2282437_Assignment2

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1) Create a matrix

```
matrx=matrix(c(22,-35,10,234,54,23,-7,49,30), nrow=3, ncol=3, byrow=TRUE)
matrx
```

```
##      [,1] [,2] [,3]
## [1,]   22  -35   10
## [2,]  234   54   23
## [3,]   -7   49   30
```

```
rownames(matrx)=c("R1","R2","R3")
colnames(matrx)=c("C1","C2","C3")
matrx
```

```
##     C1  C2 C3
## R1  22 -35 10
## R2 234  54 23
## R3  -7  49 30
```

```
mat_mean=apply(matrx,2,mean)
mat_mean
```

```
##       C1       C2       C3
## 83.00000 22.66667 21.00000
```

```
mat_max=apply(matrx,1,max)
mat_max
```

```
##  R1  R2  R3
##  22 234  49
```

2) Create a function

```
fnctn=function(x){
  y=3*(1-x)^3
  y
}
fnctn(2)
```

```
## [1] -3
```

```
integrate(fnctn,0,1)
```

```
## 0.75 with absolute error < 8.3e-15
```

```
integrate(fnctn,0.5,0.9)
```

```
## 0.0468 with absolute error < 5.2e-16
```

2) Create a function

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```
integrate(fnctn,0.5,0.9)
```

```
## 0.0468 with absolute error < 5.2e-16
```

3) Create a function to print squares of numbers in sequence.

```
sqr_fn = function(n) {
  for(i in 1:n) {
    m= i^2
    print(m)  }
  }
sqr_fn(4)
```

```
## [1] 1
## [1] 4
## [1] 9
## [1] 16
```

4) Create a data frame in R

```
employeedaa= data.frame(

  Emp_name = c("Rick","Dan","Michelle","Ryan","Gary"),
  Salary = c(723.30,616.20,691.0,629.0,843.25),

  Joining = (c("2011", "2015", "2013", "2012",
                          "2013"))

)
employeedaa
```

```
##   Emp_name Salary Joining
## 1     Rick 723.30    2011
## 2      Dan 616.20    2015
## 3 Michelle 691.00    2013
## 4     Ryan 629.00    2012
## 5     Gary 843.25    2013
```

```
employeedaa_new= data.frame(

  Emp_name = c("Rasmi"),
  Salary = c(778.00),

  Joining = ("2014")

)
employeedaa_new
```

```
##   Emp_name Salary Joining
## 1    Rasmi    778    2014
```

```
employeedaa= rbind(employeedaa,employeedaa_new)
employeedaa
```

```
##   Emp_name Salary Joining
## 1     Rick 723.30    2011
## 2      Dan 616.20    2015
## 3 Michelle 691.00    2013
## 4     Ryan 629.00    2012
## 5     Gary 843.25    2013
## 6    Rasmi 778.00    2014
```

```
employeedaa$Dept <- c("HR","Finance","IT","IT","Operations","IT")
employeedaa
```

```
##   Emp_name Salary Joining       Dept
## 1     Rick 723.30    2011         HR
## 2      Dan 616.20    2015    Finance
## 3 Michelle 691.00    2013         IT
## 4     Ryan 629.00    2012         IT
## 5     Gary 843.25    2013 Operations
## 6    Rasmi 778.00    2014         IT
```

```
employeedaa$binSalary <- ifelse(employeedaa$Salary >= 700,"1", "0")
employeedaa
```

```
##   Emp_name Salary Joining       Dept binSalary
## 1     Rick 723.30    2011         HR         1
## 2      Dan 616.20    2015    Finance         0
## 3 Michelle 691.00    2013         IT         0
## 4     Ryan 629.00    2012         IT         0
## 5     Gary 843.25    2013 Operations         1
## 6    Rasmi 778.00    2014         IT         1
```

5) Consider a dataset from any package

and obtain sum of all the values, mean, maximum, minimum values of each variables of the data set. (In report mention the package and description of dataset considered)

##USArrests Dataset

This data set contains statistics, in arrests per 100,000 residents for assault, murder, and rape in each of the 50 US states in 1973. Also given is the percent of the population living in urban areas.

```r
data("USArrests")
USArrests
```

```
##                Murder Assault UrbanPop Rape
## Alabama          13.2     236       58 21.2
## Alaska           10.0     263       48 44.5
## Arizona           8.1     294       80 31.0
## Arkansas          8.8     190       50 19.5
## California        9.0     276       91 40.6
## Colorado          7.9     204       78 38.7
## Connecticut       3.3     110       77 11.1
## Delaware          5.9     238       72 15.8
## Florida          15.4     335       80 31.9
## Georgia          17.4     211       60 25.8
## Hawaii            5.3      46       83 20.2
## Idaho             2.6     120       54 14.2
## Illinois         10.4     249       83 24.0
## Indiana           7.2     113       65 21.0
## Iowa              2.2      56       57 11.3
## Kansas            6.0     115       66 18.0
## Kentucky          9.7     109       52 16.3
## Louisiana        15.4     249       66 22.2
## Maine             2.1      83       51  7.8
## Maryland         11.3     300       67 27.8
## Massachusetts     4.4     149       85 16.3
## Michigan         12.1     255       74 35.1
## Minnesota         2.7      72       66 14.9
## Mississippi      16.1     259       44 17.1
## Missouri          9.0     178       70 28.2
## Montana           6.0     109       53 16.4
## Nebraska          4.3     102       62 16.5
## Nevada           12.2     252       81 46.0
## New Hampshire     2.1      57       56  9.5
## New Jersey        7.4     159       89 18.8
## New Mexico       11.4     285       70 32.1
## New York         11.1     254       86 26.1
## North Carolina   13.0     337       45 16.1
## North Dakota      0.8      45       44  7.3
## Ohio              7.3     120       75 21.4
## Oklahoma          6.6     151       68 20.0
## Oregon            4.9     159       67 29.3
## Pennsylvania      6.3     106       72 14.9
## Rhode Island      3.4     174       87  8.3
## South Carolina   14.4     279       48 22.5
## South Dakota      3.8      86       45 12.8
## Tennessee        13.2     188       59 26.9
## Texas            12.7     201       80 25.5
## Utah              3.2     120       80 22.9
## Vermont           2.2      48       32 11.2
## Virginia          8.5     156       63 20.7
## Washington        4.0     145       73 26.2
## West Virginia     5.7      81       39  9.3
## Wisconsin         2.6      53       66 10.8
## Wyoming           6.8     161       60 15.6
```

```r
sum_col=apply(USArrests,2,sum)
sum_col
```

```
##   Murder  Assault UrbanPop     Rape
##    389.4   8538.0   3277.0   1061.6
```

```r
mean_col=apply(USArrests,2,mean)
mean_col
```

```
##   Murder  Assault UrbanPop     Rape
##    7.788  170.760   65.540   21.232
```

```r
max_col=apply(USArrests,2,max)
max_col
```

```
##   Murder  Assault UrbanPop     Rape
##     17.4    337.0     91.0     46.0
```

```r
min_col=apply(USArrests,2,min)
min_col
```

```
##   Murder  Assault UrbanPop     Rape
##      0.8     45.0     32.0      7.3
```