files Plots Packages Help Viewer

R Resources RStudio

- Learning R Online
- CRAN Task Views
- R on StackOverflow
- Getting Help with R
- RStudio IDE Support
- RStudio Cheat Sheets
- RStudio Tip of the Day
- RStudio Packages
- RStudio Products

Manuals

Description :

By using list we merge 2 vectors here, I have l1,l2 lists, by using [merg_list=c(l1,l2)].it will merge 2 vector & displayed as [[1]]

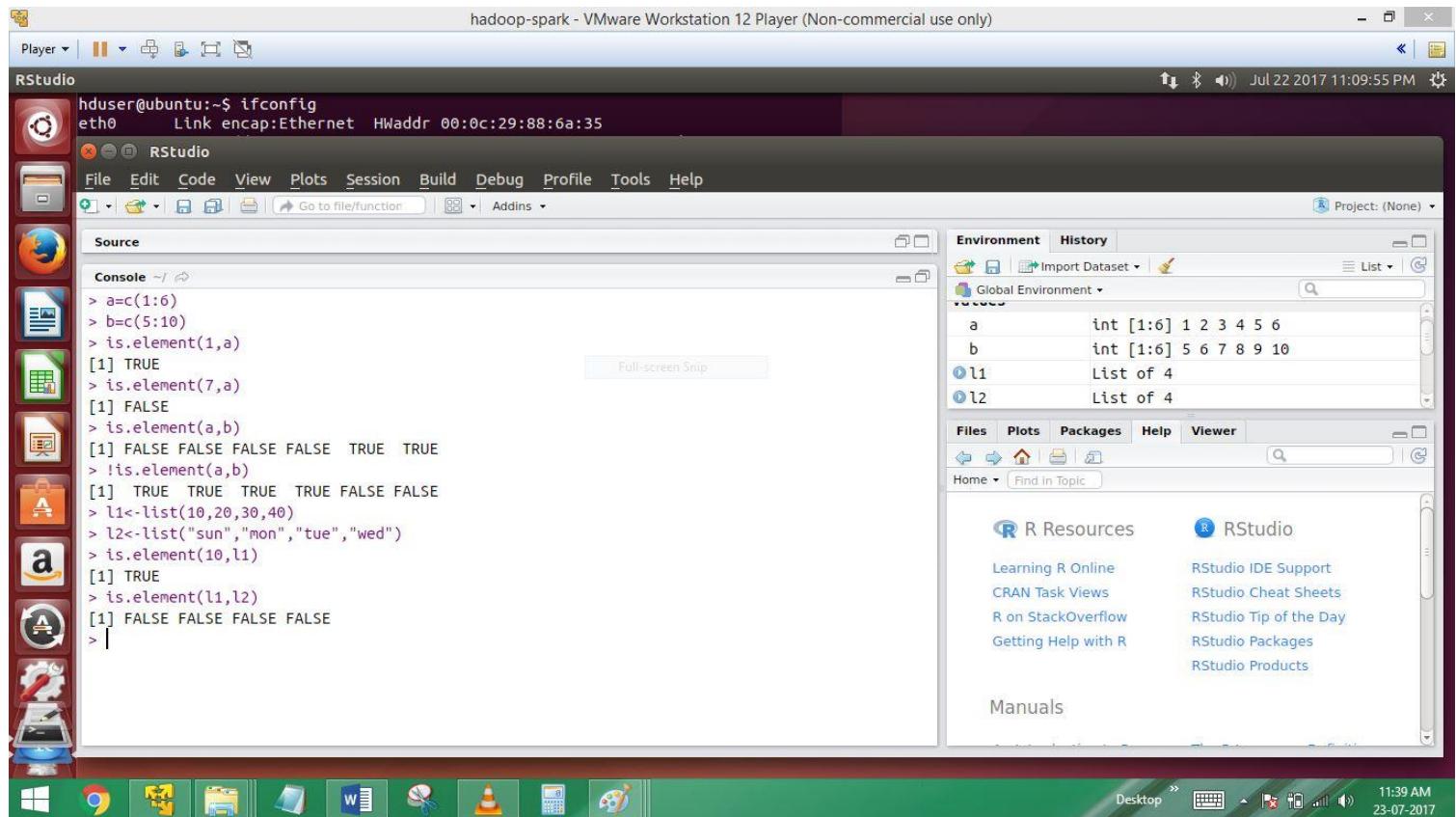
```
[1] 10
[[2]]
[1] 20
.
.
.
[[8]]
[1] wed
```

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

31) Is.element



The screenshot shows the RStudio interface running on a Windows desktop. The title bar reads "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The "Console" pane displays R code and its output:

```
> a=c(1:6)
> b=c(5:10)
> is.element(1,a)
[1] TRUE
> is.element(7,a)
[1] FALSE
> is.element(a,b)
[1] FALSE FALSE FALSE FALSE TRUE TRUE
> !is.element(a,b)
[1] TRUE TRUE TRUE TRUE FALSE FALSE
> l1<-list(10,20,30,40)
> l2<-list("sun","mon","tue","wed")
> is.element(10,l1)
[1] TRUE
> is.element(l1,l2)
[1] FALSE FALSE FALSE FALSE
>
```

The "Environment" pane shows the global environment with objects:

Object	Type	Value
a	int [1:6]	1 2 3 4 5 6
b	int [1:6]	5 6 7 8 9 10
l1	List of 4	
l2	List of 4	

Description :

Is.element is comparison : any one of the vector or number as well

In vector a having 1,2,3,4,5,6 elements & is.element(1,a) means → finding out a particular element in vector a

Is.element(a,b) means → finding out a elements in vector b to a(comparision)

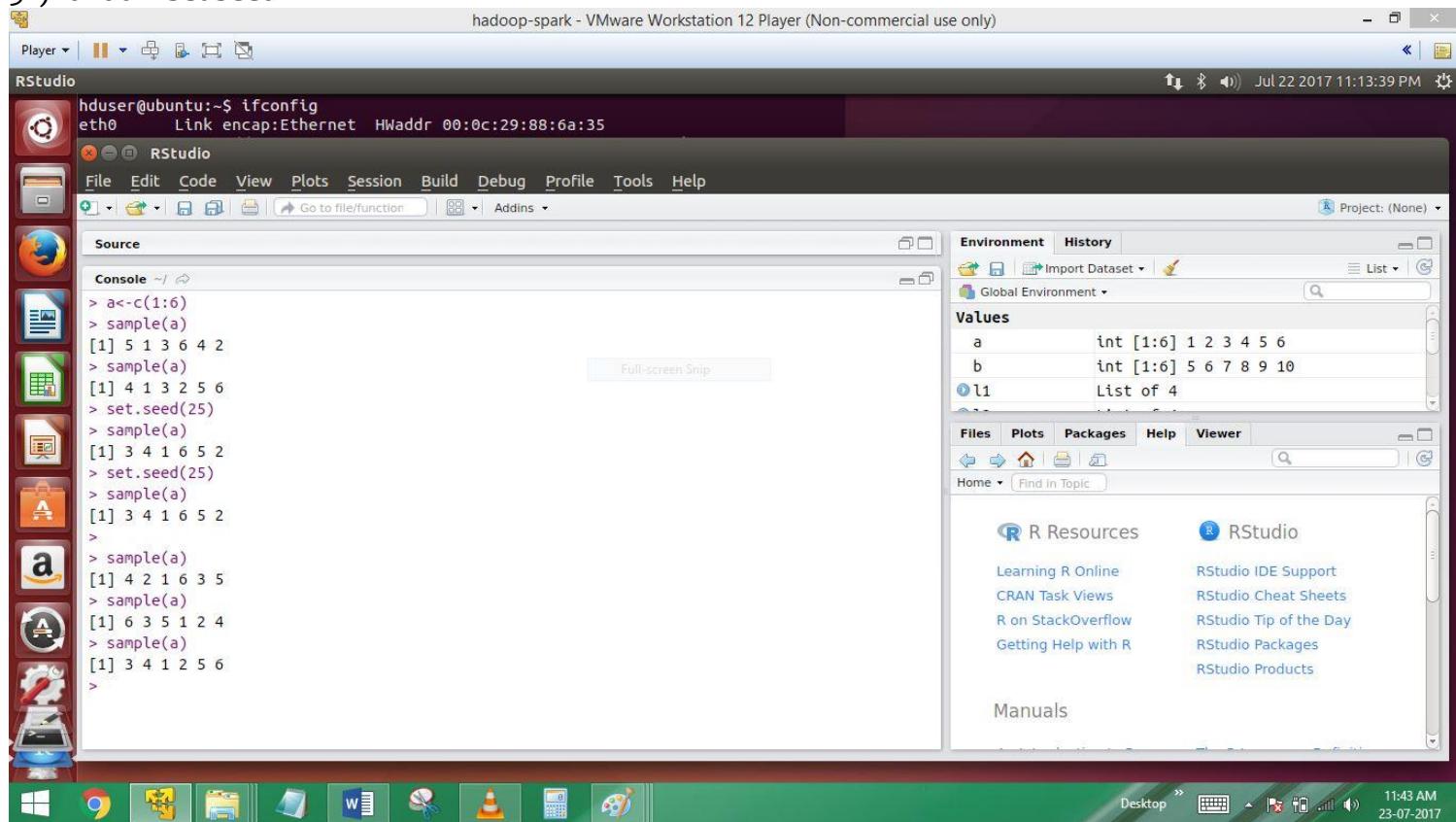
The o/p will be TRUE ?/FALSE

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

32)Random set.seed



The screenshot shows the RStudio interface running on a Windows desktop. The title bar says "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help. The Source tab in the left panel shows R code:

```
> a<-c(1:6)
> sample(a)
[1] 5 1 3 6 4 2
> sample(a)
[1] 4 1 3 2 5 6
> set.seed(25)
> sample(a)
[1] 3 4 1 6 5 2
> set.seed(25)
> sample(a)
[1] 3 4 1 2 5 6
>
```

The Environment tab in the right panel shows:

Values	Type	Content
a	int [1:6]	1 2 3 4 5 6
b	int [1:6]	5 6 7 8 9 10
l1	List of 4	

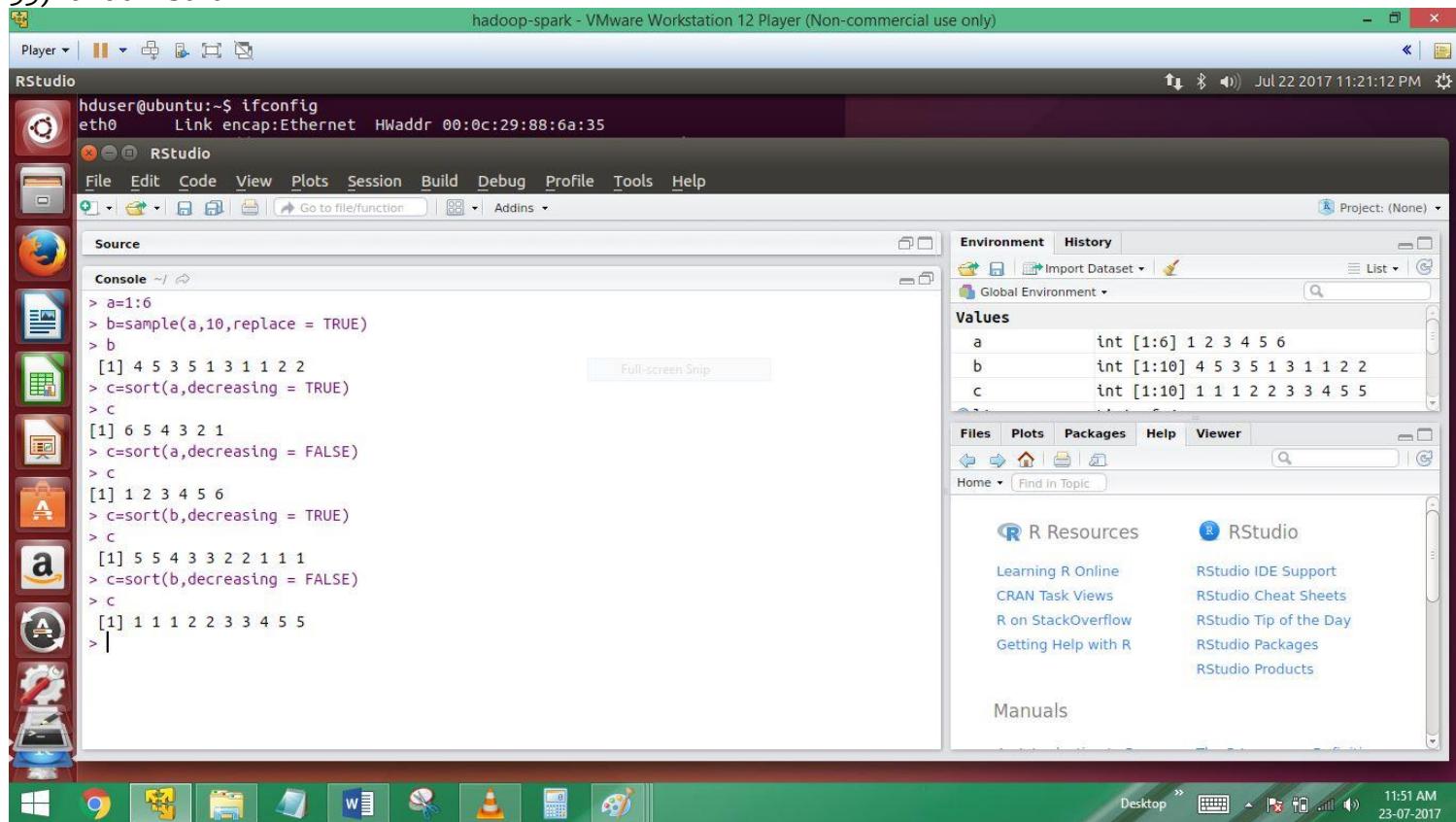
The bottom status bar shows the date and time: 23-07-2017 11:43 AM.

Description :

Sample function would pick the random numbers from the vector, ensure that the ordering of the element is same every time we use set.seed(20)..

In this case we want to random number every time will be displayed by set.seed(x) command is use the o/p will be every time will be same..

33)Random sort



The screenshot shows the RStudio interface running on a Windows desktop. The title bar says "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help. The Source tab in the left panel shows R code:

```
> a=1:6
> b=sample(a,10,replace = TRUE)
> b
[1] 4 5 3 5 1 3 1 1 2 2
> c=sort(a,decreasing = TRUE)
> c
[1] 6 5 4 3 2 1
> c=sort(a,decreasing = FALSE)
> c
[1] 1 2 3 4 5 6
> c=sort(b,decreasing = TRUE)
> c
[1] 5 5 4 3 3 2 2 1 1 1
> c=sort(b,decreasing = FALSE)
> c
[1] 1 1 1 2 2 3 3 4 5 5
> |
```

The Environment tab in the right panel shows:

Values	Type	Content
a	int [1:6]	1 2 3 4 5 6
b	int [1:10]	4 5 3 5 1 3 1 1 2 2
c	int [1:10]	1 1 1 2 2 3 3 4 5 5

The bottom status bar shows the date and time: 23-07-2017 11:51 AM.

Description :

Here a vector having 6 elements & a,10,replace =T)means number will be repeat with 1-10 numbers
Sort is used for ascending & descending order to elements

34) Sample sort rev order ascending

The screenshot shows an RStudio interface running on a Windows desktop. The RStudio window title is "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The R console window contains the following R code:

```
> a=1:10
> b=sample(a,10,replace = TRUE)
> c=sort(b,decreasing = TRUE)
> c
[1] 10 9 8 8 8 6 5 2 2 1
> c=sort(b,decreasing = FALSE)
> c
[1] 1 2 2 5 6 8 8 8 9 10
> c=rev(sort(b))
> c
[1] 10 9 8 8 8 6 5 2 2 1
> b=c(-1,100,2)
> b
[1] -1 100 2
> order(b)
[1] 1 3 2
> b=c(265564,72,6233)
> order(b)
[1] 2 3 1
> Ascending
```

The Environment pane shows the variables defined:

Values	Type	Content
a	int [1:10]	1 2 3 4 5 6 7 8 9 10
b	num [1:3]	265564 72 6233
c	int [1:10]	10 9 8 8 8 6 5 2 2 1

The status bar at the bottom right shows the date and time: 11:58 AM 23-07-2017.

Description :

Another command will be there in sort

C=(rev(sort(b)))

Sort(a,Decreasing=True)

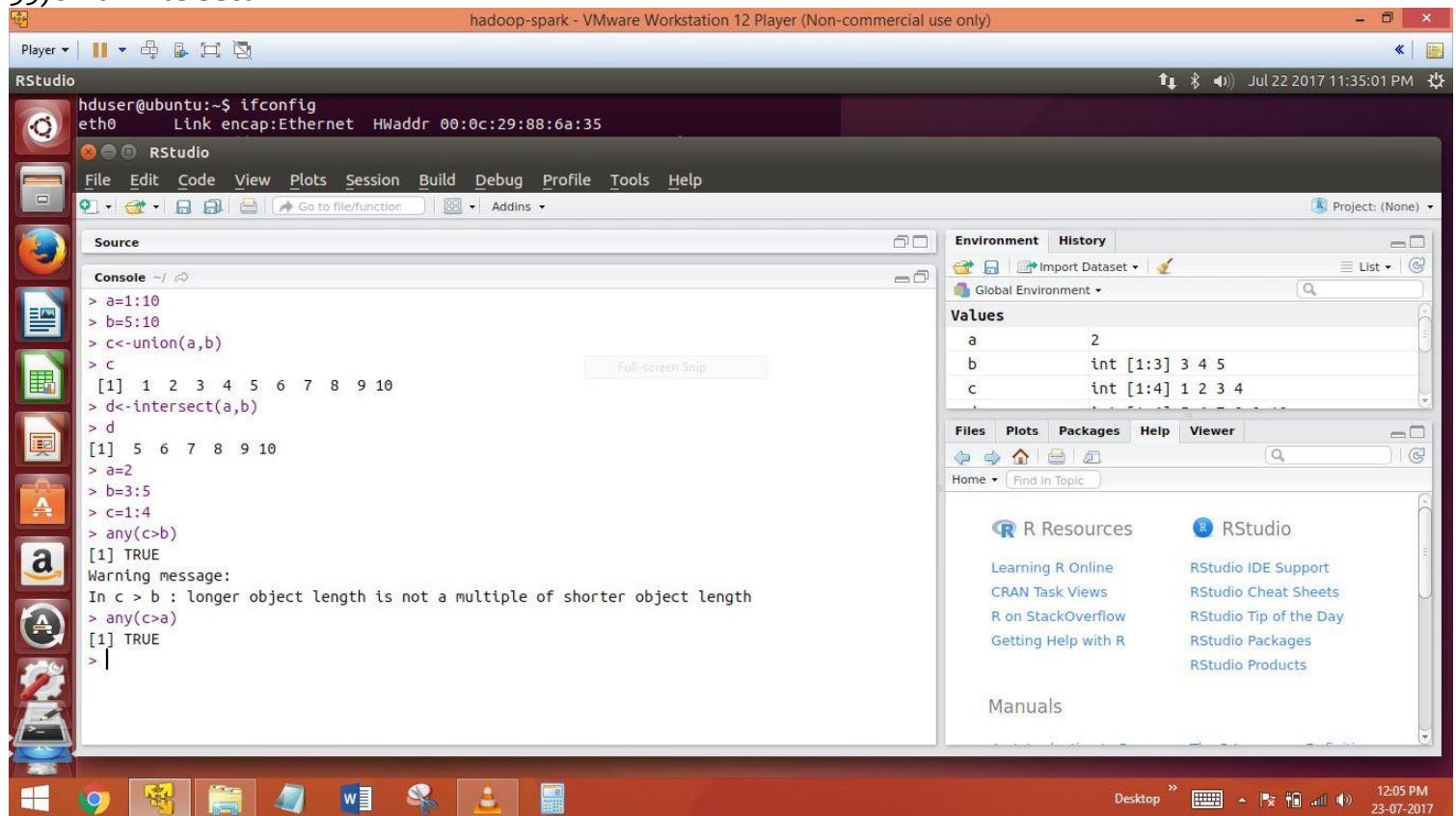
& Order will give the position of the elements in ascending order

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

35)Union Intersect



The screenshot shows the RStudio interface with the following details:

- Title Bar:** hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)
- Console Output:**

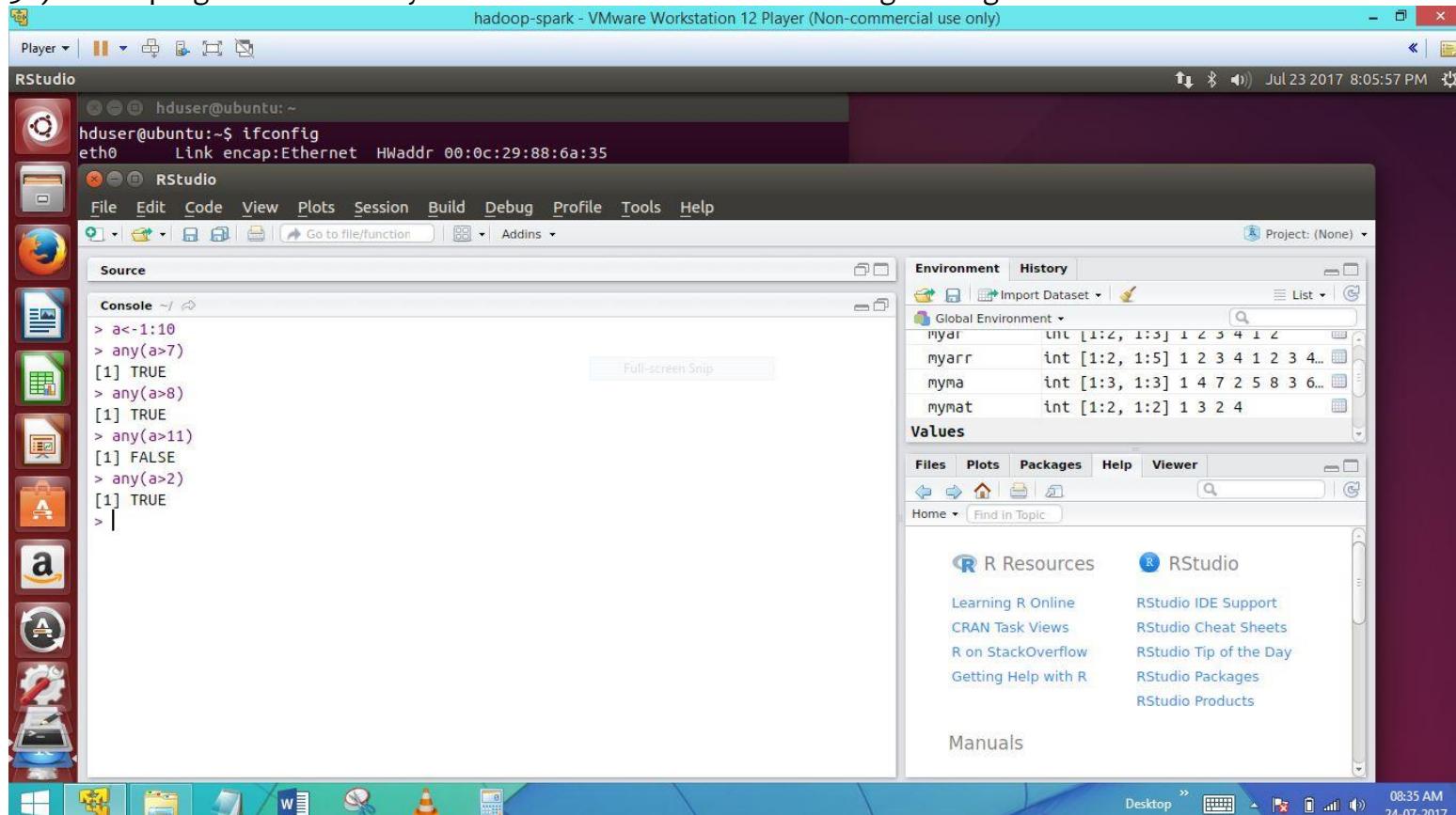
```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0c:29:88:6a:35
          ...
```

```
> a=1:10
> b=5:10
> c<-union(a,b)
> c
[1]  1  2  3  4  5  6  7  8  9 10
> d<-intersect(a,b)
> d
[1]  5  6  7  8  9 10
> a=2
> b=3:5
> c=1:4
> any(c>b)
[1] TRUE
Warning message:
In c > b : longer object length is not a multiple of shorter object length
> any(c>a)
[1] TRUE
[1] TRUE
> |
```
- Environment View:** Shows variables **a**, **b**, and **c**.
 - a**: int [1:10] 2
 - b**: int [1:3] 3 4 5
 - c**: int [1:4] 1 2 3 4
- RStudio Help:** Includes links to R Resources, RStudio Support, and Manuals.

Description :

In math function union means adding & Intersect means common elements of 2 functions..
Like here also a& b vectors , union will be merge 2 vectors & intersect will bring only common elements of a& b

36)Write a program in R where you would initialize a vector with integers range from 1 to 10



The screenshot shows the RStudio interface with the following details:

- Title Bar:** hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)
- Console Output:**

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0c:29:88:6a:35
          ...
```

```
> a<-1:10
> any(a>7)
[1] TRUE
> any(a>8)
[1] TRUE
> any(a>11)
[1] FALSE
> any(a>2)
[1] TRUE
> |
```
- Environment View:** Shows variables **myar**, **myarr**, **myma**, and **mymat**.
 - myar**: int [1:2, 1:3] 1 2 3 4 1 2
 - myarr**: int [1:2, 1:5] 1 2 3 4 1 2 3 4
 - myma**: int [1:3, 1:8] 1 4 7 2 5 8 3 6
 - mymat**: int [1:2, 1:2] 1 3 2 4
- RStudio Help:** Includes links to R Resources, RStudio Support, and Manuals.

Assignment 2
TERMINOLOGY IN R

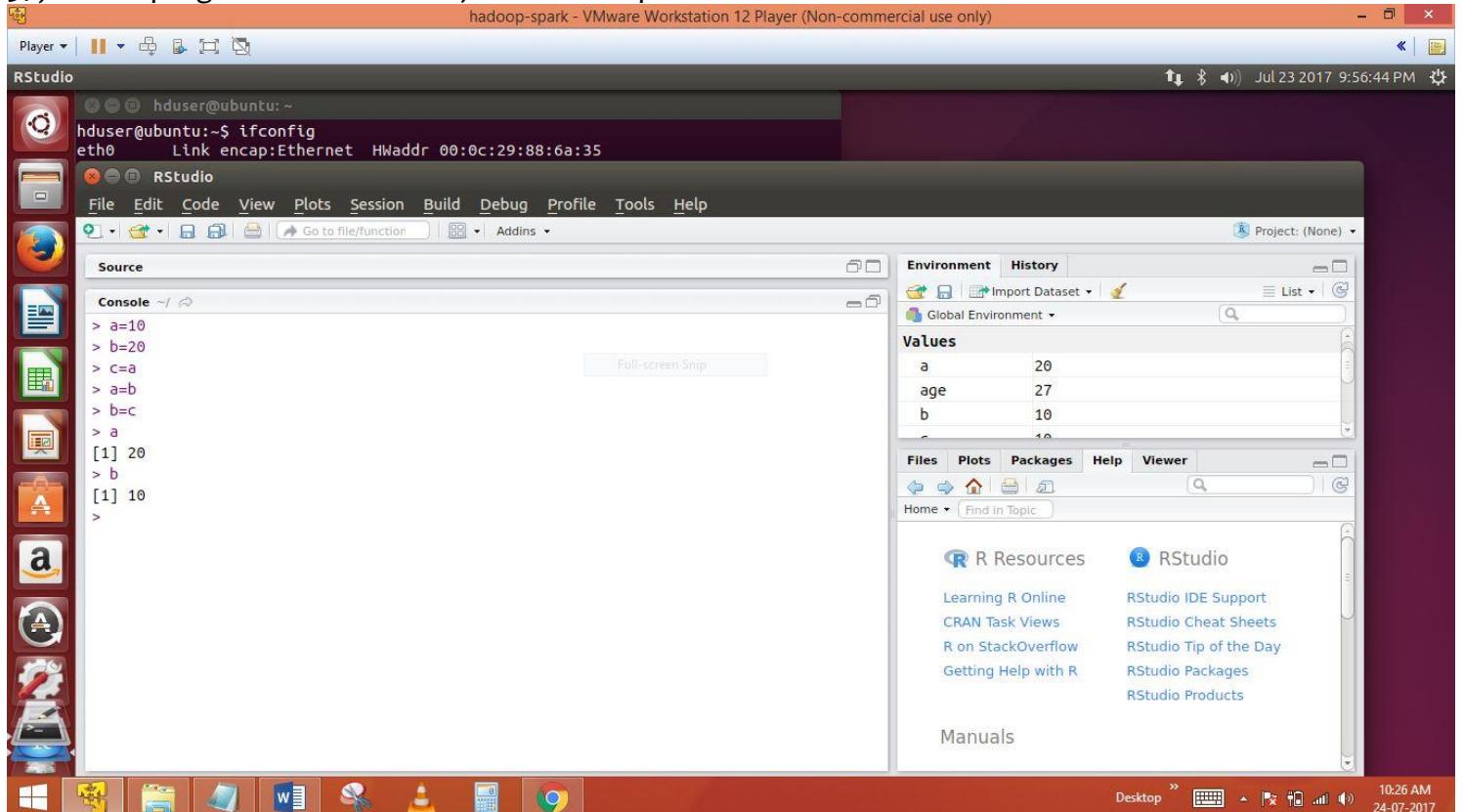
THEJA BODDU

9912054321

Description :

Vector having 1-10 elements range, here I am checking which number is greater than 7 by using {any(a>7)}
The o/p will be displayed by logical..
If the element is greater than 7 the o/p will be TRUE,

37) Write a program to initialize 2 objects and swap their contents..



The screenshot shows the RStudio interface running on a Windows desktop. The top bar displays the title "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, and Help. The left sidebar contains icons for various applications like Player, RStudio, and Firefox. The main console window shows the following R code and output:

```
> a=10
> b=20
> c=a
> a=b
> b=c
> a
[1] 20
> b
[1] 10
>
```

The Environment pane on the right shows the current global environment with the following values:

Values	20
a	20
age	27
b	10
c	10

The R Resources and RStudio sections provide links to various R-related resources.

Description :

A=10

B=20

By using this we can swap a=20 & b=10

First we create one temp vector , that vector I assign a value,

After a = b will be assign & b = c will be assigned accordingly..

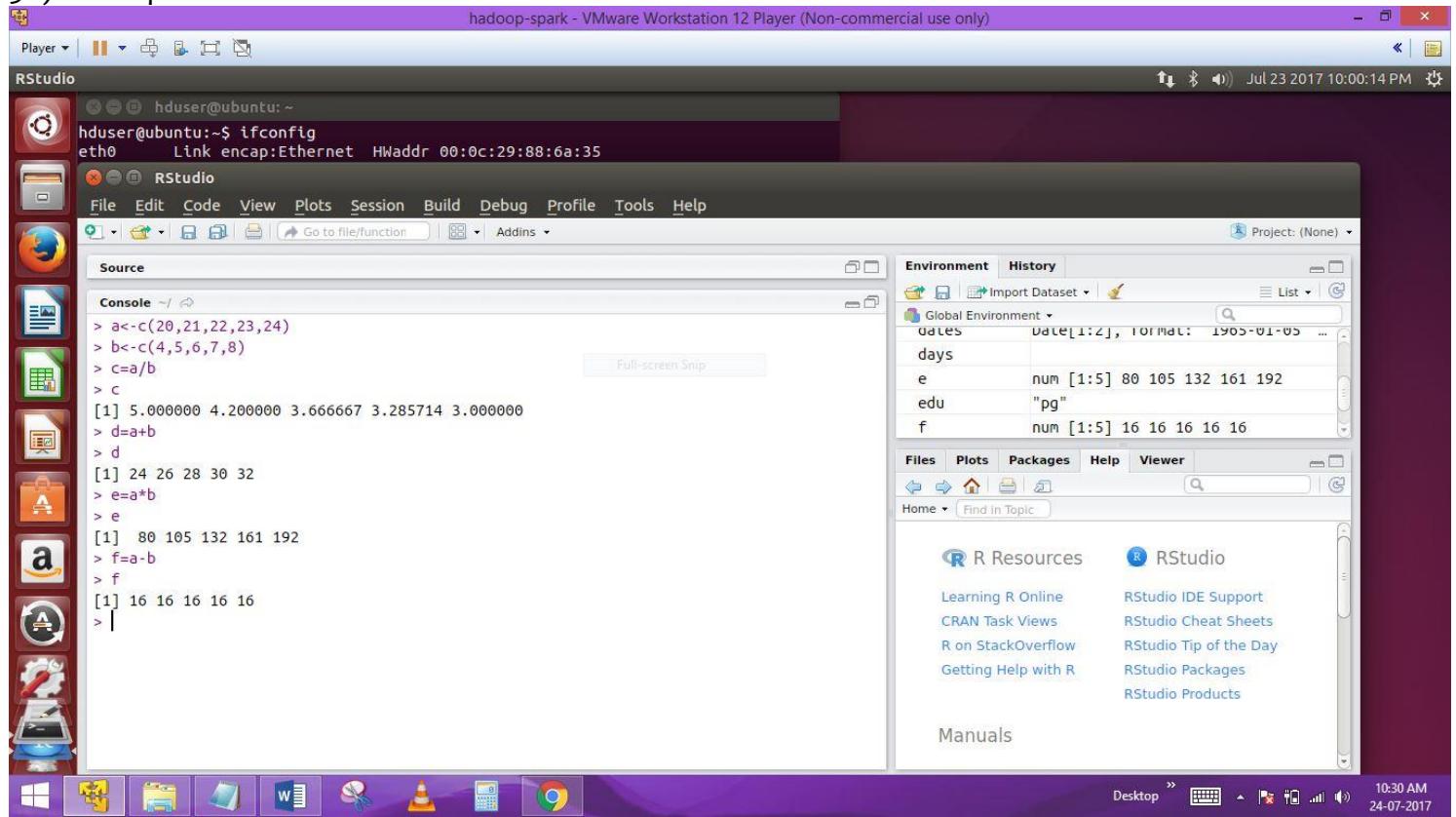
Automatically the values will be changed by a=20 ; b=10..

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

38) Math operations to 2 vectors



The screenshot shows the RStudio interface running on a Windows desktop. The console window displays the following R code and its output:

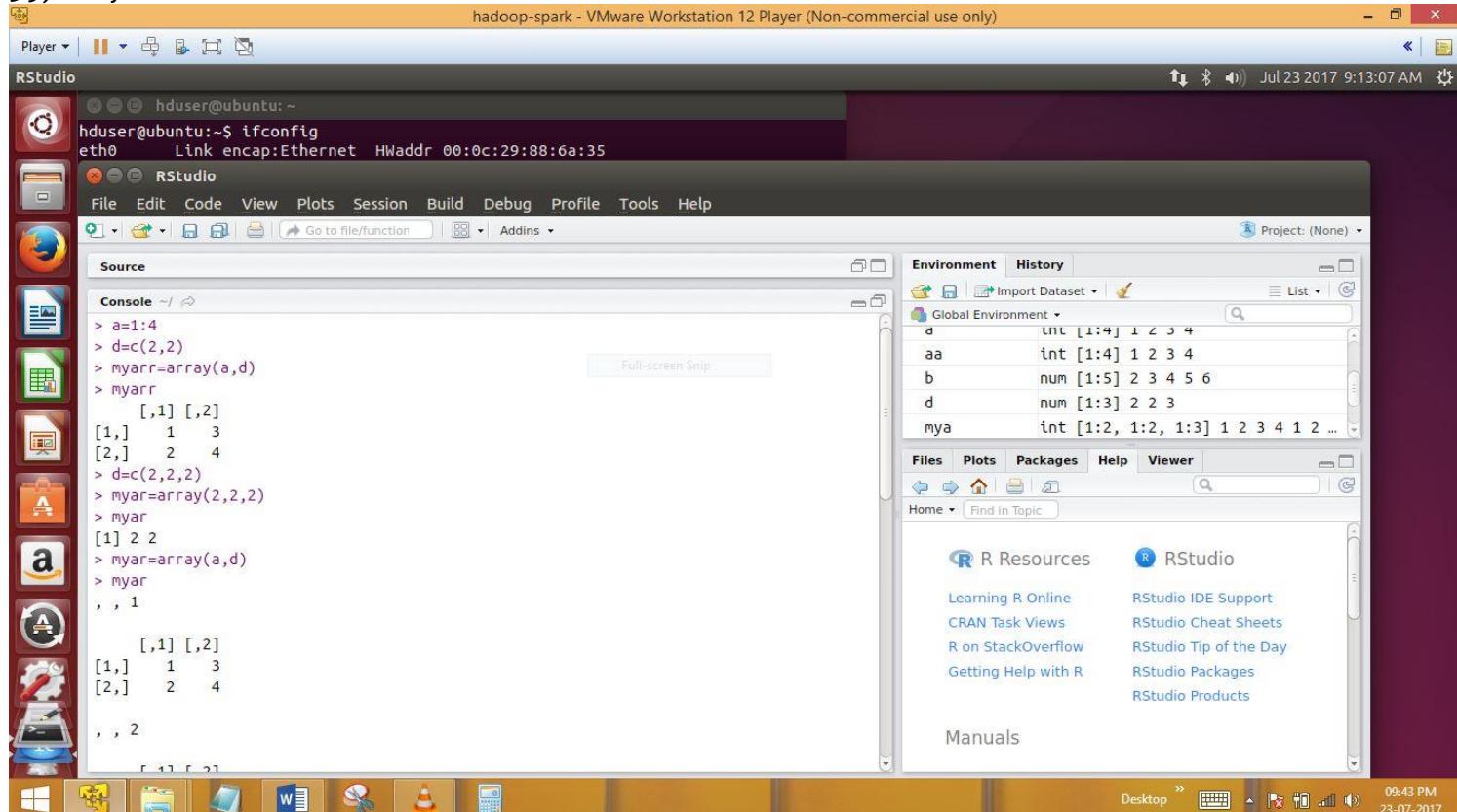
```
> a<-c(20,21,22,23,24)
> b<-c(4,5,6,7,8)
> c=a/b
> c
[1] 5.000000 4.200000 3.666667 3.285714 3.000000
> d=a+b
> d
[1] 24 26 28 30 32
> e=a*b
> e
[1] 80 105 132 161 192
> f=a-b
> f
[1] 16 16 16 16 16
> |
```

The environment pane shows variables `a`, `b`, `c`, `d`, `e`, and `f` defined in the global environment.

Description :

by using math operations also we can do some calculations, `a` & `b` 2 vectors & `c` is the math operation vector we can perform `a+b`,`a/b`,`a*b`,`a-b`.. operations as well..

39) Array 2x2



The screenshot shows the RStudio interface running on a Windows desktop. The console window displays the following R code and its output:

```
> a=1:4
> d=(2,2)
> myarr=array(a,d)
> myarr
[,1] [,2]
[1,]    1    3
[2,]    2    4
> d=c(2,2,2)
> myarr=array(2,2,2)
> myarr
[1] 2 2
> myarr=array(a,d)
> myarr
, , 1
[,1] [,2]
[1,]    1    3
[2,]    2    4
, , 2
```

The environment pane shows variables `a`, `d`, `myarr`, `aa`, `b`, `d`, and `mya` defined in the global environment.

Description :

By using array function the above statement will be produce a 2 dimensional array with 2 rows & 2 columns.

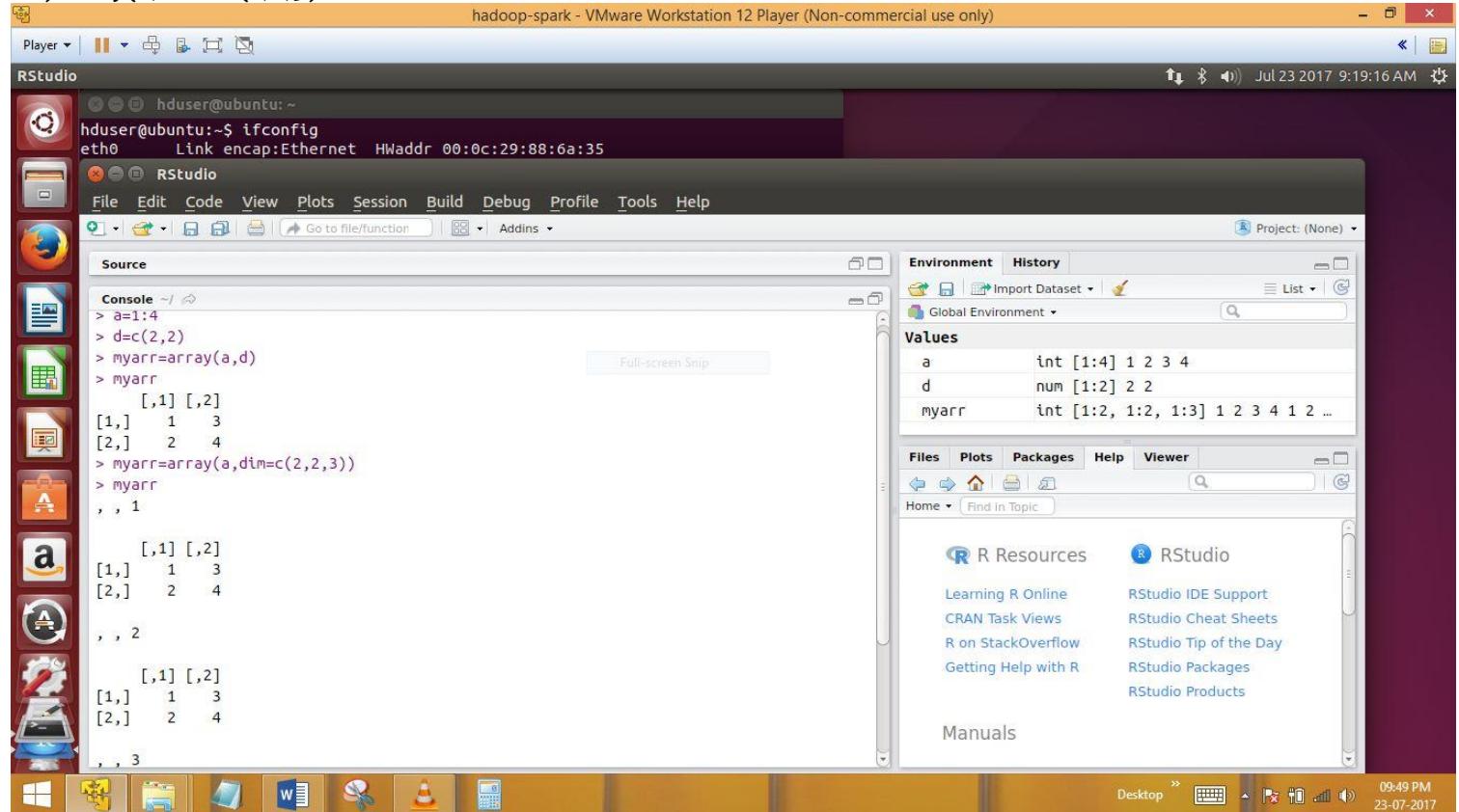
Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

Array(2,2,2) means 1st (2,2) is rows & columns & another 2 is repeating value in matrix

40) `Array(a,dim=c(2,2,3))`



Description :

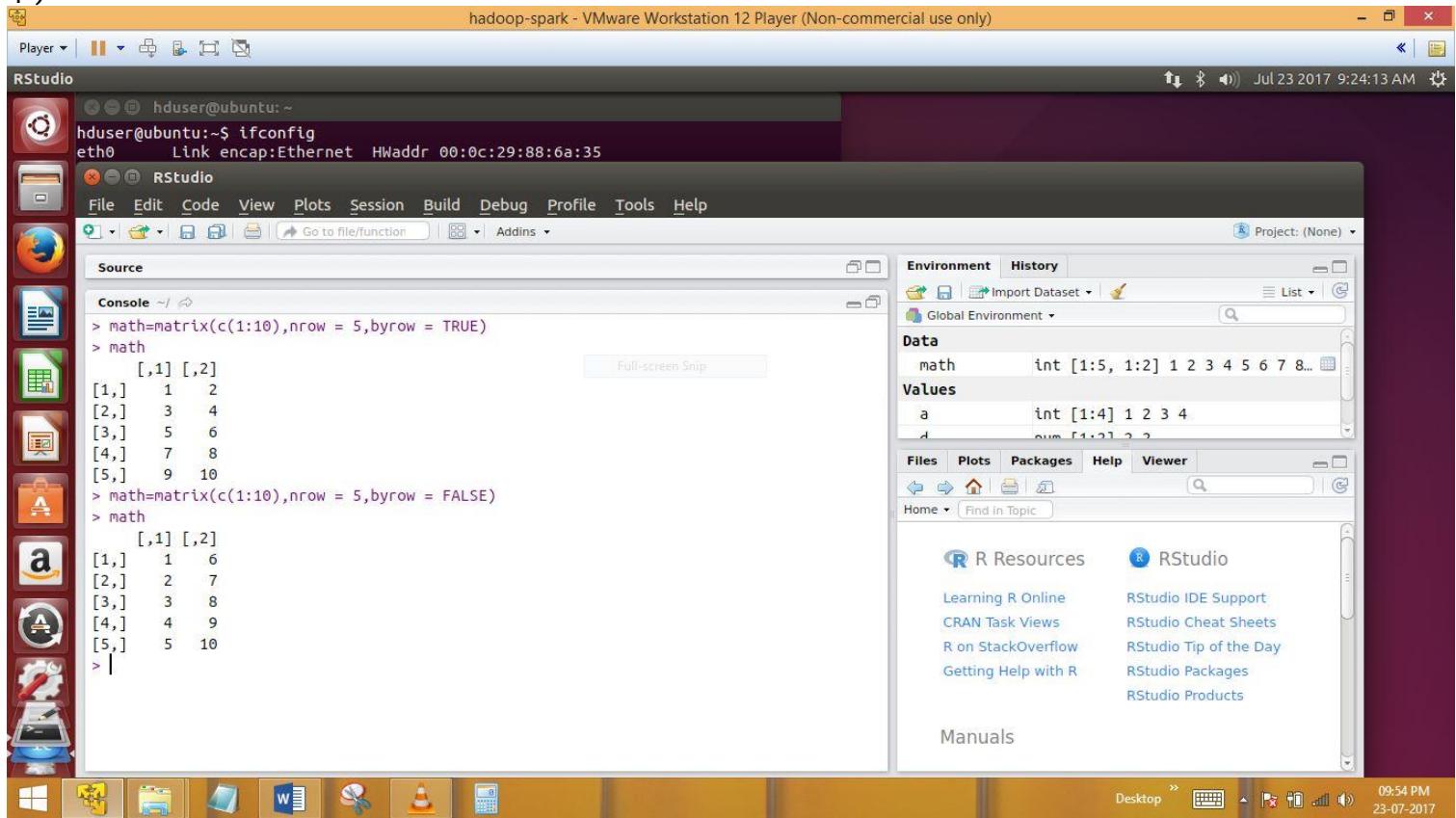
A is vector & d is vector , when we assign array to (a,d), it will display to rows & columns.
2,2,3 means rows ,columns,dimensions

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

41)Matrix



The screenshot shows the RStudio interface running on a Windows desktop. The console window displays two examples of creating matrices:

```
> math=matrix(c(1:10),nrow = 5,byrow = TRUE)
> math
 [,1] [,2]
[1,] 1 2
[2,] 3 4
[3,] 5 6
[4,] 7 8
[5,] 9 10

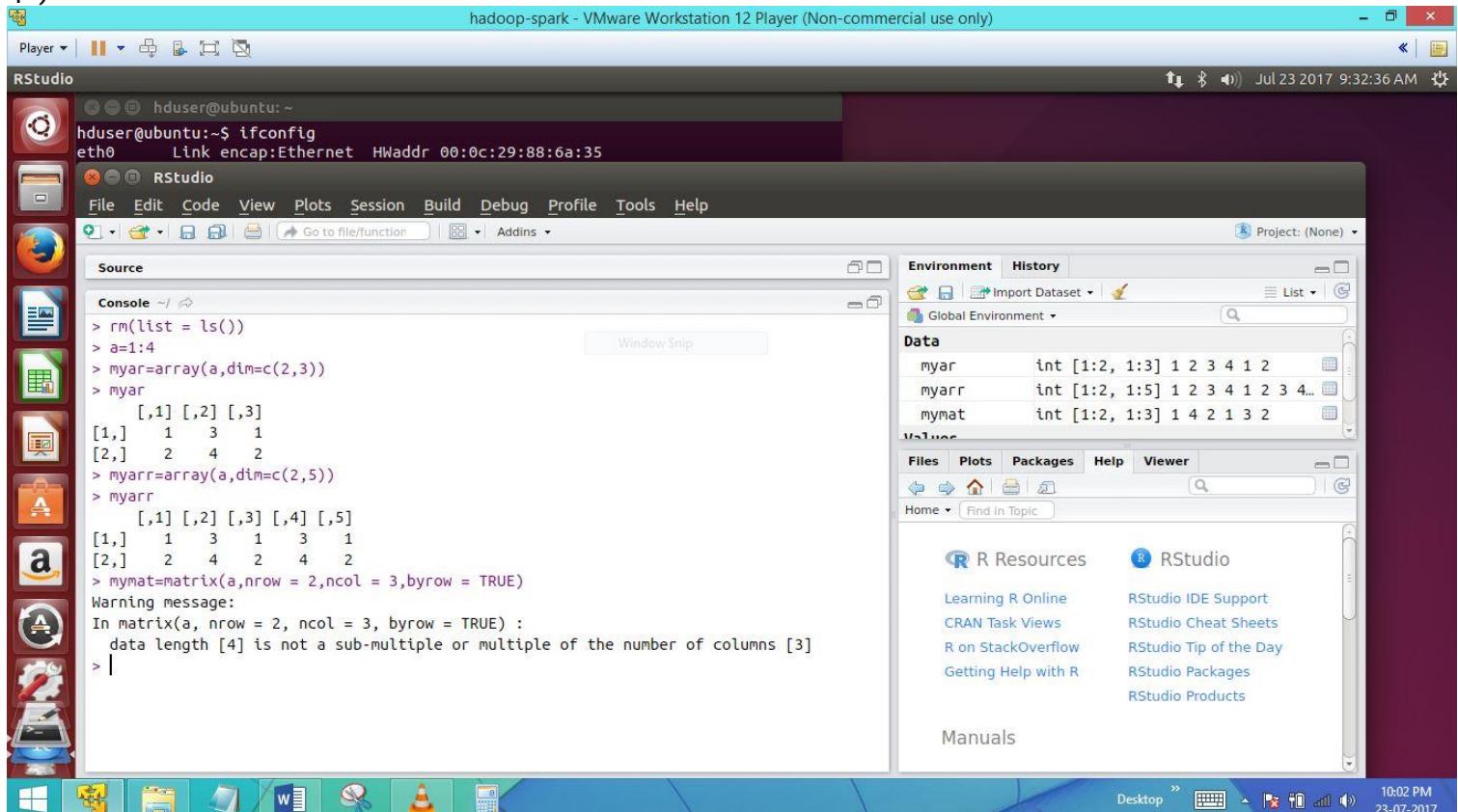
> math=matrix(c(1:10),nrow = 5,byrow = FALSE)
> math
 [,1] [,2]
[1,] 1 6
[2,] 2 7
[3,] 3 8
[4,] 4 9
[5,] 5 10
```

The RStudio interface includes a sidebar with various icons, a top bar with tabs like Environment, History, Data, and Values, and a bottom status bar showing the date and time.

Description :

Matrix function involves to arrange the elements in rows ,columns & vector length also ascending & decending order follows..

42)Matrix nrow ncol



The screenshot shows the RStudio interface running on a Windows desktop. The console window displays code for creating matrices with specific dimensions:

```
> rm(list = ls())
> a=1:4
> myar=array(a,dim=c(2,3))
> myar
 [,1] [,2] [,3]
[1,] 1 3 1
[2,] 2 4 2

> myarr=array(a,dim=c(2,5))
> myarr
 [,1] [,2] [,3] [,4] [,5]
[1,] 1 3 1 3 1
[2,] 2 4 2 4 2

> mymat=matrix(a,nrow = 2,ncol = 3,byrow = TRUE)
Warning message:
In matrix(a, nrow = 2, ncol = 3, byrow = TRUE) :
  data length [4] is not a sub-multiple or multiple of the number of columns [3]
```

The RStudio interface includes a sidebar with various icons, a top bar with tabs like Environment, History, Data, and Values, and a bottom status bar showing the date and time.

Description :

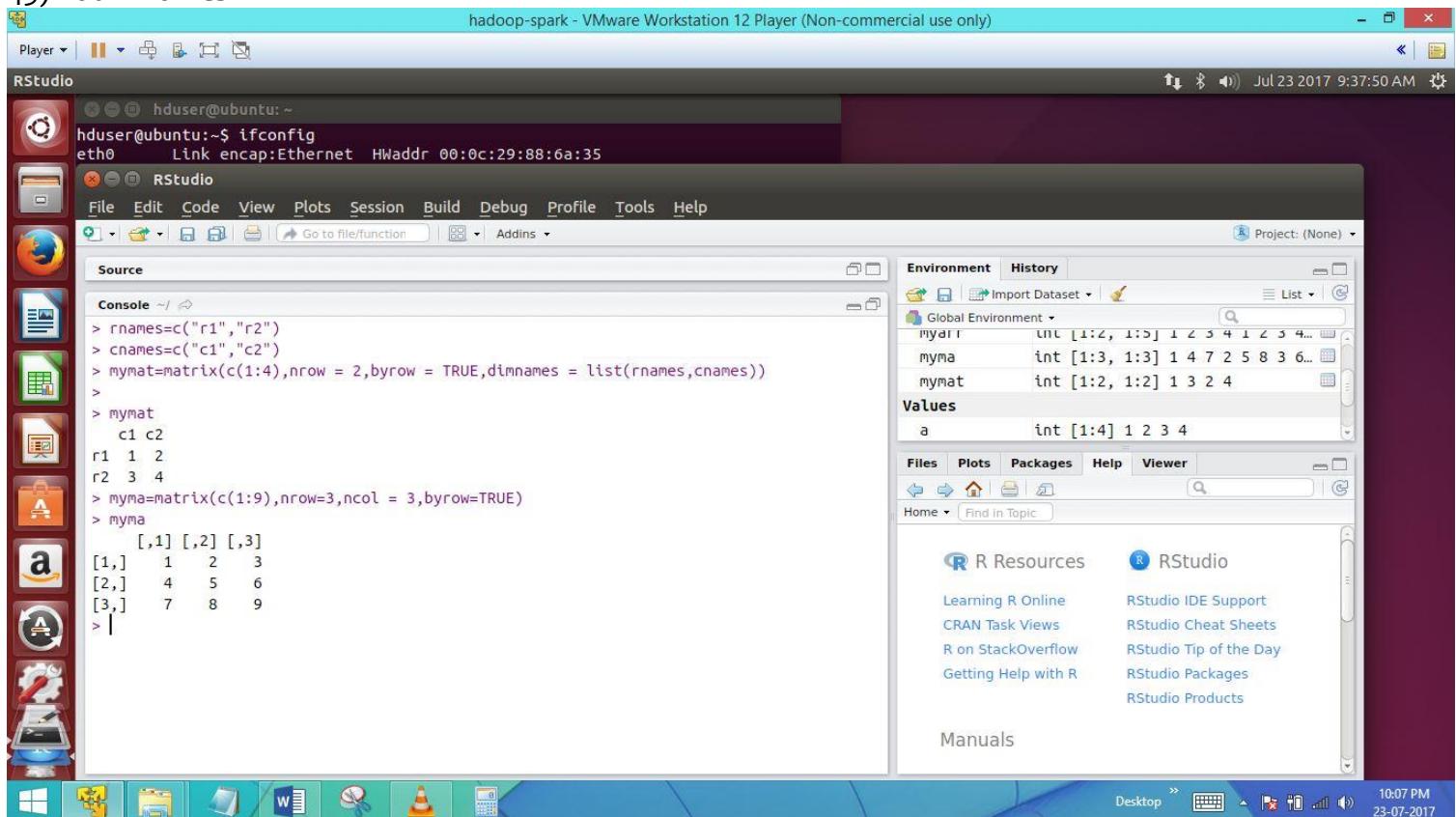
In array matrix we will arrange rows & columns & dimensions also, with repeated elements.

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

43) Matrix names



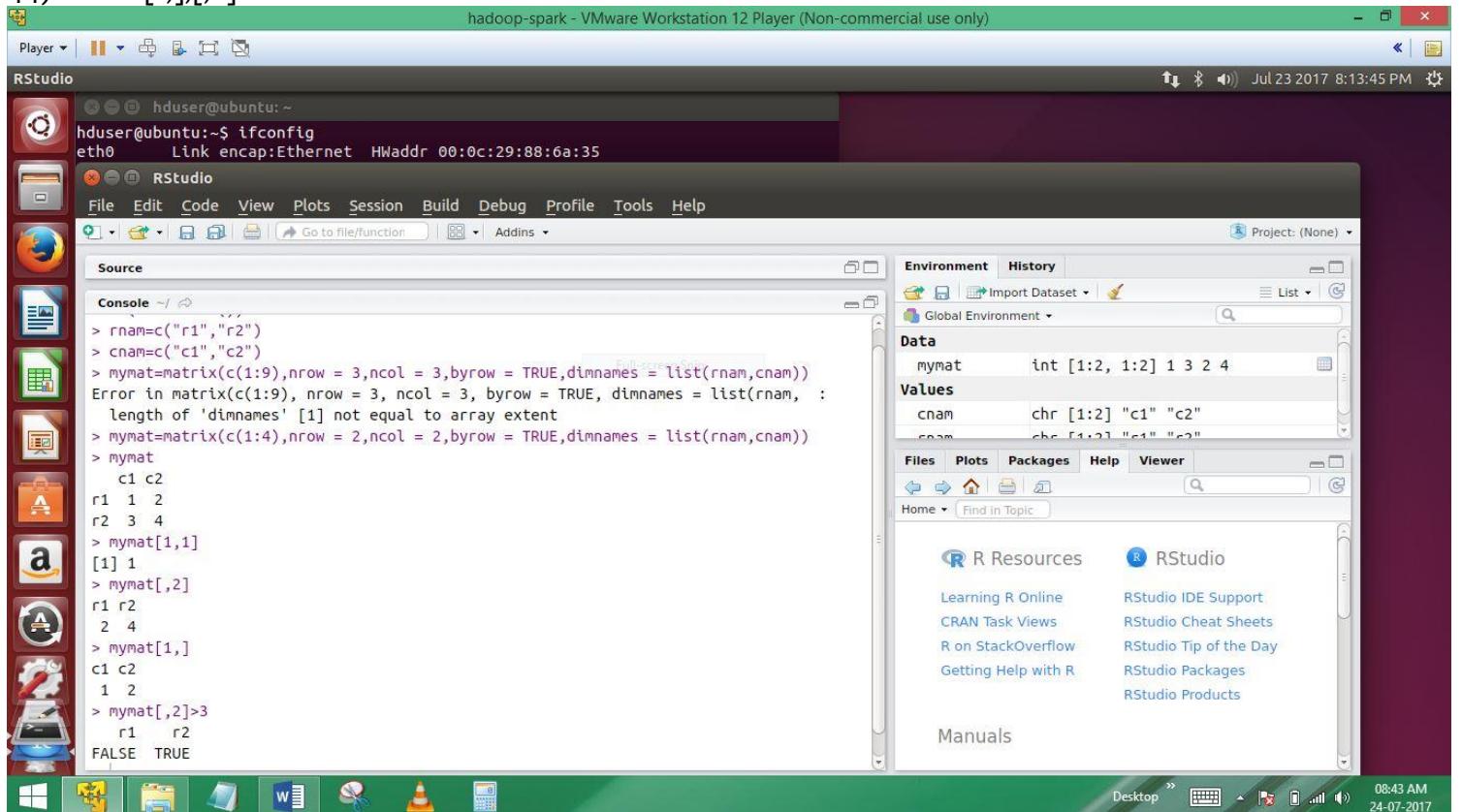
The screenshot shows the RStudio interface running on a Windows desktop. The console window displays R code for creating matrices with named rows and columns. The environment pane shows the resulting objects: 'mydf' (a data frame), 'myma' (an integer matrix), and 'mymat' (another integer matrix). The RStudio sidebar includes links to R Resources and RStudio products.

```
> rnames=c("r1","r2")
> cnames=c("c1","c2")
> mymat=matrix(c(1:4),nrow = 2,byrow = TRUE,dimnames = list(rnames,cnames))
>
> mymat
   c1 c2
r1  1  2
r2  3  4
> myma=matrix(c(1:9),nrow=3,ncol = 3,byrow=TRUE)
> myma
 [,1] [,2] [,3]
[1,]    1    2    3
[2,]    4    5    6
[3,]    7    8    9
>
```

Description :

Here we are assigning names to rows & columns & dimnames is the function to assign the element names to vector

44) Matrix [1],[,2]



The screenshot shows the RStudio interface running on a Windows desktop. The console window displays R code for creating a matrix and then indexing it to show specific elements and conditions. The environment pane shows the matrix 'mymat' and its dimensions. The RStudio sidebar includes links to R Resources and RStudio products.

```
> rnam=c("r1","r2")
> cnam=c("c1","c2")
> mymat=matrix(c(1:9),nrow = 3,ncol = 3,byrow = TRUE,dimnames = list(rnam,cnam))
Error in matrix(c(1:9), nrow = 3, ncol = 3, byrow = TRUE, dimnames = list(rnam, :
  length of 'dimnames' [1] not equal to array extent
> mymat=matrix(c(1:4),nrow = 2,ncol = 2,byrow = TRUE,dimnames = list(rnam,cnam))
> mymat
   c1 c2
r1  1  2
r2  3  4
> mymat[1,1]
[1] 1
> mymat[,2]
r1 r2
 2  4
> mymat[1,]
c1 c2
 1  2
> mymat[,2]>3
  r1   r2
FALSE TRUE
```

Description :

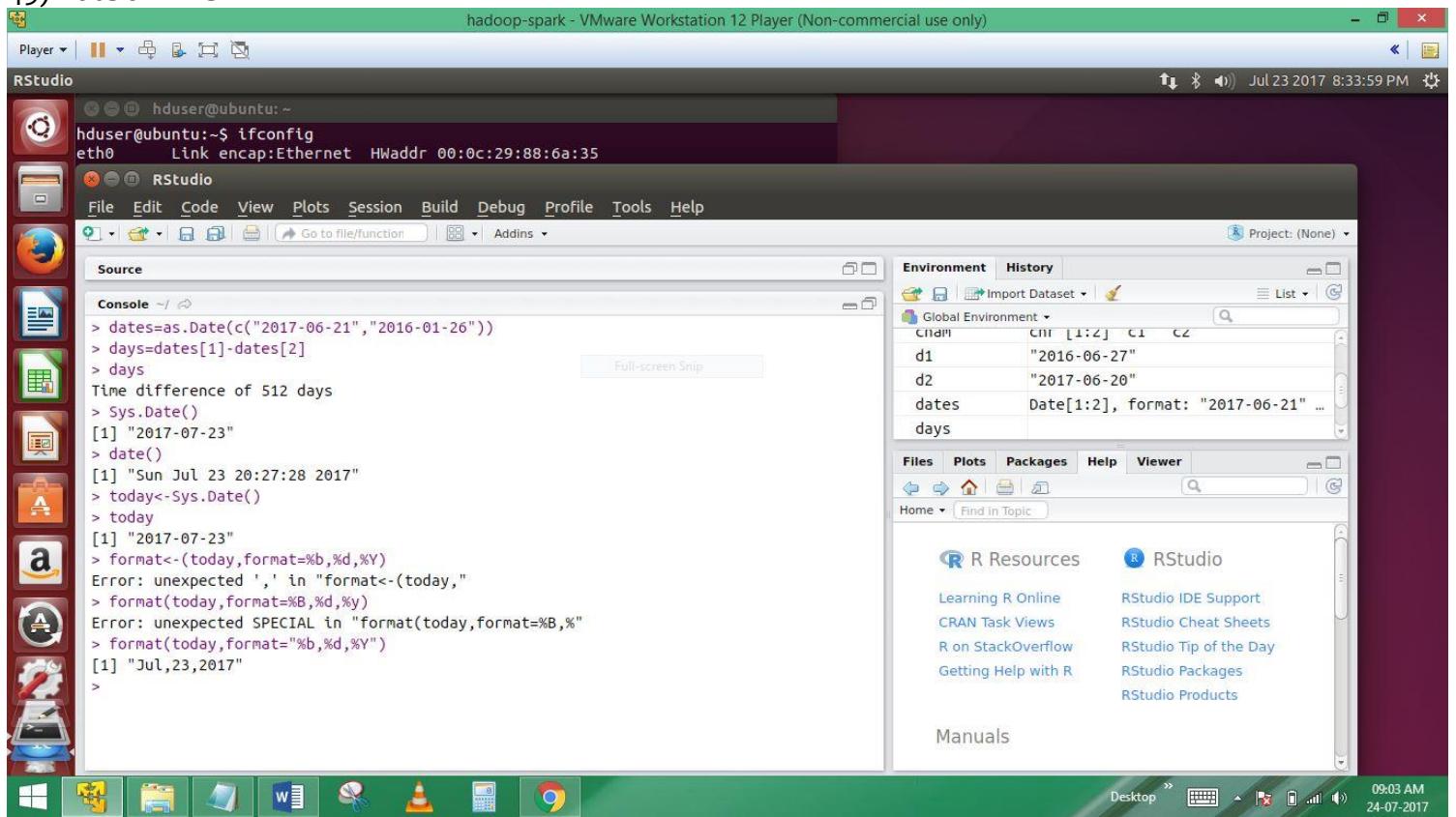
Here indexing to the matrix & dimnames & conditions also shown by the above function with o/p TRUE or FALSE

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

45) Date & Time



The screenshot shows an RStudio interface running on a Windows desktop. The title bar indicates the session is titled "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The Source tab in the top-left contains R code demonstrating date calculations and format conversion. The Environment tab in the top-right shows the global environment with objects like d1, d2, dates, and days. The History tab is also visible. The bottom right corner of the screen shows the Windows taskbar with icons for various applications and the system clock.

```
hduser@ubuntu:~$ ifconfig
eth0      Link encap:Ethernet HWaddr 00:0c:29:88:6a:35
          ... (output truncated)

Source
Console ~/ ~
> dates=as.Date(c("2017-06-21","2016-01-26"))
> days=dates[1]-dates[2]
> days
Time difference of 512 days
> Sys.Date()
[1] "2017-07-23"
> date()
[1] "Sun Jul 23 20:27:28 2017"
> today<-Sys.Date()
> today
[1] "2017-07-23"
> format<-(today,format="%b,%d,%Y")
Error: unexpected ',' in "format<-(today,"
> format(today,format="%B,%d,%Y")
Error: unexpected SPECIAL in "format(today,format=%B,%""
> format(today,format="%b,%d,%Y")
[1] "Jul,23,2017"
>
```

Environment

Global Environment	c1a1	c11	c12
d1	"2016-06-27"		
d2	"2017-06-20"		
dates	Date[1:2], format: "2017-06-21" ...		
days			

History

Files Plots Packages Help Viewer

R Resources

- Learning R Online
- CRAN Task Views
- R on StackOverflow
- Getting Help with R
- RStudio IDE Support
- RStudio Cheat Sheets
- RStudio Tip of the Day
- RStudio Packages
- RStudio Products

Manuals

09:03 AM
24-07-2017

Description :

Sys.Date() returns today's date.

Date() returns the current date and time Date day year conversion

%d → days as a num → 1-31

%a %A → abbreviation weekday & unabbreviation weekday → Mon/Monday

%m → month → 00-12

%b %B → abbreviation month & unabbreviation month → Jan./January

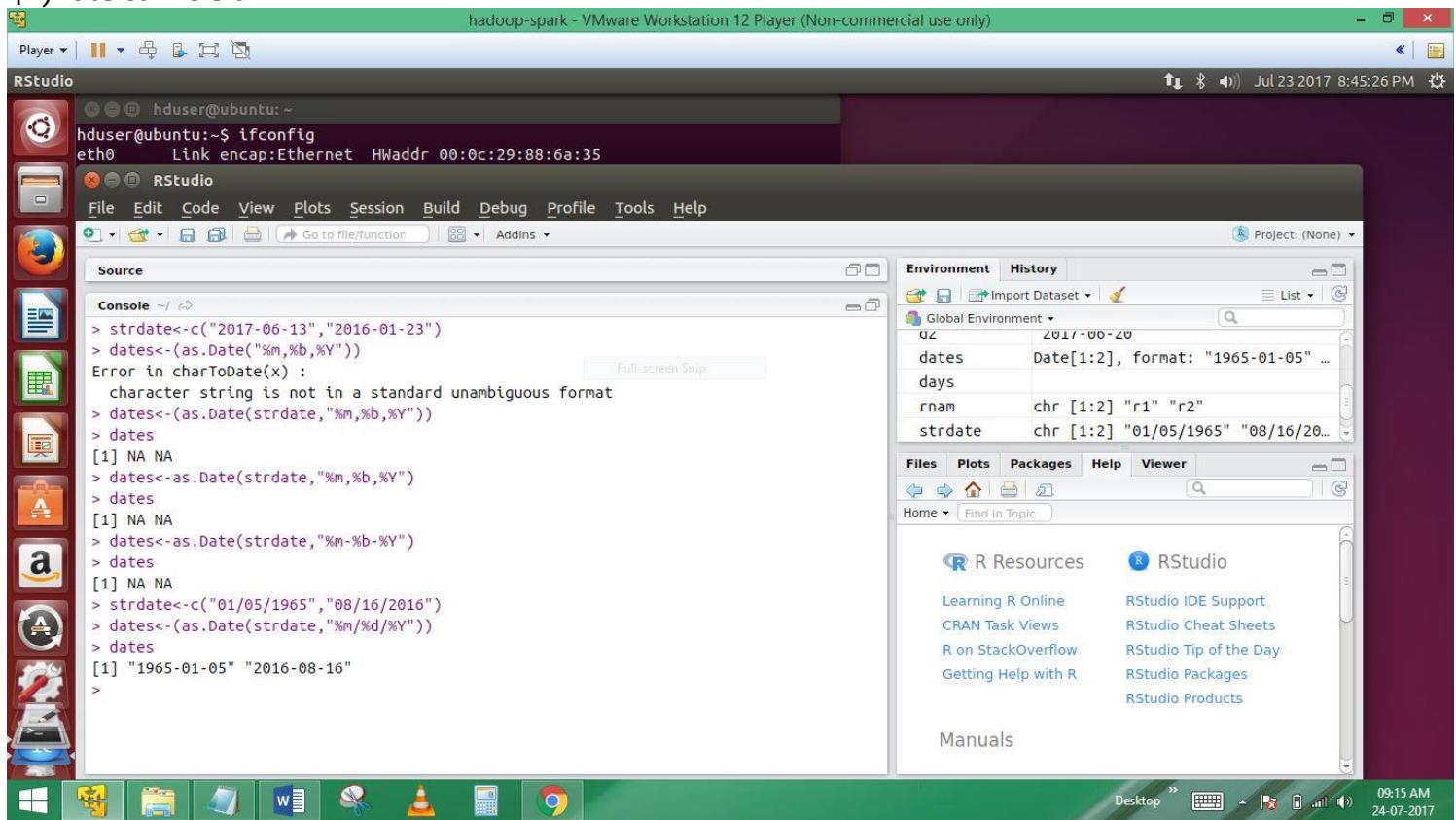
%y %Y → 2 digit // 4 digit → 99//1999

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

46) Date conversion



The screenshot shows an RStudio interface running on a Linux desktop. The title bar indicates the session is titled "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The left sidebar contains icons for various applications like Player, RStudio, and Firefox. The main window has a "Source" tab open, showing R code in the console:

```
> strdate<-c("2017-06-13","2016-01-23")
> dates<-as.Date("%m,%b,%Y")
Error in charToDate(x) :
  character string is not in a standard unambiguous format
> dates<-as.Date(strdate,"%m,%b,%Y")
> dates
[1] NA NA
> dates<-as.Date(strdate,"%m,%b,%Y")
> dates
[1] NA NA
> dates<-as.Date(strdate,"%m-%b-%Y")
> dates
[1] NA NA
> strdate<-c("01/05/1965","08/16/2016")
> dates<-as.Date(strdate,"%m/%d/%Y")
> dates
[1] "1965-01-05" "2016-08-16"
>
```

The "Environment" pane on the right shows variables defined in the global environment:

Variable	Type	Value
strdate	Date	[1:2], format: "1965-01-05" ...
dates	Date	[1:2], format: "1965-01-05" ...
days	chr	[1:2] "r1" "r2"
rnam	chr	[1:2] "01/05/1965" "08/16/2016"

The status bar at the bottom shows the date and time as 24-07-2017 09:15 AM.

Description :

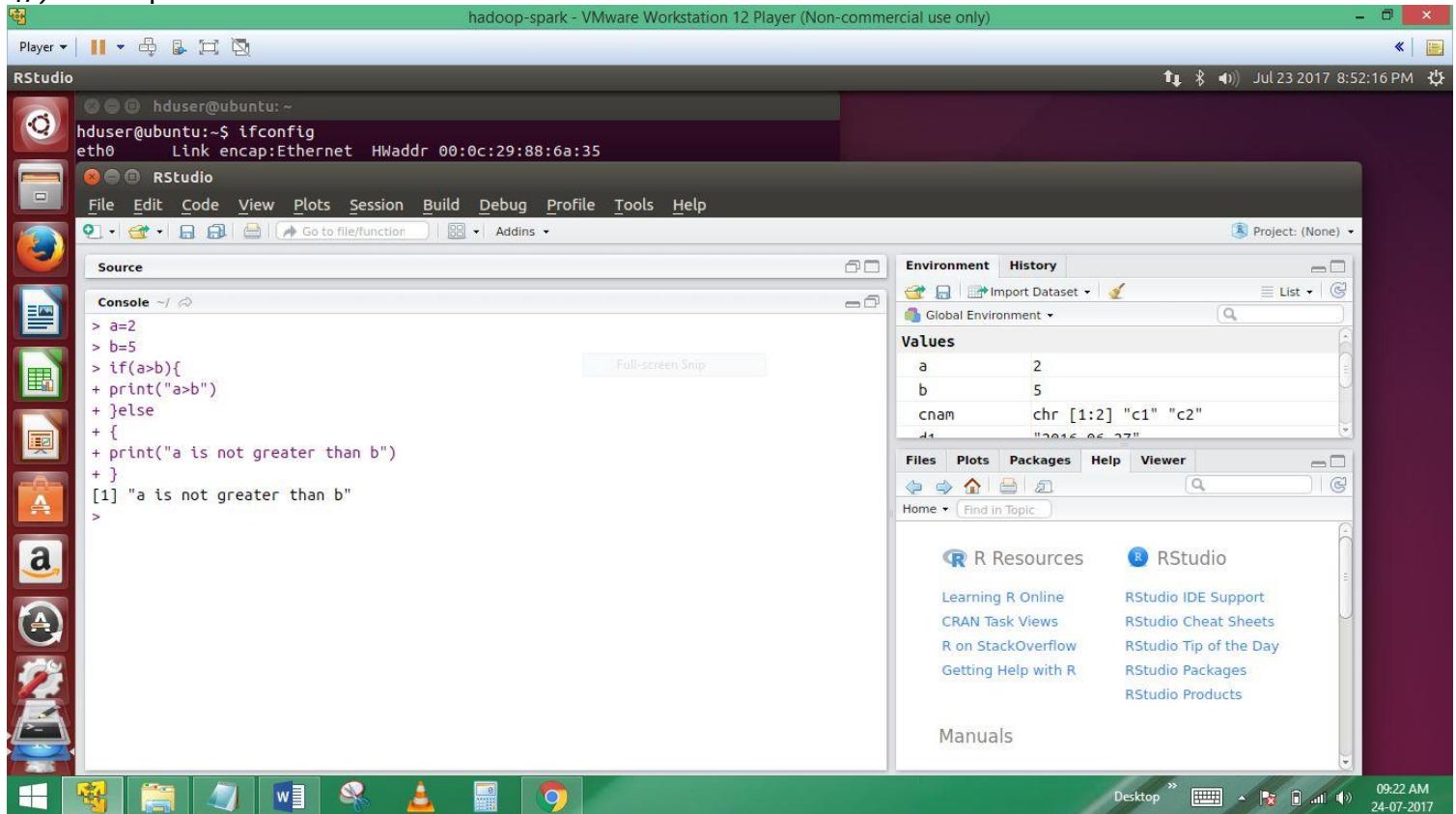
We can use the **as.Date()** function to convert character data to dates. The format is **as.Date(x, "format")**, where x is the character data and format gives the appropriate format. Operations

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

47)if else operation



The screenshot shows the RStudio interface running on a Linux desktop. The top bar displays the title "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, and Help. The left sidebar contains icons for various RStudio features like Player, RStudio, and Addins. The main console window shows the following R code and output:

```
> a=2  
> b=5  
> if(a>b){  
+ print("a>b")  
+ }else  
+ {  
+ print("a is not greater than b")  
+ }  
[1] "a is not greater than b"  
>
```

The Environment tab in the right pane shows the following variable values:

Values	a	2
b	5	
cnam	chr [1:2] "c1" "c2"	
d1	"2016-06-27"	

Below the environment, there are links to R Resources and RStudio products.

Description :

A,b vectors & here perform a>b operation through if else operation..

If the condition is correct the o/p will be displayed as a>b

Otherwise the o/p will be not greater than b

Assignment 2

TERMINOLOGY IN R

THEJA BODDU

9912054321

48)to check if a number is Prime num or not

A screenshot of the RStudio IDE running on a Linux desktop. The top bar shows the title "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio interface includes a sidebar with various icons, a top menu bar with "File", "Edit", "Code", etc., and a bottom toolbar with file operations like "New", "Open", "Save", etc. The main workspace consists of two panes: the left pane is the "Console" showing R code and its output, and the right pane is the "Environment" showing global variables. The console output shows the following R script:

```
> a=5
> if(a%2==0||a%3==0||a%4==0)
+ {
+ print("a is not prime num")
+ }else
+ {
+ print("a is a prime num")
+ }
[1] "a is a prime num"
>
```

The environment pane shows the following variables:

Values	
a	5
b	5
cnam	chr [1:2] "c1" "c2"
d1	"2016-06-27"

At the bottom, there are links to "R Resources" and "RStudio" documentation.

Description :

Lets take a num =5

The nearest perfect square number is which is less than 4 is 5, so we need to check if 5 is divisible by all integers from 2 to 4, if divisible then 5 is not a prime number

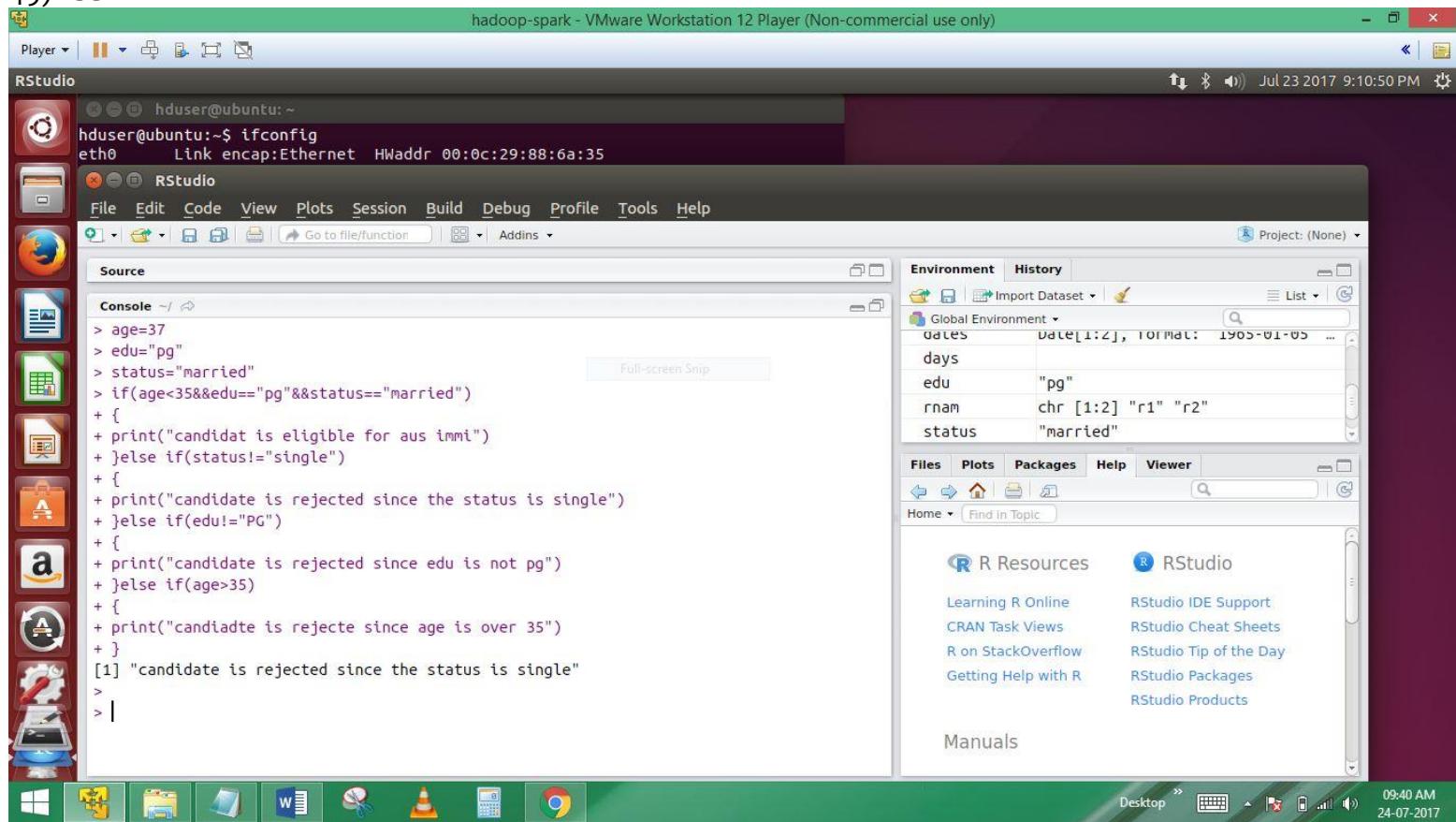
Here if condition is incremented to 2,3,4 , here no one is remainder 0.

Assignment 2
TERMINOLOGY IN R

THEJA BODDU

9912054321

49) Else if



The screenshot shows the RStudio interface running on a Windows desktop. The title bar reads "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The RStudio menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, and Help. The left sidebar has icons for various applications like Player, RStudio, and a terminal window showing the command "ifconfig". The main console window displays the following R code:

```
> age=37
> edu="pg"
> status="married"
> if(age<35&&edu=="pg"&&status=="married")
+ {
+ print("candidate is eligible for aus immi")
+ }else if(status!="single")
+ {
+ print("candidate is rejected since the status is single")
+ }else if(edu!="PG")
+ {
+ print("candidate is rejected since edu is not pg")
+ }else if(age>35)
+ {
+ print("candidate is rejected since age is over 35")
+ }
[1] "candidate is rejected since the status is single"
>
> |
```

The Environment pane shows variables: dates, days, edu, rnam, and status. The status variable is set to "married". The bottom right corner of the screen shows the date and time: 09:40 AM 24-07-2017.

Description :

If condition eligible criteria is perform well the o/p will be candidate is rejected since age is over 35..
Here the condition not met up to condition ,that's why the candidate is rejected by since the status is over 35..
If condition is (age<35&&edu=="pg"&&status=="single")
Here criteria will not met the condition

Assignment 2 TERMINOLOGY IN R

THEJA BODDU

9912054321

50) Nested if

The screenshot shows the RStudio interface running on a Windows desktop. The top bar indicates the session is "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The date and time are Jul 23 2017 9:53:12 PM. The Global Environment pane shows variables: dates (Date[1:2], format: 1905-01-05 ...), days, edu ("pg"), rnam (chr [1:2] "r1" "r2"), and status ("married"). The Source pane contains R code for a nested if-else statement:

```
> age=27
> edu="pg"
> status="married"
> if(age<35){
+   if(edu=="pg"){
+     if(status=="married"){
+       print("eligible fr immi")
+     }else{
+       print("not eligible for immi")
+     }
+   }
+ }
```

The output in the Console pane is [1] "eligible fr immi". The bottom right corner shows the system tray with the date 24-07-2017 and time 10:23 AM.

Description :

Nested if...else statement allows you to check for multiple test expressions and execute different codes for more than two conditions.

Here also we can perform 3 if conditions ,3 condition perform met the correct criteria, that's why eligible for immigration

51) Switch case

The screenshot shows the RStudio interface running on a Windows desktop. The top bar indicates the session is "hadoop-spark - VMware Workstation 12 Player (Non-commercial use only)". The date and time are Jul 23 2017 9:44:44 PM. The Global Environment pane shows variables: code (3), color (chr [1:5] "violet" "indigo" "blue" "green" "yellow"), d1 ("2016-06-27"), d2 ("2017-06-20"), and dates (Date[1:2], format: "1905-01-05"). The Source pane contains R code for a switch-case implementation:

```
> code=1
> x=switch(code,"voilet","indigo","blue","green","yellow")
> x
[1] "voilet"
> code=3
> x
[1] "voilet"
> code=3
> x=switch(code,"voilet","indigo","blue","green","yellow")
> x
[1] "blue"
> color=c("violet","indigo","blue","green","yellow")
> x=switch(code,color)
Error: could not find function "switch"
> x=switch(code,color)
> x
NULL
> code=3
> color=c("violet","indigo","blue","green","yellow")
> x=switch(code,color)
> x
NULL
```

The bottom right corner shows the system tray with the date 24-07-2017 and time 10:14 AM.

Description :

A **switch** statement allows a variable to be tested for equality against a list of values.
and the variable being switched on is checked for each **case**.

Switch code is perform many else if statements & print exact colour in the program..

Switch function will perform the each element to the vector..