

### **# Create the data frame.**

```
emp <- data.frame(  
  emp_id = c(1:5),  
  emp_name = c("Rick","Dan","Michelle","Ryan","Gary"),  
  salary = c(623.3,515.2,611.0,729.0,843.25),  
  
  start_date = as.Date(c("2012-01-01", "2013-09-23",  
    "2014-11-15", "2014-05-11",  
    "2015-03-27")))  
  
# Print the data frame.  
print(emp)
```

### **The Structure of the Data Frame**

The structure of the data frame can be seen by using str() function.

```
emp <- data.frame(  
  emp_id = c(1:5),  
  emp_name = c("Rick","Dan","Michelle","Ryan","Gary"),  
  salary = c(623.3,515.2,611.0,729.0,843.25),  
  
  start_date = as.Date(c("2012-01-01", "2013-09-23",  
    "2014-11-15", "2014-05-11",  
    "2015-03-27")))  
  
# Print the data frame.  
str(emp)
```

### **Extract Data from Data Frame**

Extract specific column from a data frame using column name.

```
# Create the data frame.

emp <- data.frame(
  emp_id = c (1:5),
  emp_name = c("Rick","Dan","Michelle","Ryan","Gary"),
  salary = c(623.3,515.2,611.0,729.0,843.25),

  start_date = as.Date(c("2012-01-01","2013-09-23","2014-11-15","2014-05-11",
    "2015-03-27")))

# Extract Specific columns.

result <- data.frame(emp$emp_name,emp$salary)

print(result)
```

### **Extract the first two rows and then all columns**

```
# Create the data frame.

emp <- data.frame(
  emp_id = c (1:5),
  emp_name = c("Rick","Dan","Michelle","Ryan","Gary"),
  salary = c(623.3,515.2,611.0,729.0,843.25),

  start_date = as.Date(c("2012-01-01", "2013-09-23", "2014-11-15", "2014-05-11",
    "2015-03-27"))
```

```
)  
# Extract first two rows.  
result <- emp[1:2,]  
print(result)
```

### **Extract 3rd and 5th row with 2nd and 4th column**

```
# Create the data frame.  
emp <- data.frame(  
  emp_id = c(1:5),  
  emp_name = c("Rick","Dan","Michelle","Ryan","Gary"),  
  salary = c(623.3,515.2,611.0,729.0,843.25),  
  
  start_date = as.Date(c("2012-01-01", "2013-09-23", "2014-11-15", "2014-05-11",  
    "2015-03-27"))  
  
)  
  
# Extract 3rd and 5th row with 2nd and 4th column.  
result <- emp[c(3,5),c(2,4)]  
print(result)
```

## Expand Data Frame

A data frame can be expanded by adding columns and rows.

### Add Column

Just add the column vector using a new column name.

# Create the data frame.

```
emp<- data.frame(  
  emp_id = c (1:5),  
  emp_name = c("Rick","Dan","Michelle","Ryan","Gary"),  
  salary = c(623.3,515.2,611.0,729.0,843.25),  
  
  start_date = as.Date(c("2012-01-01", "2013-09-23", "2014-11-15", "2014-05-11",  
    "2015-03-27"))  
  
)
```

# Add the "dept" column.

```
emp$dept <- c("IT","Operations","IT","HR","Finance")  
v <- emp  
print(v)
```

### Add Row

To add more rows permanently to an existing data frame, bring in the new rows in the same structure as the existing data frame and use the `rbind()` function.

```
# Create the first data frame.
```

```
emp.data <- data.frame(  
  emp_id = c(1:5),  
  emp_name = c("Rick","Dan","Michelle","Ryan","Gary"),  
  salary = c(623.3,515.2,611.0,729.0,843.25),  
  
  start_date = as.Date(c("2012-01-01", "2013-09-23", "2014-11-15", "2014-05-11",  
    "2015-03-27")),  
  dept = c("IT","Operations","IT","HR","Finance"),  
  stringsAsFactors = FALSE  
)
```

```
# Create the second data frame
```

```
emp.newdata <- data.frame(  
  emp_id = c(6:8),  
  emp_name = c("Rasmi","Pranab","Tusar"),  
  salary = c(578.0,722.5,632.8),  
  start_date = as.Date(c("2013-05-21","2013-07-30","2014-06-17")),  
  dept = c("IT","Operations","Fianance"),  
  stringsAsFactors = FALSE  
)
```

```
# Bind the two data frames.
```

```
emp.finaldata <- rbind(emp.data,emp.newdata)  
print(emp.finaldata)
```

