

R – Data Structures (Part 2)

Abhishek Kumar
ItsAbhishekKumar.com
@MeAbhishekKumar



pluralsight
hardcore dev and IT training



Outline

Atomic vector

Data frame

List

Matrix

Factor

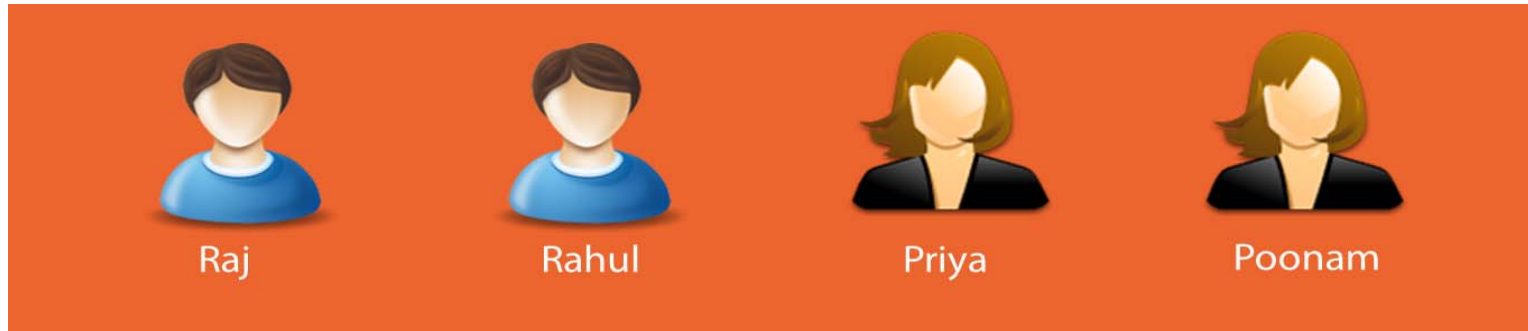
Array

Data Frame

- **Heterogeneous** data structure
- Can contain elements of different classes
- 2-dimensional arrangement

Field 1	Field 2	Field 3
...
...

Data Frame



```
student.names <- c("Raj","Rahul","Priya","Poonam") # Character
student.weights <- c( 60.5, 72.5 , 45.2,  47.5) # Numeric
student.genders <-
factor(c("Male","Male","Female","Female")) # Factor
student.physics.marks <- c( 70L , 75L , 80L,  85L) # Integer
student.chemistry.marks <- c(60L, 70L, 85L, 70L) # Integer
```

Data Frames



Raj



Rahul



Priya



Poonam

1

```
student1 <- list(student.names[1],  
student.weights[1], student.genders[1],  
student.physics.marks[1],  
student.chemistry.marks[1])
```

2

```
student2 <- ...
```

3

```
student3 <- ...
```

4

```
student4 <- ...
```

Matrix

- **2-Dimensional** arrangement
- **Homogeneous** data structure
- Contains elements of same class only
- Typically used to store numeric data

Field 1	Field 2	Field 3
...
...

Matrix



Raj



Rahul



Priya



Poonam

	Physics marks	Chemistry marks
Raj	70	60
Rahul	75	70
Priya	80	85
Poonam	85	70

Array

- **Homogeneous** data structure
- Contains items of similar class
- Can be **n-dimensional**

Array



Raj



Rahul



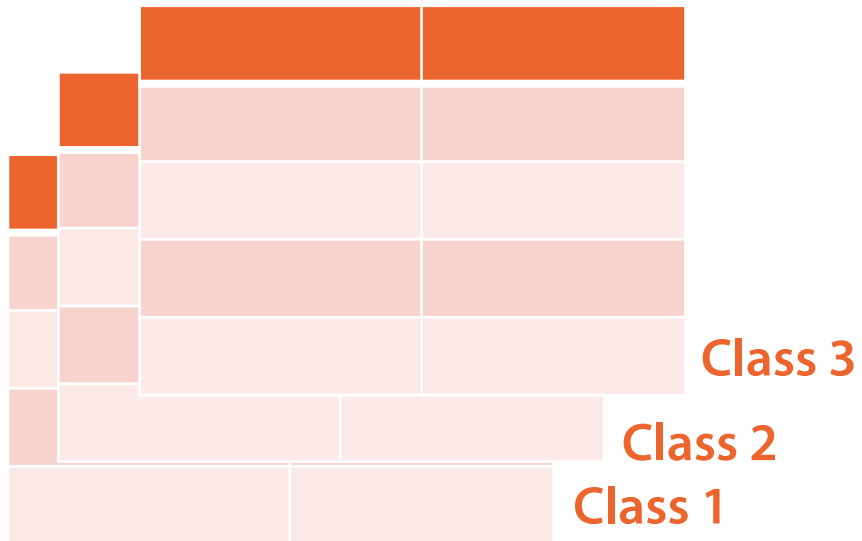
Priya



Poonam

	Physics marks	Chemistry marks
Raj	70	60
Rahul	75	70
Priya	80	85
Poonam	85	70

Array



Summary

Data structure

Homogeneous

Atomic vector

1 D

Matrix

2 D

Array

n D

Factor

1 D

Heterogeneous

List

1 D

Data frame

2 D