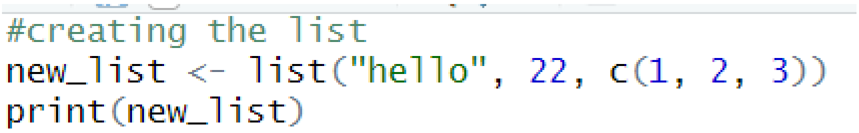
Your answers will be checked for plagiarism and AI generated texts so be careful while answering the questions below:

What is “list” in R?

A list is the object in R which contains elements of different data types such as numbers, string , vectors or even another list inside it. A list function → list() is used to create the list in R. List can also contain elements such as matrics, data frames or even a function.

Examples
new_list <- list(“hello”, 22, c(1, 2, 3))



```
#creating the list
new_list <- list("hello", 22, c(1, 2, 3))
print(new_list)
```

# print the list
print(new_list)

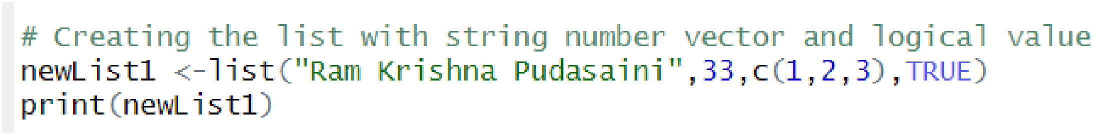
In this example I have created a list named as **new_list** with three different types of elements: **string, numbers and vector.** The second line of the code prints the list elements.

How to create a list containing strings, numbers, vectors and logical values in R?

We can create the list in R with list() functions. As a list can hold different types of data inside it we can easily create a list containing strings, numbers, vectors and logical values.

Here is the example: List with one string, one number, one vector and logical value

newList1 <-list("Ram Krishna Pudasaini",33,c(1,2,3),TRUE)
print(newList1)

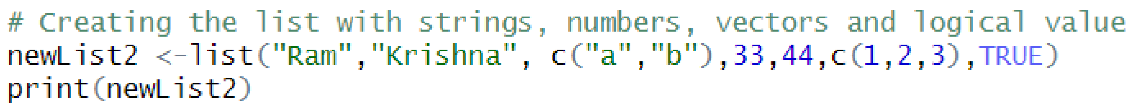


```
# Creating the list with string number vector and logical value
newList1 <-list("Ram Krishna Pudasaini",33,c(1,2,3),TRUE)
print(newList1)
```

Here is another example: List with some strings, numbers, vectors and logical value

# Creating the list with strings, numbers, vectors and logical value

newList2 <-list("Ram","Krishna", c("a","b"),33,44,c(1,2,3),TRUE)
print(newList2)

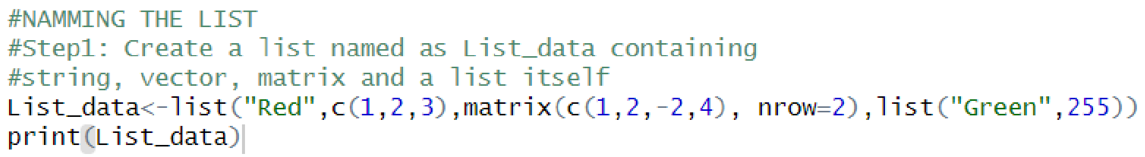


```
# Creating the list with strings, numbers, vectors and logical value
newList2 <-list("Ram","Krishna", c("a","b"),33,44,c(1,2,3),TRUE)
print(newList2)
```

How to name the list elements in R?

We can easily name the elements of the list, for that we need to create the list first and give the Name to the list elements.

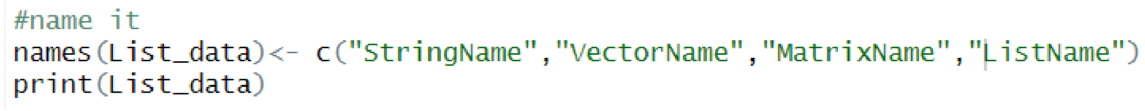
Step1: Create a list named as **List_data** containing string, vector, matrix and a list itself
List_data<-list("Red",c(1,2,3),matrix(c(1,2,-2,4), nrow=2),list("Green",255))
print(List_data)



```
#NAMMING THE LIST
#Step1: Create a list named as List_data containing
#string, vector, matrix and a list itself
List_data<-list("Red",c(1,2,3),matrix(c(1,2,-2,4), nrow=2),list("Green",255))
print(List_data)
```

Step2: Naming the List elements
names(List_data)<- c("StringName","VectorName","MatrixName","ListName"

Step3: Print the List
print(List_data)



```
#name it
names(List_data)<- c("StringName","VectorName","MatrixName","ListName")
print(List_data)
```

Conclusion: we create list with different elements, and named each element group with StringName, VectorName, MatrixName, and ListName respectively

How to assess list elements in R?

We can access the elements of the list by accessing the elements of the list. We can also access the elements of the list by name of the list element but in this case the list needs to be named List.

Example: consider the list with the name as **my_list** that contains different elements like string, number and vector.

Creating the list
my_list<-list("Ram",55.3,c(1,2,5))

Naming the list
names(my_list)<-c("Name","Weight","Vector")

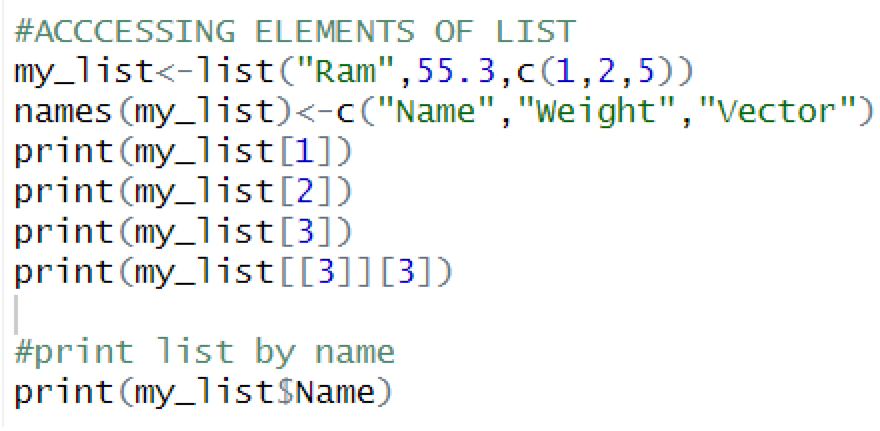
Accessing the elements by index
To access first element—> print(my_list[1])

To access second element—> print(my_list[2])

To access third element—> print(my_list[3])

To access 3rd element of vector →print(my_list[[3]][3])

Accessing the elements by names
To access first element—> print(my_list$Name])



```
#ACCCESSING ELEMENTS OF LIST
my_list<-list("Ram",55.3,c(1,2,5))
names(my_list)<-c("Name","Weight","Vector")
print(my_list[1])
print(my_list[2])
print(my_list[3])
print(my_list[[3]][3])

#print list by name
print(my_list$Name)
```

- ## How to manipulate list elements in R?

Manipulating the list means doing some operations on the list. This includes adding,deleting and updating the list elements. We can add or delete the element only at the end of the list but we can update any element.

Example: Consider the list **M_List** with vector, number and list

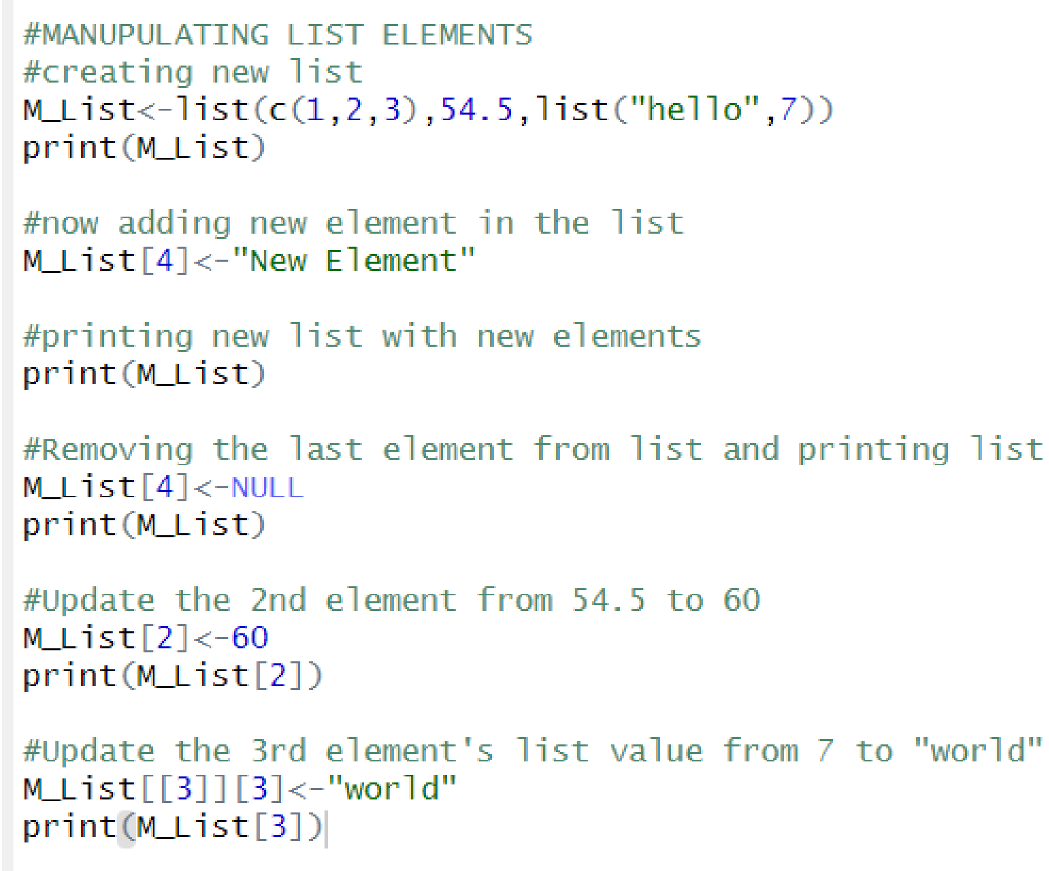
#creating the list
M_List<-list(c(1,2,3),54.5,list("hello",7))
print(M_List)

```
#now adding new element in the list
M_List[4]<-"New Element"
print(M_List)

#Removing the last element from list and printing the 4th element and whole list
M_List[4]<-NULL
print(M_List[4])
print(M_List)

#Update the 2nd element from 54.5 to 60
M_List[2]<-60
print(M_List[2])

#Update the 3rd element's list value from 7 to "world"
M_List[[3]][3]<-"world"
print(M_List[3])
```



```
#MANUPULATING LIST ELEMENTS
#creating new list
M_List<-list(c(1,2,3),54.5,list("hello",7))
print(M_List)

#now adding new element in the list
M_List[4]<-"New Element"

#printing new list with new elements
print(M_List)

#Removing the last element from list and printing list
M_List[4]<-NULL
print(M_List)

#Update the 2nd element from 54.5 to 60
M_List[2]<-60
print(M_List[2])

#Update the 3rd element's list value from 7 to "world"
M_List[[3]][3]<-"world"
print(M_List[3])
```

- How to convert lists to vectors in R?

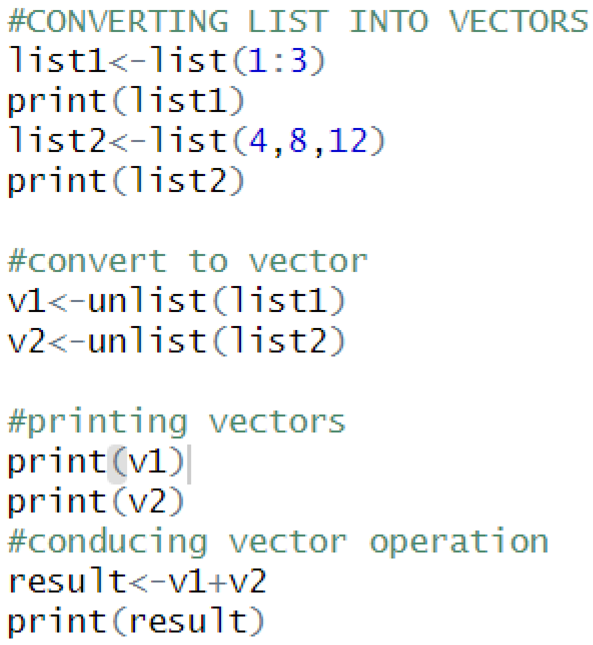
A list can be converted to a vector by using the unlist() function. This function takes a list as the input and return vector as output.

Example :

```
#Creating lists
list1<-list(1:3)
print(list1)
list2<-list(4,8,12)
print(list2)

#convert to vector
v1<-unlist(list1)
v2<-unlist(list2)

#printing vectors
print(v1)
print(v2)
#Conducting vector operation
result<-v1+v2
print(result)
```



```
#CONVERTING LIST INTO VECTORS
list1<-list(1:3)
print(list1)
list2<-list(4,8,12)
print(list2)

#convert to vector
v1<-unlist(list1)
v2<-unlist(list2)

#printing vectors
print(v1)
print(v2)
#conducing vector operation
result<-v1+v2
print(result)
```