Programming in Data science

List(..) Exercise Solution

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Lecture Outline

Practise questions

- Write a R program to count number of objects in a given list?

```
> list_data <- list(c("Red","Green","Black"),
> list("Python", "PHP", "Java"))
> print("List:")
> print(list_data)
> print("Number of objects in the said list:")
> ?????
```

Practise questions

- Write a R program to count number of objects in a given list?

Solution

```
1  > list_data <- list(c("Red","Green","Black"),
2  > list("Python", "PHP", "Java"))
3  > print("List:")
4  > print(list_data)
5  > print("Number of objects in the said list:")
6  > ?????
7  > length(list_data)
```

Practise questions

- Write a R program to assign NULL to a given list element?

```
1  > l = list(1, 2, 3, 4, 5)
2  > print("Original list:")
3  > print(l)
4  > print("Set 2nd and 3rd elements to NULL")
5  > ????
```

Practise questions

- Write a R program to assign NULL to a given list element?

Solution

```
1  > l = list(1, 2, 3, 4, 5)
2  > print("Original list:")
3  > print(l)
4  > print("Set 2nd and 3rd elements to NULL")
5  > ????
6  > l[2] = list(NULL)
7  > l[3] = list(NULL)
```

Practise questions

- Write a R program to create a list named s containing sequence of 15 capital letters, starting from 'E'?

```
> l1 <- ????
```

Practise questions

- Write a R program to create a list named s containing sequence of 15 capital letters, starting from 'E'?

Solution

```
1  > l1 <- ????
2  > LETTERS[5:20]
```

Practise questions

- Write a R program to Add 10 to each element of the first vector in a given list?
  Sample list: (g1 = 1:10, g2 = "R Programming", g3 = "HTML").

```
1  > list1 <- list(g1 = 1:10, g2 = "R Programming", g3↩
       = "HTML")
2  > print("Original list:")
3  > print(list1)
4  > print("New list:")
5  > ????
```

Practise questions

- Write a R program to Add 10 to each element of the first vector in a given list?
  Sample list: (g1 = 1:10, g2 = "R Programming", g3 = "HTML").

Solution

```
1  > list1 <- list(g1 = 1:10, g2 = "R Programming", g3↩
       = "HTML")
2  > print("Original list:")
3  > print(list1)
4  > print("New list:")
5  > ????
6  > list1$g1 = list1$g1 + 10
7  > print(list1$g1)
```

Practise questions

- Write a R program to extract all elements of a first vector except the third element of it from a given list. Sample list: (g1 = 1:10, g2 = "R Programming", g3 = "HTML").

```
1  > list1 = list(g1 = 1:10, g2 = "R Programming", g3 ↩
       = "HTML")
2  > print("Original list:")
3  > print(list1)
4  > print("First vector:")
5  > ????
```

Practise questions

- Write a R program to extract all elements of a first vector except the third element of it from a given list. Sample list: (g1 = 1:10, g2 = "R Programming", g3 = "HTML").

Solution

```
1  > list1 = list(g1 = 1:10, g2 = "R Programming", g3 ↩
       = "HTML")
2  > print("Original list:")
3  > print(list1)
4  > print("First vector:")
5  > ????
6  > print(list1$g1)
7  > print("First vector without third element:")
8  > list1$g1 = list1$g1[-3]
9  > print(list1$g1)
```

Practise questions

- Write a R program to add a new item g4 = "Python" to a given list. Sample list: (g1 = 1:10, g2 = "R Programming", g3 = "HTML").

```
1  > list1 = list(g1 = 1:10, g2 = "R Programming", g3 ↩
       = "HTML")
2  > print("Original list:")
3  > print(list1)
4  > print("Add a new vector to the said list:")
5  > ????
```

Practise questions

- Write a R program to add a new item g4 = "Python" to a given list. Sample list: (g1 = 1:10, g2 = "R Programming", g3 = "HTML").

Solution

```
> list1 = list(g1 = 1:10, g2 = "R Programming", g3 ↩
    = "HTML")
> print("Original list:")
> print(list1)
> print("Add a new vector to the said list:")
> ????
>list1$g4 = "Python"
> print(list1)
```

Practise questions

- Write a R program to get the length of the first two vectors of a given list. Sample list: (g1 = 1:10, g2 = "R Programming", g3 = "HTML").

```
1  > list1 = list(g1 = 1:10, g2 = "R Programming", g3 ↩
       = "HTML")
2  > print("Original list:")
3  > print(list1)
4  > print("Length of the vector g1 and g2 of the said↩
       list")
5  > ????
```

Practise questions

- Write a R program to get the length of the first two vectors of a given list. Sample list: (g1 = 1:10, g2 = "R Programming", g3 = "HTML").

Solution

```
> list1 = list(g1 = 1:10, g2 = "R Programming", g3 = "HTML")
> print("Original list:")
> print(list1)
> print("Length of the vector g1 and g2 of the said list")
> ????
> print(length(list1$g1))
> print(length(list1$g2))
```

Practise questions

- Write a R program to find all elements of a given list that are not in another given list? Hint, see `setdiff(..)`.

```
1  > l1 = list("x", "y", "z")
2  > l2 = list("X", "Y", "Z", "x", "y", "z")
3  > print("Original lists:")
4  > print(l1)
5  > print(l2)
6  > print("All elements of l2 that are not in l1:")
7  > ????
```

Practise questions

- Write a R program to find all elements of a given list that are not in another given list? Hint, see `setdiff(..)`.

Solution

```
1  > l1 = list("x", "y", "z")
2  > l2 = list("X", "Y", "Z", "x", "y", "z")
3  > print("Original lists:")
4  > print(l1)
5  > print(l2)
6  > print("All elements of l2 that are not in l1:")
7  > ????
8  > setdiff(l2,l1)
```