DS_Mod1_In_built_functions

This report gives an insight of some of the widely used in built functions in R.

read.csv()->This function helps you to load a .csv file into r-studio.

```
customer_churn<-read.csv("C:/Users/INTELLIPAAT/Desktop/customer_churn.csv")
```

head() function will give us the first 6 records of the dataset.

```
head(customer_churn)

##    customerID gender SeniorCitizen Partner Dependents tenure PhoneService
## 1 7590-VHVEG Female             0     Yes         No      1           No
## 2 5575-GNVDE   Male             0      No         No     34          Yes
## 3 3668-QPYBK   Male             0      No         No      2          Yes
## 4 7795-CFOCW   Male             0      No         No     45           No
## 5 9237-HQITU Female             0      No         No      2          Yes
## 6 9305-CDSKC Female             0      No         No      8          Yes
##      MultipleLines InternetService OnlineSecurity OnlineBackup
## 1 No phone service             DSL             No          Yes
## 2               No             DSL            Yes           No
## 3               No             DSL            Yes          Yes
## 4 No phone service             DSL            Yes           No
## 5               No     Fiber optic             No           No
## 6              Yes     Fiber optic             No           No
##   DeviceProtection TechSupport StreamingTV StreamingMovies        Contract
## 1               No          No          No              No Month-to-month
## 2              Yes          No          No              No       One year
## 3               No          No          No              No Month-to-month
## 4              Yes         Yes          No              No       One year
## 5               No          No          No              No Month-to-month
## 6              Yes          No         Yes             Yes Month-to-month
##   PaperlessBilling             PaymentMethod MonthlyCharges TotalCharges
## 1              Yes          Electronic check          29.85        29.85
## 2               No              Mailed check          56.95      1889.50
## 3              Yes              Mailed check          53.85       108.15
## 4               No Bank transfer (automatic)          42.30      1840.75
## 5              Yes          Electronic check          70.70       151.65
## 6              Yes          Electronic check          99.65       820.50
##   Churn
## 1    No
## 2    No
## 3   Yes
## 4    No
```

```
## 5     Yes
## 6     Yes
```

To have a look at the first 10 records of the dataset we will add a numerical parameter to the head() function.

```
head(customer_churn,10)

##    customerID gender SeniorCitizen Partner Dependents tenure PhoneService
## 1  7590-VHVEG Female             0     Yes         No      1           No
## 2  5575-GNVDE   Male             0      No         No     34          Yes
## 3  3668-QPYBK   Male             0      No         No      2          Yes
## 4  7795-CFOCW   Male             0      No         No     45           No
## 5  9237-HQITU Female             0      No         No      2          Yes
## 6  9305-CDSKC Female             0      No         No      8          Yes
## 7  1452-KIOVK   Male             0      No        Yes     22          Yes
## 8  6713-OKOMC Female             0      No         No     10           No
## 9  7892-POOKP Female             0     Yes         No     28          Yes
## 10 6388-TABGU   Male             0      No        Yes     62          Yes
##       MultipleLines InternetService OnlineSecurity OnlineBackup
## 1  No phone service             DSL             No          Yes
## 2                No             DSL            Yes           No
## 3                No             DSL            Yes          Yes
## 4  No phone service             DSL            Yes           No
## 5                No     Fiber optic             No           No
## 6               Yes     Fiber optic             No           No
## 7               Yes     Fiber optic             No          Yes
## 8  No phone service             DSL            Yes           No
## 9               Yes     Fiber optic             No           No
## 10               No             DSL            Yes          Yes
##    DeviceProtection TechSupport StreamingTV StreamingMovies        Contract
## 1                No          No          No              No Month-to-month
## 2               Yes          No          No              No       One year
## 3                No          No          No              No Month-to-month
## 4               Yes         Yes          No              No       One year
## 5                No          No          No              No Month-to-month
## 6               Yes          No         Yes             Yes Month-to-month
## 7                No          No         Yes              No Month-to-month
## 8                No          No          No              No Month-to-month
## 9               Yes         Yes         Yes             Yes Month-to-month
## 10               No          No          No              No       One year
##    PaperlessBilling            PaymentMethod MonthlyCharges TotalCharges
## 1               Yes         Electronic check          29.85        29.85
## 2                No             Mailed check          56.95      1889.50
## 3               Yes             Mailed check          53.85       108.15
## 4                No Bank transfer (automatic)          42.30      1840.75
## 5               Yes         Electronic check          70.70       151.65
## 6               Yes         Electronic check          99.65       820.50
## 7               Yes   Credit card (automatic)          89.10      1949.40
```

```
## 8                        No            Mailed check           29.75         301.90
## 9                       Yes        Electronic check          104.80        3046.05
## 10                       No Bank transfer (automatic)          56.15        3487.95
##     Churn
## 1     No
## 2     No
## 3    Yes
## 4     No
## 5    Yes
## 6    Yes
## 7     No
## 8     No
## 9    Yes
## 10    No
```

Similarly, we can have a look at the first 2 records of the dataset

```
head(customer_churn,2)

##    customerID gender SeniorCitizen Partner Dependents tenure PhoneService
## 1 7590-VHVEG Female             0     Yes         No      1           No
## 2 5575-GNVDE   Male             0      No         No     34          Yes
##     MultipleLines InternetService OnlineSecurity OnlineBackup
## 1 No phone service            DSL             No          Yes
## 2               No            DSL            Yes           No
##   DeviceProtection TechSupport StreamingTV StreamingMovies      Contract
## 1               No          No          No              No Month-to-month
## 2              Yes          No          No              No       One year
##   PaperlessBilling       PaymentMethod MonthlyCharges TotalCharges Churn
## 1              Yes Electronic check            29.85        29.85    No
## 2               No    Mailed check            56.95      1889.50    No
```

Again, tail() function will give us the last 6 records of the dataset.

```
tail(customer_churn)

##      customerID gender SeniorCitizen Partner Dependents tenure
## 7038 2569-WGERO Female             0      No         No     72
## 7039 6840-RESVB   Male             0     Yes        Yes     24
## 7040 2234-XADUH Female             0     Yes        Yes     72
## 7041 4801-JZAZL Female             0     Yes        Yes     11
## 7042 8361-LTMKD   Male             1     Yes         No      4
## 7043 3186-AJIEK   Male             0      No         No     66
##      PhoneService    MultipleLines InternetService      OnlineSecurity
## 7038          Yes               No              No No internet service
## 7039          Yes              Yes             DSL                 Yes
## 7040          Yes              Yes     Fiber optic                  No
```

```
## 7041                No No phone service                DSL                Yes
## 7042               Yes                Yes    Fiber optic                 No
## 7043               Yes                 No    Fiber optic                Yes
##            OnlineBackup    DeviceProtection        TechSupport
## 7038 No internet service No internet service No internet service
## 7039                 No                Yes                Yes
## 7040                Yes                Yes                 No
## 7041                 No                 No                 No
## 7042                 No                 No                 No
## 7043                 No                Yes                Yes
##            StreamingTV    StreamingMovies        Contract
## 7038 No internet service No internet service        Two year
## 7039                Yes                Yes        One year
## 7040                Yes                Yes        One year
## 7041                 No                 No Month-to-month
## 7042                 No                 No Month-to-month
## 7043                Yes                Yes        Two year
##     PaperlessBilling             PaymentMethod MonthlyCharges
## 7038              Yes Bank transfer (automatic)          21.15
## 7039              Yes            Mailed check          84.80
## 7040              Yes   Credit card (automatic)         103.20
## 7041              Yes          Electronic check          29.60
## 7042              Yes            Mailed check          74.40
## 7043              Yes Bank transfer (automatic)         105.65
##     TotalCharges Churn
## 7038     1419.40    No
## 7039     1990.50    No
## 7040     7362.90    No
## 7041      346.45    No
## 7042      306.60   Yes
## 7043     6844.50    No
```

To have a look at the last record of the dataset we will add a numerical parameter to the
tail() function.

```
tail(customer_churn,1)
```

```
##     customerID gender SeniorCitizen Partner Dependents tenure
## 7043 3186-AJIEK   Male             0      No         No     66
##     PhoneService MultipleLines InternetService OnlineSecurity
## 7043          Yes            No     Fiber optic            Yes
##     OnlineBackup DeviceProtection TechSupport StreamingTV StreamingMovies
## 7043           No              Yes         Yes         Yes             Yes
##     Contract PaperlessBilling             PaymentMethod MonthlyCharges
## 7043 Two year              Yes Bank transfer (automatic)         105.65
##     TotalCharges Churn
## 7043       6844.5    No
```

Similarly, we can have a look at the last 10 records of the dataset

```
tail(customer_churn,10)
```

```
##      customerID gender SeniorCitizen Partner Dependents tenure
## 7034 9767-FFLEM   Male            0      No         No     38
## 7035 0639-TSIQW Female            0      No         No     67
## 7036 8456-QDAVC   Male            0      No         No     19
## 7037 7750-EYXWZ Female            0      No         No     12
## 7038 2569-WGERO Female            0      No         No     72
## 7039 6840-RESVB   Male            0     Yes        Yes     24
## 7040 2234-XADUH Female            0     Yes        Yes     72
## 7041 4801-JZAZL Female            0     Yes        Yes     11
## 7042 8361-LTMKD   Male            1     Yes         No      4
## 7043 3186-AJIEK   Male            0      No         No     66
##      PhoneService    MultipleLines InternetService     OnlineSecurity
## 7034          Yes               No     Fiber optic                 No
## 7035          Yes              Yes     Fiber optic                Yes
## 7036          Yes               No     Fiber optic                 No
## 7037           No No phone service             DSL                 No
## 7038          Yes               No              No No internet service
## 7039          Yes              Yes             DSL                Yes
## 7040          Yes              Yes     Fiber optic                 No
## 7041           No No phone service             DSL                Yes
## 7042          Yes              Yes     Fiber optic                 No
## 7043          Yes               No     Fiber optic                Yes
##           OnlineBackup    DeviceProtection        TechSupport
## 7034                No                  No                 No
## 7035               Yes                 Yes                 No
## 7036                No                  No                 No
## 7037               Yes                 Yes                Yes
## 7038 No internet service No internet service No internet service
## 7039                No                 Yes                Yes
## 7040               Yes                 Yes                 No
## 7041                No                  No                 No
## 7042                No                  No                 No
## 7043                No                 Yes                Yes
##           StreamingTV      StreamingMovies       Contract
## 7034                No                  No Month-to-month
## 7035               Yes                  No Month-to-month
## 7036               Yes                  No Month-to-month
## 7037               Yes                 Yes       One year
## 7038 No internet service No internet service       Two year
## 7039               Yes                 Yes       One year
## 7040               Yes                 Yes       One year
## 7041                No                  No Month-to-month
## 7042                No                  No Month-to-month
## 7043               Yes                 Yes       Two year
##      PaperlessBilling          PaymentMethod MonthlyCharges
## 7034              Yes   Credit card (automatic)          69.50
```

```
## 7035              Yes   Credit card (automatic)          102.95
## 7036              Yes Bank transfer (automatic)           78.70
## 7037               No          Electronic check           60.65
## 7038              Yes Bank transfer (automatic)           21.15
## 7039              Yes              Mailed check           84.80
## 7040              Yes   Credit card (automatic)          103.20
## 7041              Yes          Electronic check           29.60
## 7042              Yes              Mailed check           74.40
## 7043              Yes Bank transfer (automatic)          105.65
##       TotalCharges Churn
## 7034       2625.25    No
## 7035       6886.25   Yes
## 7036       1495.10    No
## 7037        743.30    No
## 7038       1419.40    No
## 7039       1990.50    No
## 7040       7362.90    No
## 7041        346.45    No
## 7042        306.60   Yes
## 7043       6844.50    No
```

nrow() will give us the number of rows in the dataset

```
nrow(customer_churn)
```

```
## [1] 7043
```

ncol() will give us the number of columns in the dataset

```
ncol(customer_churn)
```

```
## [1] 21
```

mean() function will give us the mean of any numerical column in the dataset.

```
mean(customer_churn$MonthlyCharges)
```

```
## [1] 64.76169
```

min() function will give us the minimum value present the numerical column of the dataset.

```
min(customer_churn$MonthlyCharges)
```

```
## [1] 18.25
```

max() this function will give us the max value of the numerical column of the dataset.

```
max(customer_churn$MonthlyCharges)
```

```
## [1] 118.75
```

range() function will automatically give us the minimum and maximum of the numerical column in the dataset.

```
range(customer_churn$MonthlyCharges)
```

```
## [1]  18.25 118.75
```

Sample() function will allow me to pick random numbers. Here we are taking out 5 random numbers from the numerical column.

```
sample(customer_churn$customerID,5)
```

```
## [1] 2483-XSSMZ 1518-OMDIK 4673-KKSLS 3312-UUMZW 9092-GDZKO
## 7043 Levels: 0002-ORFBO 0003-MKNFE 0004-TLHLJ 0011-IGKFF ... 9995-HOTOH
```

Similarly, we can take out 20 random numbers from the numerical column.

```
sample(customer_churn$customerID,20)
```

```
##  [1] 5469-CTCWN 8894-JVDCV 4335-UPJSI 1684-FLBGS 8092-NLTGF 0939-YAPAF
##  [7] 2371-JUNGC 9430-NKQLY 6356-ELRKD 9289-LBQVU 0621-TWIEM 4584-LBNMK
## [13] 8873-TMKGR 9330-DHBFL 4250-WAROZ 0164-XAIRP 0594-UFTUL 8676-TRMJS
## [19] 6233-HXJMX 2501-XWWTZ
## 7043 Levels: 0002-ORFBO 0003-MKNFE 0004-TLHLJ 0011-IGKFF ... 9995-HOTOH
```

table() funtion will help us find out the distribution of the factor columns. For example we want to find out number of Female and Male customers in the dataset.

```
table(customer_churn$gender)
```

```
##
## Female    Male
##   3488    3555
```

Again we are applying the same table() function to the InternetSevice factor column to have a look at the distribution.

```
table(customer_churn$InternetService)

##
##        DSL Fiber optic          No
##       2421       3096        1526
```