

# SESSION 8: Exploratory Data Analytics

## Assignment 1

1. Use the package -RcmdrPlugin.IPSUR.

`data(RcmdrTestDrive)`

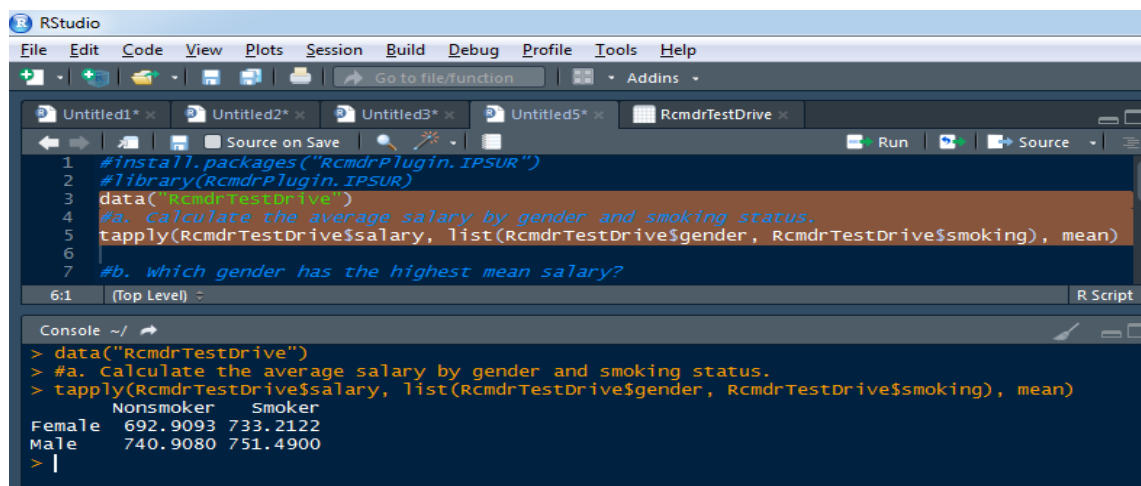
And perform the below operations:

- a. Calculate the average salary by gender and smoking status.

Answer:

**`tapply(RcmdrTestDrive$salary, list(RcmdrTestDrive$gender, RcmdrTestDrive$smoking), mean)`**

Output:



The screenshot shows the RStudio interface. The source editor contains the following R code:

```
1 #install.packages("RcmdrPlugin.IPSUR")
2 #library(RcmdrPlugin.IPSUR)
3 data(RcmdrTestDrive)
4 #a. calculate the average salary by gender and smoking status.
5 tapply(RcmdrTestDrive$salary, list(RcmdrTestDrive$gender, RcmdrTestDrive$smoking), mean)
6
7 #b. which gender has the highest mean salary?
```

The console shows the output of the `tapply` function:

```
> data("RcmdrTestDrive")
> #a. calculate the average salary by gender and smoking status.
> tapply(RcmdrTestDrive$salary, list(RcmdrTestDrive$gender, RcmdrTestDrive$smoking), mean)
      Nonsmoker   Smoker
Female  692.9093  733.2122
Male    740.9080  751.4900
> |
```

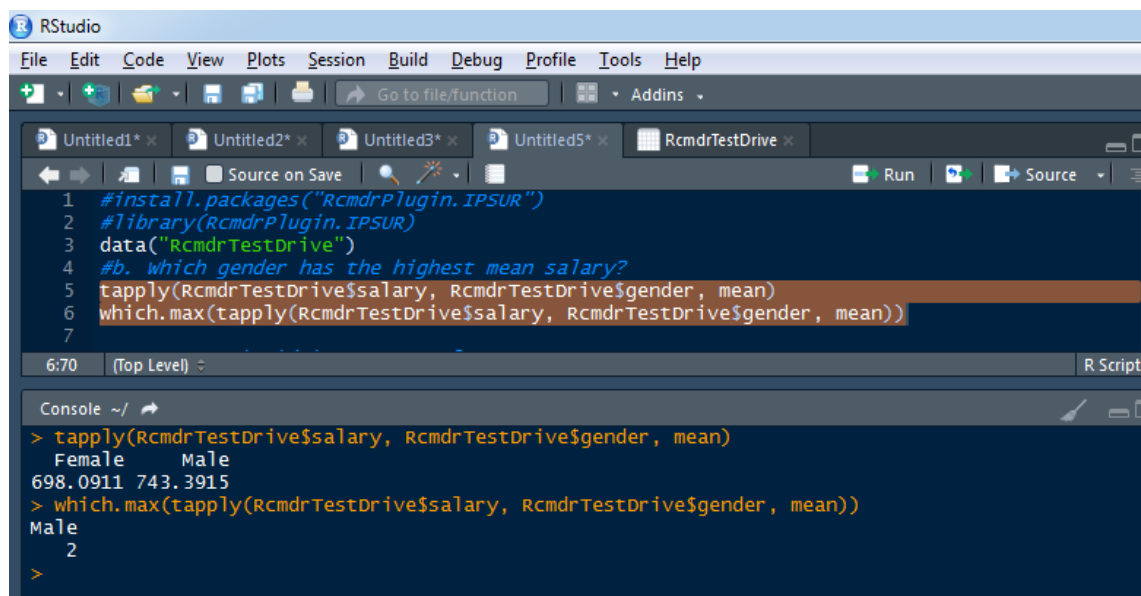
- b. Which gender has the highest mean salary?

Answer:

**`tapply(RcmdrTestDrive$salary, RcmdrTestDrive$gender, mean)`**

**`which.max(tapply(RcmdrTestDrive$salary, RcmdrTestDrive$gender, mean))`**

Output:



The screenshot shows the RStudio interface. The source editor contains the following R code:

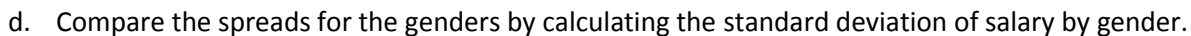
```
1 #install.packages("RcmdrPlugin.IPSUR")
2 #library(RcmdrPlugin.IPSUR)
3 data("RcmdrTestDrive")
4 #b. which gender has the highest mean salary?
5 tapply(RcmdrTestDrive$salary, RcmdrTestDrive$gender, mean)
6 which.max(tapply(RcmdrTestDrive$salary, RcmdrTestDrive$gender, mean))
7
```

The console shows the output of the `tapply` and `which.max` functions:

```
> tapply(RcmdrTestDrive$salary, RcmdrTestDrive$gender, mean)
      Female      Male
698.0911  743.3915
> which.max(tapply(RcmdrTestDrive$salary, RcmdrTestDrive$gender, mean))
Male
2
>
```

- Answer:**

**Output:**



**Answer:**

**Output:**

