

structures Solutions (Part 1)

7 April 2017 by [Stephen James](http://www.r-exercises.com/author/stephenjames/) (<http://www.r-exercises.com/author/stephenjames/>).

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Difficulty level: ★☆☆☆☆ 0.5/5 (3 votes)

Below are the solutions to [these](http://www.r-exercises.com/2017/04/07/r-data-structures-exercises-part-1/) (<http://www.r-exercises.com/2017/04/07/r-data-structures-exercises-part-1/>) exercises on R Data Structures.

```
#####
#                               #
#   Exercise 1                 #
#                               #
#####
character<- 'A'
integertype<-10
logicaltype<-TRUE
complextype<-2+3i
rawtype<-charToRaw( 'x' )
print(character)
```

```
## [1] "A"
```

```
print(integertype)
```

```
## [1] 10
```

```
print(logicaltype)
```

```
## [1] TRUE
```

```
print(complextype)
```

```
## [1] 2+3i
```

print(rawtype)
[1] 78
Exercise 2 # ##### is.vector(charactertype)
[1] TRUE
is.vector(integertype)
[1] TRUE
is.vector(logicaltype)
[1] TRUE
is.vector(complextype)
[1] TRUE
is.vector(rawtype)
[1] TRUE
class(charactertype)
[1] "character"
class(integertype)
[1] "numeric"
class(logicaltype)
[1] "logical"
class(complextype)
[1] "complex"
class(rawtype)
[1] "raw"
Exercise 3 # ##### list1<-list(No = 1:10,Chr="Hello",Flag=TRUE) print(list1)

```
## $No
## [1] 1 2 3 4 5 6 7 8 9 10
##
## $Chr
## [1] "Hello"
##
## $Flag
## [1] TRUE
```

```
print(length(list1))
```

```
## [1] 3
```

```
#####
```

```
# #
```

```
# Exercise 4 #
```

```
# #
```

```
#####
```

```
Mat <- matrix(3:14, nrow = 4,ncol=3,byrow = TRUE)
```

```
print(Mat)
```

```
## [,1] [,2] [,3]
```

```
## [1,] 3 4 5
```

```
## [2,] 6 7 8
```

```
## [3,] 9 10 11
```

```
## [4,] 12 13 14
```

```
#####
```

```
# #
```

```
# Exercise 5 #
```

```
# #
```

```
#####
```

```
Mat <- matrix(c(2,3,6,7,8,9,12,22,-5,98,56,-77), nrow = 3,ncol=4)
print(Mat)
```

```
## [,1] [,2] [,3] [,4]
```

```
## [1,] 2 7 12 98
```

```
## [2,] 3 8 22 56
```

```
## [3,] 6 9 -5 -77
```

```
#####
```

```
# #
```

```
# Exercise 6 #
```

```
# #
```

```
#####
```

```
matrix1<-matrix(sample(1:10,4),nrow=2,ncol=2,byrow=TRUE)
print("Matrix 1 with random value between 1 and 10")
```

```
## [1] "Matrix 1 with random value between 1 and 10"
```

```
print(matrix1)
```

##	[,1]	[,2]
##	[1,]	9 1
##	[2,]	2 3
atrix2<-matrix(sample(1:10,4),nrow=2,ncol=2,byrow=TRUE)		
print("Matrix 2 with random value between 1 and 10")		
##	[1]	"Matrix 2 with random value between 1 and 10"
print(matrix2)		
##	[,1]	[,2]
##	[1,]	5 3
##	[2,]	1 4
summatrix<-matrix1+Matrix2		
submatrix<-matrix1-Matrix2		
multmatrix<-matrix1*Matrix2		
divmatrix<-matrix1/matrix2		
print("sum of the Matrices")		
##	[1]	"sum of the Matrices"
print(summatrix)		
##	[,1]	[,2]
##	[1,]	13 7
##	[2,]	4 6
print("Difference of the Matrices")		
##	[1]	"Difference of the Matrices"
print(submatrix)		
##	[,1]	[,2]
##	[1,]	5 -5
##	[2,]	0 0
print("Multiplaction of the Matrices")		
##	[1]	"Multiplaction of the Matrices"
print(multmatrix)		
##	[,1]	[,2]
##	[1,]	36 6
##	[2,]	4 9
print("Division of the Matrices")		
##	[1]	"Division of the Matrices"
print(divmatrix)		

```
##      [,1]      [,2]
## [1,]   1.8 0.3333333
## [2,]   2.0 0.7500000

#####
#
# Exercise 7
#
#####

matrix1<-matrix(sample(1:1000,9),nrow=3,ncol=3,byrow=TRUE)
print("Matrix 1 with random value between 1 and 1000")

## [1] "Matrix 1 with random value between 1 and 1000"

print(matrix1)

##      [,1] [,2] [,3]
## [1,]  955  721  532
## [2,]  578  830  496
## [3,]  901  799  166

print("Transposed Matrix")

## [1] "Transposed Matrix"

print(t(matrix1))

##      [,1] [,2] [,3]
## [1,]  955  578  901
## [2,]  721  830  799
## [3,]  532  496  166

#####
#
# Exercise 8
#
#####

Employees<-data.frame(Name=c("ALAN S","RYAN S","SERAH S", "CHRISTY S","THOMAS MARTIN"),
                        Gender=c("Male","Male","Female","Female","Male"),
                        Age=c(23,22,25,26,32),
                        Designation=c("Clerk","Manager","Exective","CEO","CTO"),
                        SSN=c("134-34-2345","349-44-789","556-34-443","898-98-987","679-67-676")
                        )

print(Employees)

##      Name Gender Age Designation      SSN
## 1  ALAN S   Male  23      Clerk 134-34-2345
## 2  RYAN S   Male  22      Manager 349-44-789
## 3  SERAH S Female  25    Exective 556-34-443
## 4  CHRISTY S Female  26         CEO 898-98-987
## 5 THOMAS MARTIN   Male  32         CTO 679-67-676
```

```
#####  
#  
# Exercise 9 #  
#  
#####  
Employees<-data.frame(Name=c("ALAN S","RYAN S","SERAH S", "CHRISTY S","THOMAS MARTIN"),  
                        Gender=c("Male","Male","Female","Female","Male"),  
                        Age=c(23,22,25,26,32),  
                        Designation=c("Clerk","Manager","Exective","CEO","CTO"),  
                        SSN=c("134-34-2345","349-44-789","556-34-443","898-98-987","679-67-676")  
)  
print(summary(Employees))
```

##	Name	Gender	Age	Designation	SSN
##	ALAN S	:1	Female:2	Min. :22.0	CEO :1 134-34-2345:1
##	CHRISTY S	:1	Male :3	1st Qu.:23.0	Clerk :1 349-44-789 :1
##	RYAN S	:1		Median :25.0	CTO :1 556-34-443 :1
##	SERAH S	:1		Mean :25.6	Exective:1 679-67-676 :1
##	THOMAS MARTIN:1			3rd Qu.:26.0	Manager :1 898-98-987 :1
##				Max. :32.0	

```
#####  
#  
# Exercise 10 #  
#  
#####  
  
Employees<-data.frame(Name=c("ALAN S","RYAN S","SERAH S", "CHRISTY S","THOMAS MARTIN"),  
                        Gender=c("Male","Male","Female","Female","Male"),  
                        Age=c(23,22,25,26,32),  
                        Designation=c("Clerk","Manager","Exective","CEO","CTO"),  
                        SSN=c("134-34-2345","349-44-789","556-34-443","898-98-987","679-67-676")  
)  
print("Employee 1 Details")
```

```
## [1] "Employee 1 Details"
```

```
print(Employees[1,])
```

##	Name	Gender	Age	Designation	SSN
## 1	ALAN S	Male	23	Clerk	134-34-2345

```
print("Employee 5 Details")
```

```
## [1] "Employee 5 Details"
```

```
print(Employees[5,])
```

##	Name	Gender	Age	Designation	SSN
## 5	THOMAS MARTIN	Male	32	CTO	679-67-676

```
print("Name of all employees")
```

```
## [1] "Name of all employees"

print(Employees[1])

##           Name
## 1      ALAN S
## 2      RYAN S
## 3      SERAH S
## 4    CHRISTY S
## 5 THOMAS MARTIN
```



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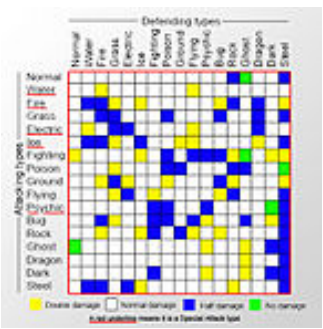
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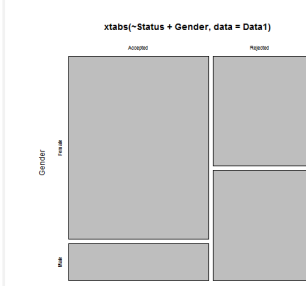
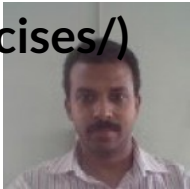
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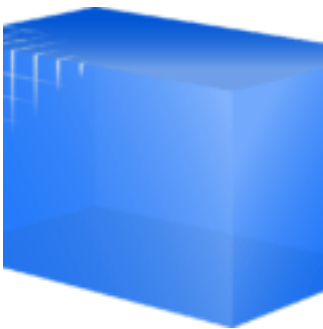
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About Stephen James
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Alex	Yes
Lilly	No
Mark	No
Oliver	Yes
Martha	Yes
Lucas	No
Caroline	Yes

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