Basic Concepts in R

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Aim:

To perform basic operations in R and understand data types

Program:

```
> empid <- c(1:15)

> age <- c (23,43,32,43,32,43,43,34,24,34,34,34,23,53,54)

> sex <- c(1,0,1,0,1,0,1,1,1,0,1,1,0,1,0)

> status <- c(0,1,0,1,1,1,0,1,0,1,0,1,0,0,1)

> empinfo<-data.frame(empid,age,sex,status)

> empinfo
   empid age sex status
1      1  23   1      0
2      2  43   0      1
3      3  32   1      0
4      4  43   0      1
5      5  32   1      1
6      6  43   0      1
7      7  43   1      0
8      8  34   1      1
9      9  24   1      0
10    10  34   0      1
11    11  34   1      0
12    12  34   1      1
13    13  23   0      0
14    14  53   1      0
15    15  54   0      1

> empinfo$sex=factor(empinfo$sex,labels=c("male","female"))

> empinfo$status=factor(empinfo$status,labels=c("staff","faculty"))

> sexm = subset(empinfo, empinfo$sex=='male')

> sexm
   empid age  sex  status
2      2  43 male faculty
4      4  43 male faculty
6      6  43 male faculty
10    10  34 male faculty
13    13  23 male   staff
15    15  54 male faculty
```

```
> sexf = subset(empinfo, empinfo$sex=='female')

> sexf
   empid age    sex  status
1      1  23 female   staff
3      3  32 female   staff
5      5  32 female faculty
7      7  43 female   staff
8      8  34 female faculty
9      9  24 female   staff
11    11  34 female   staff
12    12  34 female faculty
14    14  53 female   staff

> statuss = subset(empinfo, empinfo$status=='staff')

> statuss
   empid age    sex status
1      1  23 female  staff
3      3  32 female  staff
7      7  43 female  staff
9      9  24 female  staff
11    11  34 female  staff
13    13  23   male  staff
14    14  53 female  staff

> statusf = subset(empinfo, empinfo$status=='faculty')

> statusf
   empid age    sex  status
2      2  43   male faculty
4      4  43   male faculty
5      5  32 female faculty
6      6  43   male faculty
8      8  34 female faculty
10    10  34   male faculty
12    12  34 female faculty
15    15  54   male faculty

> summary(empinfo)
     empid           age           sex        status
 Min.   : 1.0   Min.   :23.0   male  :6   staff  :7
 1st Qu.: 4.5   1st Qu.:32.0   female:9   faculty:8
 Median : 8.0   Median :34.0
 Mean   : 8.0   Mean   :36.6
 3rd Qu.:11.5   3rd Qu.:43.0
 Max.   :15.0   Max.   :54.0

> summary(sexm)
     empid            age            sex        status
 Min.   : 2.000   Min.   :23.00   male  :6   staff  :1
 1st Qu.: 4.500   1st Qu.:36.25   female:0   faculty:5
 Median : 8.000   Median :43.00
 Mean   : 8.333   Mean   :40.00
 3rd Qu.:12.250   3rd Qu.:43.00
 Max.   :15.000   Max.   :54.00

> summary(sexf)
     empid            age            sex        status
 Min.   : 1.000   Min.   :23.00   male  :0   staff  :6
 1st Qu.: 5.000   1st Qu.:32.00   female:9   faculty:3
```

```
 Median : 8.000   Median :34.00
 Mean   : 7.778   Mean   :34.33
 3rd Qu.:11.000   3rd Qu.:34.00
 Max.   :14.000   Max.   :53.00

> table1 = table(empinfo$sex)

> table1

  male female
     6      9

> table2 = table(empinfo$status)

> table2

  staff faculty
      7       8

> table3 = table(empinfo$sex,empinfo$status)

> table3

        staff faculty
  male       1       5
  female     6       3

> plot(empinfo$age, type="l", main = "age of subjects", xlab = "empid", yl
ab= "age in years", col= "blue")

> pie(table1)

> pie(table2)

> pie(table3)

> barplot(table3,beside = T,xlim = c(1,15),col = c('blue','red'), ylim = c
(0,5))

> legend("topright",legend = rownames(table3), fill = c('blue','red'), bty
= "n")
```