

# Lists in R: Takeaways

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## Syntax

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### CREATING LISTS

- Create a list:

```
new_list <- list("data scientist", c(50000,40000), "programming experience")
```

- Assign names to list objects:

```
names(new_list) <- c("job title", "salaries", "requirements")
```

### INDEXING LISTS

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- Return a list of selected elements:

```
new_list[1]  
new_list["job title"]  
new_list[c(1,3)]
```

- Return a single element:

```
new_list[[1]]  
new_list[["job title"]]  
new_list$"job title"
```

- Return a value contained in a list element:

```
new_list[[c(1,3)]]
```

### MANIPULATING LISTS

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- Modify List Elements

```
new_list[[1]] <- "junior data scientist"  
new_list[[c(2,1)]] <- 40000
```

- Add Elements to Lists

```
new_list[[4]] <- c("healthcare", "vacation")  
new_list[["benefits"]] <- c("healthcare", "vacation")
```

- Remove Object from Lists

```
new_list[-3]
```

- Combine Multiple Lists

```
new_list_2 <- c(new_list, new_list_1)
```

- Create a List of Lists (Nested List)

```
new_list_3 <- list(new_list, new_list_1)
```

# Concepts

- The four data structures covered in this course are:
  - Vector: one-dimensional structure for storing values of SAME TYPE.
  - Matrix: two-dimensional structure for storing values of SAME TYPE.
  - **Lists: multi-dimensional structure for storing values of ANY DATA TYPE/OBJECT.**
  - Dataframe: two-dimensional structure for storing values of ANY DATA TYPE/OBJECT.

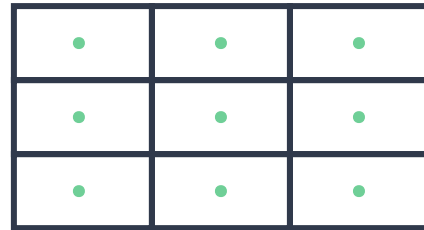
## Vector

1 Dimension | Same Data Type



## Matrix

2 Dimensions | Same Data Type



## List

Several Dimensions | Any Data Type



## Dataframe

2 Dimensions | Any Data Type



- In R, lists are specialized vectors that can contain multiple objects. The objects may consist of different data structures, including single data elements, vectors, and matrices.
- Storing objects in lists allows you to make use of R's features for performing the same operation on each object in your list.
- Lists of lists contain multiple lists as objects. Each list contained in a nested list may, in turn, contain objects of any data structure or type.

# Resources

- [Documentation on Lists in R](#)