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 in R is a collection of data which can hold a variety of data types such as numbers, strings, vectors and another list. List can be called a vector containing other objects. It is ordered and changeable. We can create a list in R by using the list() function.

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

  We can create a list containing strings, numbers, vectors and logical values in R by using the below code in RStudio:

```
my_list <- list("Statistics",’R’, 100, c(1,2,3), TRUE)
```

  Here, ‘my_list’ is the name of list and it contains following elements:

  1. strings ("Statistics",’R’)
  2. number (100)
  3. vector (c(1,2,3))
  4. logical value (TRUE)

- How to name the list elements in R?

  We can name the elements of a list by using the names() function in R.

```
my_list <- list("Statistics",'R', 100, c(1,2,3), TRUE)

names(my_list) <- c("string_element1","string_element2",
"numeric_element", "vector_element", "logical_element")
```

  The names() function is used to assign names to each element of the list 'my_list'. The c() function is used to create a vector. The resulting list my_list will have the names "string_element1","string_element2", "numeric_element", "vector_element", and "logical_element" assigned to each element respectively.

- How to assess list elements in R?

  We can access the elements of the list using their assigned names or index. For example, to access the elements of 'my_list' we use the following code in R.

Using assigned names:

```
my_list$string_element1
my_list$string_element2
my_list$numeric_element
my_list$vector_element
my_list$logical_element
```

Using List Index:

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

- How to manipulate list elements in R?

We can manipulate the elements of a list in various ways.We can add, delete, and update list elements. Here are some common operations we can perform on list elements:

1. Adding elements:
   We can add new elements to a list in many ways like using list index, using the c() or list() function. For example:

   Adding a new element using list index :
   my_list[6] <- "new_element"

   Adding a new element using c() :
   my_list <- c(my_list, "new_element1")

   Adding a new element using list() :
   my_list <- list(my_list, "new_element2")

This third approach of adding elements into the list will make the nested list.

2. Removing elements:
   We can remove elements from a list using the [-] operator.

   Removing the first element :
   my_list <- my_list[-1]

   Remove the last element using list index:
   my_list[6] <- NULL

3. Updating list elements:
   We can modify list elements by assigning new values to them using their index or name.

   Modifying the first element using index
   my_list[[1]] <- "Data Science"

   Modifying the second element using name
   my_list[["string_element2"]] <- "Python"

- How to convert lists to vectors in R?

    We can convert a list to a vector in R using the unlist() function.

    my_vector <- unlist(my_list)

    By compelling all elements to a common type, unlist() function will attempt to simplify the resulting vector as much as possible. Because the list includes a mix of character, numeric, vector, and logical elements in this example, the resulting vector will be of type character, because character is the common type that can hold all of the elements in this case.

    All above R codes are compiled from RStudio: