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21BDS0064
Fall Sem 2024-2025
DA -1.2
Exploratory Data Analysis Lab
27-07-2024

Data Structures in R

1. **Vector containing the daily wages of employees that is used to calculate the total wage and the average wage**

daily_wage <- c(5000, 6000, 11000, 2450, 5050)
total_wage <- sum(daily_wage)
average_wage <- mean(daily_wage)
print(paste("Total wages:", total_wage))
print(paste("Average wages per day:", average_wage))

```
# 1. Vector
# 21BDS0064
daily_wage <- c(5000, 6000, 11000, 2450, 5050)
total_wage <- sum(daily_wage)
average_wage <- mean(daily_wage)
print(paste("Total wages:", total_wage))
print(paste("Average wages per day:", average_wage))
```

Output:

```
> # 1. Vector
> # 21BDS0064
> daily_wage <- c(5000, 6000, 11000, 2450, 5050)
> total_wage <- sum(daily_wage)
> average_wage <- mean(daily_wage)
> print(paste("Total wages:", total_wage))
[1] "Total wages: 29500"
> print(paste("Average wages per day:", average_wage))
[1] "Average wages per day: 5900"
```

2. List of all the details of the professor Ramesh Kumar

```
customer_profile <- list(
 id = 1,
 name = "Ramesh Kumar",
 email = "ramesh.kumar@vit.ac.in",
 subject = c("EDA", "Data Mining", "Data Science", "Machine Learning"),
 is_senior_teacher = TRUE
)
print(customer_profile)
```

```
# 2. List
# 21BDS0064
customer_profile <- list(
  id = 1,
  name = "Ramesh Kumar",
  email = "ramesh.kumar@vit.ac.in",
  subject = c("EDA", "Data Mining", "Data Science", "Machine Learning"),
  is_senior_teacher = TRUE
)
print(customer_profile)
```

Output:

```
> # 2. List
> # 21BDS0064
> customer_profile <- list(
+   id = 1,
+   name = "Ramesh Kumar",
+   email = "ramesh.kumar@vit.ac.in",
+   subject = c("EDA", "Data Mining", "Data Science", "Machine Learning"),
+   is_senior_teacher = TRUE
+ )
> print(customer_profile)
$id
[1] 1

$name
[1] "Ramesh Kumar"

$email
[1] "ramesh.kumar@vit.ac.in"

$subject
[1] "EDA"              "Data Mining"      "Data Science"     "Machine Learning"

$is_senior_teacher
[1] TRUE
```

3. Data frame containing the information of 4 students with their student id, name and cgpa

```
student_data <- data.frame(
 student_id = c(100, 101, 102, 103),
 student_name = c("Abhishek", "Taniya", "Deepak", "Varun"),
 cgpa = c(9, 10, 9.5, 9.75)
)
print(student_data)
```

```
# 3. Data frame
# 21BDS0064
student_data <- data.frame(
  student_id = c(100, 101, 102, 103),
  student_name = c("Abhishek", "Taniya", "Deepak", "Varun"),
  cgpa = c(9, 10, 9.5, 9.75)
)
print(student_data)
```

Output:

```
> # 3. Data frame
> # 21BDS0064
> student_data <- data.frame(
+   student_id = c(100, 101, 102, 103),
+   student_name = c("Abhishek", "Taniya", "Deepak", "Varun"),
+   cgpa = c(9, 10, 9.5, 9.75)
+ )
> print(student_data)
  student_id student_name  cgpa
1        100     Abhishek  9.00
2        101       Taniya 10.00
3        102       Deepak  9.50
4        103        Varun  9.75
>
```

4. Matrix of size 5x5 storing 25 random numbers

```
random_matrix <- matrix(runif(25), nrow = 5)
random_matrix
```

```
# 4. Matrix
# 21BDS0064
random_matrix <- matrix(runif(25), nrow = 5)
random_matrix
```

Output:

```
> # 4. Matrix
> # 21BDS0064
> random_matrix <- matrix(runif(25), nrow = 5)
> random_matrix
          [,1]      [,2]       [,3]      [,4]       [,5]
[1,] 0.21354098 0.3831743 0.00357039 0.1115925 0.24327795
[2,] 0.06303323 0.6967806 0.50713555 0.2512714 0.04853448
[3,] 0.74938462 0.6799903 0.76004479 0.5888988 0.54297665
[4,] 0.78179741 0.3420206 0.62092212 0.5806089 0.79178773
[5,] 0.22862271 0.8638089 0.54523484 0.1832652 0.40323115
```

5. Storing Employee Data that includes their Employee id, Name, Age, Department and Salary

```
employees <- data.frame(
 id = c(1, 2, 3, 4),
 name = c("Raj", "Ram", "Mohan", "Roy"),
 age = c(35, 30, 32, 42),
 department = c("Finance", "Marketing", "Engineering", "Legal"),
 salary = c(60000, 85000, 70000, 45000)
)
```

```
# 5. Employee Data
# 21BDS0064
employees <- data.frame(
  id = c(1, 2, 3, 4),
  name = c("Raj", "Ram", "Mohan", "Roy"),
  age = c(35, 30, 32, 42),
  department = c("Finance", "Marketing", "Engineering", "Legal"),
  salary = c(60000, 85000, 70000, 45000)
)
```

Output:

```
> # 5. Employee Data
> # 21BDS0064
> employees <- data.frame(
+   id = c(1, 2, 3, 4),
+   name = c("Raj", "Ram", "Mohan", "Roy"),
+   age = c(35, 30, 32, 42),
+   department = c("Finance", "Marketing", "Engineering", "Legal"),
+   salary = c(60000, 85000, 70000, 45000)
+ )
```