```
> #Homework-2
>
> #naming the columns for simpler viewing and using them
> colnames(Typical_Employee_Survey_Data)<- c("Age", "Gender",
"JobSatisfaction", "ImportantCharacteristics", "YearsActive", "PromotionChances",
"AffectingWorkDec.", "Budg.Decision", "PrideAtWork", "Loyalty", "WorkRelations")
> #Typical_Employee_Survey_Data data used
>
>
> mydf <- data.frame(Typical_Employee_Survey_Data)  #converting the data set into
a data frame
> mydf
   Age Gender JobSatisfaction ImportantCharacteristics YearsActive
PromotionChances AffectingWorkDec. Budg.Decision
1  35    1        2              4         3.00        1         2         1
2  33    1        2              3         9.00        5         2         1
3  23    1        1              1         1.50        1         2         2
4  60    1        1              1        20.00        3         2         2
5  35    1        2              1         3.00        3         2         1
6  34    2        2              1         6.00        1         2         2
7  61    2        1              1         0.75        5         3         2
8  59    1        2              5         1.50        2         1         2
9  37    2        1              5         3.00        4         3         1
10 30    1        1              5         5.00        2         2         1
11 34    2        1              3         3.00        4         2         1
12 34    2        2              3         8.00        2         2         1
13 27    2        2              5         7.00        2         3         2
14 38    1        1              4        15.00        1         2         1
15 41    1        3              1         1.00        4         2         2
16 58    1        2              4        36.00        5         2         1
17 34    2        2              1         1.50        2         3         2
18 48    2        2              5         6.00        4         2         2
19 26    2        1              4         3.50        3         2         1
20 39    1        1              5         3.00        5         3         1
21 29    2        1              5        16.00        1         1         1
22 36    1        4              5         4.08        4         2         2
23 25    1        1              4         2.00        1         3         2
24 39    2        2              5         2.00        1         2         2
25 40    1        2              1        11.83        1         2         1
26 53    1        2              1        10.00        2         2         1
27 39    2        1              5         1.00        5         3         1
28 27    2        4              2         2.00        5         1         2
29 35    1        1              1        10.00        5         1         2
30 25    1        1              5         2.50        5         2         1
31 29    1        2              5         1.00        1         1         1
32 23    2        1              2         0.75        1         3         1
33 40    1        1              5         4.33        1         3         1
34 36    2        3              1        10.00        2         2         2
35 64    2        1              4         7.00        5         2         1
36 43    2        1              5        18.00        5         2         1
```

37	28	2	2	5	0.16	2	3	2
38	48	2	1	5	1.66	5	3	2
39	52	1	3	5	0.08	5	3	2
40	32	1	2	1	3.00	2	1	2
41	23	1	2	1	1.00	1	2	2
42	44	2	1	1	5.00	2	2	2
43	36	2	4	1	9.50	4	3	1
44	33	2	2	3	3.75	2	2	2
45	52	1	1	5	1.00	5	1	1
46	38	1	1	5	2.66	5	3	1
47	34	1	1	5	5.50	4	2	1
48	62	1	1	1	52.25	4	2	1
49	36	2	4	5	1.00	1	3	2
50	37	1	2	5	19.00	1	2	1
51	39	2	2	5	10.00	4	2	1
52	61	2	1	5	13.00	4	2	2
53	20	1	2	4	3.00	2	3	1
54	22	1	2	5	1.00	3	3	1
55	36	1	1	5	7.00	2	2	1
56	48	2	1	4	4.00	1	3	2
57	58	2	1	4	12.00	4	3	2
58	50	1	3	5	22.50	4	3	2
59	24	1	2	5	1.00	2	2	2
60	44	2	1	1	10.00	4	1	2
61	30	2	4	5	2.00	4	3	2
62	32	1	2	5	7.00	2	3	2
63	32	1	2	1	12.00	5	2	1
64	44	1	1	4	22.00	2	2	1
65	34	1	1	5	4.00	2	2	1
66	42	2	2	5	22.00	2	2	1
67	40	1	1	5	2.00	2	1	1
68	37	1	1	5	5.00	1	1	2
69	32	2	2	5	11.00	4	4	1
70	31	2	1	1	10.00	1	2	1
71	44	1	1	4	0.66	5	3	1
72	39	1	1	5	11.00	4	2	1
73	30	1	2	1	11.00	5	2	2
74	41	1	2	4	12.00	3	3	2
75	39	1	3	4	9.00	4	3	2
76	33	1	2	5	10.00	5	1	1
77	25	1	2	4	3.00	5	1	1
78	31	2	1	5	5.50	5	3	2
79	41	2	1	5	2.33	2	2	2
80	42	1	1	2	5.00	4	3	1
81	33	2	2	5	1.00	4	3	2
82	36	2	1	5	6.00	5	2	1
83	39	1	2	4	16.00	2	2	2
84	39	1	1	1	3.25	5	3	1
85	62	1	1	2	27.00	5	2	1
86	62	1	1	1	1.91	2	1	2

87	34	1	1	4	2.08	2	3	1
88	52	1	1	2	31.91	2	4	1
89	40	1	3	5	6.00	5	3	2
90	43	2	2	5	14.00	5	2	1

	PrideAtWork	Loyalty	WorkRelations
1	2	5	2
2	2	2	1
3	1	5	2
4	1	1	1
5	2	4	2
6	2	4	4
7	2	4	1
8	2	4	1
9	2	2	3
10	1	2	2
11	1	4	2
12	2	2	2
13	2	4	2
14	2	2	1
15	4	5	3
16	2	5	2
17	2	2	2
18	2	4	2
19	1	2	1
20	1	1	1
21	2	2	3
22	3	4	3
23	2	4	2
24	2	4	3
25	2	4	2
26	2	4	1
27	1	1	1
28	2	4	3
29	2	4	3
30	1	2	1
31	3	4	2
32	1	1	1
33	3	4	2
34	2	3	1
35	1	1	2
36	2	2	1
37	2	5	2
38	1	2	3
39	2	4	1
40	2	2	2
41	3	4	1
42	2	4	1
43	3	5	4
44	2	4	2
45	2	2	1

```
46      1       1       1
47      1       1       2
48      2       2       1
49      2       5       2
50      3       4       2
51      1       4       2
52      1       1       2
53      3       2       1
54      2       5       2
55      2       4       1
56      1       4       1
57      2       4       2
58      2       4       2
59      2       4       1
60      1       1       1
61      2       4       2
62      2       2       1
63      1       2       3
64      2       4       1
65      2       2       1
66      2       4       2
67      1       1       2
68      2       4       1
69      2       5       2
70      2       2       3
71      1       5       1
72      1       2       1
73      2       4       1
74      2       4       1
75      2       5       1
76      1       4       1
77      2       5       2
78      2       4       1
79      1       4       3
80      2       5       2
81      2       5       3
82      1       2       1
83      2       4       2
84      1       1       1
85      2       2       1
86      2       4       3
87      1       4       1
88      1       2       2
89      2       4       3
90      2       4       1
 [ reached 'max' / getOption("max.print") -- omitted 32 rows ]
>
> # Explore Data Frame
>
> names(mydf) #displaying the column names
```

```
 [1] "Age"                "Gender"              "JobSatisfaction"
"ImportantCharacteristics"
 [5] "YearsActive"        "PromotionChances"    "AffectingWorkDec."
"Budg.Decision"
 [9] "PrideAtWork"        "Loyalty"             "WorkRelations"
> ncol(mydf)  #number of columns
[1] 11
> nrow(mydf)  #number of rows
[1] 122
> dim(mydf)   #dimensions of the data frame
[1] 122  11
> head(mydf)  #top 6 values of the df
  Age Gender JobSatisfaction ImportantCharacteristics YearsActive
PromotionChances AffectingWorkDec. Budg.Decision PrideAtWork
1 35    1         2               4          3.0          1            2           1
2
2 33    1         2               3          9.0          5            2           1
2
3 23    1         1               1          1.5          1            2           2
1
4 60    1         1               1          20.0         3            2           2
1
5 35    1         2               1          3.0          3            2           1
2
6 34    2         2               1          6.0          1            2           2
2
  Loyalty WorkRelations
1    5        2
2    2        1
3    5        2
4    1        1
5    4        2
6    4        4
> tail(mydf)  #bottom 6 values of the df
    Age Gender JobSatisfaction ImportantCharacteristics YearsActive
PromotionChances AffectingWorkDec. Budg.Decision
117 49    1         2               4          1.50         5            4           1
118 35    2         2               2          10.00        4            3           2
119 22    1         1               5          1.00         1            1           2
120 33    2         1               5          11.00        5            2           1
121 29    2         1               5          2.00         2            2           1
122 22    1         2               2          1.25         1            2           2
    PrideAtWork Loyalty WorkRelations
117      1         1          1
118      2         5          1
119      2         4          1
120      2         2          1
121      1         2          2
122      2         4          2
> str(mydf)   #displaying the data type of each column in the df
```

```
'data.frame':	122 obs. of  11 variables:
 $ Age                 : num  35 33 23 60 35 34 61 59 37 30 ...
 $ Gender              : num  1 1 1 1 1 2 2 1 2 1 ...
 $ JobSatisfaction     : num  2 2 1 1 2 2 1 2 1 1 ...
 $ ImportantCharacteristics: num  4 3 1 1 1 1 1 5 5 5 ...
 $ YearsActive         : num  3 9 1.5 20 3 6 0.75 1.5 3 5 ...
 $ PromotionChances    : num  1 5 1 3 3 1 5 2 4 2 ...
 $ AffectingWorkDec.   : num  2 2 2 2 2 2 3 1 3 2 ...
 $ Budg.Decision       : num  1 1 2 2 1 2 2 2 1 1 ...
 $ PrideAtWork         : num  2 2 1 1 2 2 2 2 2 1 ...
 $ Loyalty             : num  5 2 5 1 4 4 4 4 2 2 ...
 $ WorkRelations       : num  2 1 2 1 2 4 1 1 3 2 ...
> class(mydf$Gender) #displaying the data type of a specific column 'gender' in the
df
[1] "numeric"
> class(mydf$Age) #displaying the data type of a specific column 'Age' in the df
[1] "numeric"
> mydf$Gender <- as.factor(mydf$Gender) #changing the data type of 'gender'
column in the df
> class(mydf$Gender)  #confirming the change
[1] "factor"
> str(mydf)
'data.frame':	122 obs. of  11 variables:
 $ Age                 : num  35 33 23 60 35 34 61 59 37 30 ...
 $ Gender              : Factor w/ 2 levels "1","2": 1 1 1 1 1 2 2 1 2 1 ...
 $ JobSatisfaction     : num  2 2 1 1 2 2 1 2 1 1 ...
 $ ImportantCharacteristics: num  4 3 1 1 1 1 1 5 5 5 ...
 $ YearsActive         : num  3 9 1.5 20 3 6 0.75 1.5 3 5 ...
 $ PromotionChances    : num  1 5 1 3 3 1 5 2 4 2 ...
 $ AffectingWorkDec.   : num  2 2 2 2 2 2 3 1 3 2 ...
 $ Budg.Decision       : num  1 1 2 2 1 2 2 2 1 1 ...
 $ PrideAtWork         : num  2 2 1 1 2 2 2 2 2 1 ...
 $ Loyalty             : num  5 2 5 1 4 4 4 4 2 2 ...
 $ WorkRelations       : num  2 1 2 1 2 4 1 1 3 2 ...
>
> #columnn
>
> mydf$Age #displaying the values of a specific column 'age'
  [1] 35 33 23 60 35 34 61 59 37 30 34 34 27 38 41 58 34 48 26 39 29 36 25 39 40
 53 39 27 35 25 29 23 40 36 64 43 28 48 52 32
 [41] 23 44 36 33 52 38 34 62 36 37 39 61 20 22 36 48 58 50 24 44 30 32 32 44 34
 42 40 37 32 31 44 39 30 41 39 33 25 31 41 42
 [81] 33 36 39 39 62 62 34 52 40 43 41 64 26 45 33 36 45 51 38 57 45 43 37 33 51
 43 42 25 40 57 38 41 32 39 43 50 49 35 22 33
[121] 29 22
> mydf[1]  #another way to display the values of the 'age' column
   Age
1   35
2   33
3   23
```

4	60
5	35
6	34
7	61
8	59
9	37
10	30
11	34
12	34
13	27
14	38
15	41
16	58
17	34
18	48
19	26
20	39
21	29
22	36
23	25
24	39
25	40
26	53
27	39
28	27
29	35
30	25
31	29
32	23
33	40
34	36
35	64
36	43
37	28
38	48
39	52
40	32
41	23
42	44
43	36
44	33
45	52
46	38
47	34
48	62
49	36
50	37
51	39
52	61
53	20

54	22
55	36
56	48
57	58
58	50
59	24
60	44
61	30
62	32
63	32
64	44
65	34
66	42
67	40
68	37
69	32
70	31
71	44
72	39
73	30
74	41
75	39
76	33
77	25
78	31
79	41
80	42
81	33
82	36
83	39
84	39
85	62
86	62
87	34
88	52
89	40
90	43
91	41
92	64
93	26
94	45
95	33
96	36
97	45
98	51
99	38
100	57
101	45
102	43
103	37

```
104  33
105  51
106  43
107  42
108  25
109  40
110  57
111  38
112  41
113  32
114  39
115  43
116  50
117  49
118  35
119  22
120  33
121  29
122  22
> mydf[c("Age")] #another way to display the values of the 'age' column
    Age
1    35
2    33
3    23
4    60
5    35
6    34
7    61
8    59
9    37
10   30
11   34
12   34
13   27
14   38
15   41
16   58
17   34
18   48
19   26
20   39
21   29
22   36
23   25
24   39
25   40
26   53
27   39
28   27
29   35
```

30	25
31	29
32	23
33	40
34	36
35	64
36	43
37	28
38	48
39	52
40	32
41	23
42	44
43	36
44	33
45	52
46	38
47	34
48	62
49	36
50	37
51	39
52	61
53	20
54	22
55	36
56	48
57	58
58	50
59	24
60	44
61	30
62	32
63	32
64	44
65	34
66	42
67	40
68	37
69	32
70	31
71	44
72	39
73	30
74	41
75	39
76	33
77	25
78	31
79	41

```
80   42
81   33
82   36
83   39
84   39
85   62
86   62
87   34
88   52
89   40
90   43
91   41
92   64
93   26
94   45
95   33
96   36
97   45
98   51
99   38
100  57
101  45
102  43
103  37
104  33
105  51
106  43
107  42
108  25
109  40
110  57
111  38
112  41
113  32
114  39
115  43
116  50
117  49
118  35
119  22
120  33
121  29
122  22
> mydf[2:3] #displaying the values of the 'gender' and 'satisfactionwithjob' column
which are the 2nd and 3rd column
     Gender JobSatisfaction
1       1              2
2       1              2
3       1              1
4       1              1
```

5	1	2
6	2	2
7	2	1
8	1	2
9	2	1
10	1	1
11	2	1
12	2	2
13	2	2
14	1	1
15	1	3
16	1	2
17	2	2
18	2	2
19	2	1
20	1	1
21	2	1
22	1	4
23	1	1
24	2	2
25	1	2
26	1	2
27	2	1
28	2	4
29	1	1
30	1	1
31	1	2
32	2	1
33	1	1
34	2	3
35	2	1
36	2	1
37	2	2
38	2	1
39	1	3
40	1	2
41	1	2
42	2	1
43	2	4
44	2	2
45	1	1
46	1	1
47	1	1
48	1	1
49	2	4
50	1	2
51	2	2
52	2	1
53	1	2
54	1	2

55	1	1
56	2	1
57	2	1
58	1	3
59	1	2
60	2	1
61	2	4
62	1	2
63	1	2
64	1	1
65	1	1
66	2	2
67	1	1
68	1	1
69	2	2
70	2	1
71	1	1
72	1	1
73	1	2
74	1	2
75	1	3
76	1	2
77	1	2
78	2	1
79	2	1
80	1	1
81	2	2
82	2	1
83	1	2
84	1	1
85	1	1
86	1	1
87	1	1
88	1	1
89	1	3
90	2	2
91	2	2
92	1	1
93	1	1
94	1	2
95	1	2
96	1	1
97	2	2
98	2	1
99	2	1
100	1	1
101	2	1
102	1	1
103	1	1
104	2	1

105	2	2
106	2	4
107	2	1
108	1	1
109	1	1
110	2	2
111	1	1
112	2	4
113	1	1
114	1	1
115	1	2
116	2	1
117	1	2
118	2	2
119	1	1
120	2	1
121	2	1
122	1	2

```
> mydf[c("Age","Gender")] #another way to display the values of the 'gender' and
'JobSatisfaction' column which are the 2nd and 3rd column
```

	Age	Gender
1	35	1
2	33	1
3	23	1
4	60	1
5	35	1
6	34	2
7	61	2
8	59	1
9	37	2
10	30	1
11	34	2
12	34	2
13	27	2
14	38	1
15	41	1
16	58	1
17	34	2
18	48	2
19	26	2
20	39	1
21	29	2
22	36	1
23	25	1
24	39	2
25	40	1
26	53	1
27	39	2
28	27	2
29	35	1

30	25	1
31	29	1
32	23	2
33	40	1
34	36	2
35	64	2
36	43	2
37	28	2
38	48	2
39	52	1
40	32	1
41	23	1
42	44	2
43	36	2
44	33	2
45	52	1
46	38	1
47	34	1
48	62	1
49	36	2
50	37	1
51	39	2
52	61	2
53	20	1
54	22	1
55	36	1
56	48	2
57	58	2
58	50	1
59	24	1
60	44	2
61	30	2
62	32	1
63	32	1
64	44	1
65	34	1
66	42	2
67	40	1
68	37	1
69	32	2
70	31	2
71	44	1
72	39	1
73	30	1
74	41	1
75	39	1
76	33	1
77	25	1
78	31	2
79	41	2

```
80   42   1
81   33   2
82   36   2
83   39   1
84   39   1
85   62   1
86   62   1
87   34   1
88   52   1
89   40   1
90   43   2
91   41   2
92   64   1
93   26   1
94   45   1
95   33   1
96   36   1
97   45   2
98   51   2
99   38   2
100  57    1
101  45    2
102  43    1
103  37    1
104  33    2
105  51    2
106  43    2
107  42    2
108  25    1
109  40    1
110  57    2
111  38    1
112  41    2
113  32    1
114  39    1
115  43    1
116  50    2
117  49    1
118  35    2
119  22    1
120  33    2
121  29    2
122  22    1
>
> # Rows
>
> mydf[4,] #displaying a specific row ,'4th', from the data frame for viewing
  Age Gender JobSatisfaction ImportantCharacteristics YearsActive
PromotionChances AffectingWorkDec. Budg.Decision PrideAtWork
4  60    1                1                        1          20
              3                2              2           2
```

1
  Loyalty WorkRelations
4   1   1
>
> # Combined
>
> mydf[2:3,c("JobSatisfaction")] #displaying values from specific column and specified rows (rows 2nd and 3rd, column 'JobSatisfaction')
[1] 2 1
> mydf[2:3,2:3] #displaying values from specific columns and specified rows (rows 2nd and 3rd, column 'gender' and 'JobSatisfaction')
  Gender JobSatisfaction
2   1   2
3   1   1
> > #Levels
>
> mydf$Gender
  [1] 1 1 1 1 1 2 2 1 2 1 2 2 2 1 1 1 2 2 2 1 2 1 1 2 1 1 2 2 1 1 1 2 1 2 2 2 2 2 1 1 1 2 2
2 1 1 1 1 2 1 2 2 1 1 1 2 2 1 1 2 2
 [62] 1 1 1 1 2 1 1 2 2 1 1 1 1 1 1 1 2 2 1 2 2 1 1 1 1 1 1 2 2 1 1 1 1 2 2 2 1 2 1 1
2 2 2 2 1 1 2 1 2 1 1 1 2 1 2 1 2 2 1
Levels: 1 2
> table(mydf$Gender) #converting the column values from 'Gender' into a table

 1 2
70 52
> table(mydf$Age)   #converting the column values from 'Age' into a table

20 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 48 49
50 51 52 53 57 58 59 60 61 62 64
 1 3 3 1 4 2 2 1 3 3 2 6 6 7 3 8 4 4 9 5 5 3 5 4 3 3 1 2 2 3 1 2 2 1
 1 2 3 2
> table(mydf$Age, mydf$Gender) #Combining both tables to see the age distribution among males and females

    1 2
 20 1 0
 22 3 0
 23 2 1
 24 1 0
 25 4 0
 26 1 1
 27 0 2
 28 0 1
 29 1 2
 30 2 1
 31 0 2
 32 5 1
 33 2 4
 34 3 4

```
 35 2 1
 36 4 4
 37 3 1
 38 3 1
 39 6 3
 40 5 0
 41 2 3
 42 1 2
 43 2 3
 44 2 2
 45 1 2
 48 0 3
 49 1 0
 50 1 1
 51 0 2
 52 3 0
 53 1 0
 57 1 1
 58 1 1
 59 1 0
 60 1 0
 61 0 2
 62 3 0
 64 1 1
> # Filtering
>
> mydf[mydf$Gender == "1",] #filtering out all the values for males
```

	Age	Gender	JobSatisfaction	IMP.Characteristics	Yrs.Employed	PromotionChances	AffectingWorkDec.	Budg.Decision	PrideAtWork
1	36	1	2	4	3.00	1	2	1	2
2	32	1	2	3	9.00	5	2	1	2
3	23	1	1	1	1.50	1	2	2	1
4	60	1	1	1	20.00	3	2	2	1
5	35	1	2	1	3.00	3	2	1	2
8	59	1	2	5	1.50	2	1	2	2
10	30	1	1	5	5.00	2	2	1	1
14	38	1	1	4	15.00	1	2	1	2
15	41	1	3	1	1.00	4	2	2	4
16	58	1	2	4	36.00	5	2	1	2
20	39	1	1	5	3.00	5	3	1	

1									
22	36	1	4	5	4.08	4	2	2	3
23	25	1	1	4	2.00	1	3	2	2
25	40	1	2	1	11.83	1	2	1	2
26	53	1	2	1	10.00	2	2	1	2
29	35	1	1	1	10.00	5	1	2	2
30	25	1	1	5	2.50	5	2	1	1
31	29	1	2	5	1.00	1	1	1	3
33	40	1	1	5	4.33	1	3	1	3
39	52	1	3	5	0.08	5	3	2	2
40	32	1	2	1	3.00	2	1	2	2
41	23	1	2	1	1.00	1	2	2	3
45	52	1	1	5	1.00	5	1	1	2
46	38	1	1	5	2.66	5	3	1	1
47	34	1	1	5	5.50	4	2	1	1
48	62	1	1	1	52.25	4	2	1	2
50	37	1	2	5	19.00	1	2	1	3
53	20	1	2	4	3.00	2	3	1	3
54	22	1	2	5	1.00	3	3	1	2
55	36	1	1	5	7.00	2	2	1	2
58	50	1	3	5	22.50	4	3	2	2
59	24	1	2	5	1.00	2	2	2	2
62	32	1	2	5	7.00	2	3	2	2
63	32	1	2	1	12.00	5	2	1	1
64	44	1	1	4	22.00	2	2	1	2
65	34	1	1	5	4.00	2	2	1	

									2
67	40	1	1	5	2.00	2	1	1	1
68	37	1	1	5	5.00	1	1	2	2
71	44	1	1	4	0.66	5	3	1	1
72	39	1	1	5	11.00	4	2	1	1
73	30	1	2	1	11.00	5	2	2	2
74	41	1	2	4	12.00	3	3	2	2
75	39	1	3	4	9.00	4	3	2	2
76	33	1	2	5	10.00	5	1	1	1
77	25	1	2	4	3.00	5	1	1	2
80	42	1	1	2	5.00	4	3	1	2
83	39	1	2	4	16.00	2	2	2	2
84	39	1	1	1	3.25	5	3	1	1
85	62	1	1	2	27.00	5	2	1	2
86	62	1	1	1	1.91	2	1	2	2
87	34	1	1	4	2.08	2	3	1	1
88	52	1	1	2	31.91	2	4	1	1
89	40	1	3	5	6.00	5	3	2	2
92	64	1	1	5	29.00	5	2	2	2
93	26	1	1	4	1.50	1	1	2	2
94	45	1	2	5	0.58	4	2	1	2
95	33	1	2	1	7.00	4	3	1	2
96	36	1	1	3	5.00	5	3	2	2
100	57	1	1	1	34.00	5	2	1	1
102	43	1	1	5	26.00	5	3	1	1
103	37	1	1	5	5.00	4	2	1	

									2
108	25	1	1	5	2.50	5	3	1	1
109	40	1	1	5	11.25	3	3	1	2
111	38	1	1	5	2.00	5	3	1	1
113	32	1	1	2	1.50	4	2	2	2
114	39	1	1	5	9.00	5	2	1	1
115	43	1	2	3	5.00	4	2	1	2
117	49	1	2	4	1.50	5	4	1	1
119	22	1	1	5	1.00	1	1	2	2
122	22	1	2	2	1.25	1	2	2	2

	Loyalty	WorkRelations
1	5	2
2	2	1
3	5	2
4	1	1
5	4	2
8	4	1
10	2	2
14	2	1
15	5	3
16	5	2
20	1	1
22	4	3
23	4	2
25	4	2
26	4	1
29	4	3
30	2	1
31	4	2
33	4	2
39	4	1
40	2	2
41	4	1
45	2	1
46	1	1
47	1	2
48	2	1
50	4	2
53	2	1
54	5	2
55	4	1

58	4	2
59	4	1
62	2	1
63	2	3
64	4	1
65	2	1
67	1	2
68	4	1
71	5	1
72	2	1
73	4	1
74	4	1
75	5	1
76	4	1
77	5	2
80	5	2
83	4	2
84	1	1
85	2	1
86	4	3
87	4	1
88	2	2
89	4	3
92	4	2
93	4	2
94	4	3
95	4	1
96	4	1
100	2	2
102	4	2
103	4	2
108	1	2
109	2	2
111	1	1
113	4	2
114	2	2
115	4	1
117	1	1
119	4	1
122	4	2

```
> mydf[mydf$Gender == "2",] #filtering out all the values for females
   Age Gender JobSatisfaction IMP.Characteristics Yrs.Employed
PromotionChances AffectingWorkDec. Budg.Decision PrideAtWork
```

	Age	Gender	JobSatisfaction	IMP.Characteristics	Yrs.Employed	PromotionChances	AffectingWorkDec.	Budg.Decision	PrideAtWork
6	34	2	2	1	6.00	1	2	2	2
7	61	2	1	1	0.75	5	3	2	2
9	37	2	1	5	3.00	4	3	1	2
11	34	2	1	3	3.00	4	2	1	

1

12	34	2	2	3	8.00	2	2	1	2
13	27	2	2	5	7.00	2	3	2	2
17	34	2	2	1	1.50	2	3	2	2
18	48	2	2	5	6.00	4	2	2	2
19	26	2	1	4	3.50	3	2	1	1
21	29	2	1	5	16.00	1	1	1	2
24	39	2	2	5	2.00	1	2	2	2
27	39	2	1	5	1.00	5	3	1	1
28	27	2	4	2	2.00	5	1	2	2
32	23	2	1	2	0.75	1	3	1	1
34	36	2	3	1	10.00	2	2	2	2
35	64	2	1	4	7.00	5	2	1	1
36	43	2	1	5	18.00	5	2	1	2
37	28	2	2	5	0.16	2	3	2	2
38	48	2	1	5	1.66	5	3	2	1
42	44	2	1	1	5.00	2	2	2	2
43	36	2	4	1	9.50	4	3	1	3
44	33	2	2	3	3.75	2	2	2	2
49	36	2	4	5	1.00	1	3	2	2
51	39	2	2	5	10.00	4	2	1	1
52	61	2	1	5	13.00	4	2	2	1
56	48	2	1	4	4.00	1	3	2	1
57	58	2	1	4	12.00	4	3	2	2
60	44	2	1	1	10.00	4	1	2	1
61	30	2	4	5	2.00	4	3	2	

2

66	42	2	2	5	22.00	2	2	1
								2
69	32	2	2	5	11.00	4	4	1
								2
70	31	2	1	1	10.00	1	2	1
								2
78	31	2	1	5	5.50	5	3	2
								2
79	41	2	1	5	2.33	2	2	2
								1
81	33	2	2	5	1.00	4	3	2
								2
82	36	2	1	5	6.00	5	2	1
								1
90	43	2	2	5	14.00	5	2	1
								2
91	41	2	2	5	4.00	4	3	1
								2
97	45	2	2	5	21.00	2	2	1
								2
98	51	2	1	5	24.00	2	2	2
								2
99	38	2	1	1	6.00	1	2	2
								2
101	45	2	1	5	4.00	2	1	1
								1
104	33	2	1	1	1.00	4	3	2
								1
105	51	2	2	5	23.00	5	3	1
								2
106	43	2	4	5	3.00	4	3	2
								3
107	42	2	1	5	6.00	4	3	2
								2
110	57	2	2	5	29.25	5	3	2
								1
112	41	2	4	5	11.00	5	1	2
								3
116	50	2	1	5	1.00	5	3	1
								2
118	35	2	2	2	10.00	4	3	2
								2
120	33	2	1	5	11.00	5	2	1
								2
121	29	2	1	5	2.00	2	2	1
								1

	Loyalty	WorkRelations
6	4	4
7	4	1

9	2	3
11	4	2
12	2	2
13	4	2
17	2	2
18	4	2
19	2	1
21	2	3
24	4	3
27	1	1
28	4	3
32	1	1
34	3	1
35	1	2
36	2	1
37	5	2
38	2	3
42	4	1
43	5	4
44	4	2
49	5	2
51	4	2
52	1	2
56	4	1
57	4	2
60	1	1
61	4	2
66	4	2
69	5	2
70	2	3
78	4	1
79	4	3
81	5	3
82	2	1
90	4	1
91	4	2
97	4	3
98	2	2
99	2	2
101	1	1
104	1	1
105	4	1
106	5	3
107	4	2
110	5	3
112	4	3
116	5	4
118	5	1
120	2	1
121	2	2

```
> mydf[mydf$Age == "39",] #filtering out all the values for employees aged 39
```

	Age	Gender	JobSatisfaction	IMP.Characteristics	Yrs.Employed	PromotionChances	AffectingWorkDec.	Budg.Decision	PrideAtWork
20	39	1	1	5	3.00	5	3	1	1
24	39	2	2	5	2.00	1	2	2	2
27	39	2	1	5	1.00	5	3	1	1
51	39	2	2	5	10.00	4	2	1	1
72	39	1	1	5	11.00	4	2	1	1
75	39	1	3	4	9.00	4	3	2	2
83	39	1	2	4	16.00	2	2	2	2
84	39	1	1	1	3.25	5	3	1	1
114	39	1	1	5	9.00	5	2	1	1

	Loyalty	WorkRelations
20	1	1
24	4	3
27	1	1
51	4	2
72	2	1
75	5	1
83	4	2
84	1	1
114	2	2

```
> # Ordering
>
> mydf[order(mydf$Age),]  #sorting/ordering all the column values by age, in
ascending order
```

	Age	Gender	JobSatisfaction	IMP.Characteristics	Yrs.Employed	PromotionChances	AffectingWorkDec.	Budg.Decision	PrideAtWork
53	20	1	2	4	3.00	2	3	1	3
54	22	1	2	5	1.00	3	3	1	2
119	22	1	1	5	1.00	1	1	2	2
122	22	1	2	2	1.25	1	2	2	2
3	23	1	1	1	1.50	1	2	2	1
32	23	2	1	2	0.75	1	3	1	1
41	23	1	2	1	1.00	1	2	2	

									3
59	24	1	2	5	1.00	2	2	2	2
23	25	1	1	4	2.00	1	3	2	2
30	25	1	1	5	2.50	5	2	1	1
77	25	1	2	4	3.00	5	1	1	2
108	25	1	1	5	2.50	5	3	1	1
19	26	2	1	4	3.50	3	2	1	1
93	26	1	1	4	1.50	1	1	2	2
13	27	2	2	5	7.00	2	3	2	2
28	27	2	4	2	2.00	5	1	2	2
37	28	2	2	5	0.16	2	3	2	2
21	29	2	1	5	16.00	1	1	1	2
31	29	1	2	5	1.00	1	1	1	3
121	29	2	1	5	2.00	2	2	1	1
10	30	1	1	5	5.00	2	2	1	1
61	30	2	4	5	2.00	4	3	2	2
73	30	1	2	1	11.00	5	2	2	2
70	31	2	1	1	10.00	1	2	1	2
78	31	2	1	5	5.50	5	3	2	2
2	32	1	2	3	9.00	5	2	1	2
40	32	1	2	1	3.00	2	1	2	2
62	32	1	2	5	7.00	2	3	2	2
63	32	1	2	1	12.00	5	2	1	1
69	32	2	2	5	11.00	4	4	1	2
113	32	1	1	2	1.50	4	2	2	2
44	33	2	2	3	3.75	2	2	2	

									2
76	33	1	2	5	10.00	5	1	1	1
81	33	2	2	5	1.00	4	3	2	2
95	33	1	2	1	7.00	4	3	1	2
104	33	2	1	1	1.00	4	3	2	1
120	33	2	1	5	11.00	5	2	1	2
6	34	2	2	1	6.00	1	2	2	2
11	34	2	1	3	3.00	4	2	1	1
12	34	2	2	3	8.00	2	2	1	2
17	34	2	2	1	1.50	2	3	2	2
47	34	1	1	5	5.50	4	2	1	1
65	34	1	1	5	4.00	2	2	1	2
87	34	1	1	4	2.08	2	3	1	1
5	35	1	2	1	3.00	3	2	1	2
29	35	1	1	1	10.00	5	1	2	2
118	35	2	2	2	10.00	4	3	2	2
1	36	1	2	4	3.00	1	2	1	2
22	36	1	4	5	4.08	4	2	2	3
34	36	2	3	1	10.00	2	2	2	2
43	36	2	4	1	9.50	4	3	1	3
49	36	2	4	5	1.00	1	3	2	2
55	36	1	1	5	7.00	2	2	1	2
82	36	2	1	5	6.00	5	2	1	1
96	36	1	1	3	5.00	5	3	2	2
9	37	2	1	5	3.00	4	3	1	2
50	37	1	2	5	19.00	1	2	1	

									3
68	37	1	1	5	5.00	1	1	2	2
103	37	1	1	5	5.00	4	2	1	2
14	38	1	1	4	15.00	1	2	1	2
46	38	1	1	5	2.66	5	3	1	1
99	38	2	1	1	6.00	1	2	2	2
111	38	1	1	5	2.00	5	3	1	1
20	39	1	1	5	3.00	5	3	1	1
24	39	2	2	5	2.00	1	2	2	2
27	39	2	1	5	1.00	5	3	1	1
51	39	2	2	5	10.00	4	2	1	1
72	39	1	1	5	11.00	4	2	1	1
75	39	1	3	4	9.00	4	3	2	2
83	39	1	2	4	16.00	2	2	2	2
84	39	1	1	1	3.25	5	3	1	1
114	39	1	1	5	9.00	5	2	1	1
25	40	1	2	1	11.83	1	2	1	2
33	40	1	1	5	4.33	1	3	1	3
67	40	1	1	5	2.00	2	1	1	1
89	40	1	3	5	6.00	5	3	2	2
109	40	1	1	5	11.25	3	3	1	2
15	41	1	3	1	1.00	4	2	2	4
74	41	1	2	4	12.00	3	3	2	2
79	41	2	1	5	2.33	2	2	2	1
91	41	2	2	5	4.00	4	3	1	2
112	41	2	4	5	11.00	5	1	2	

3

66	42	2	2	5	22.00	2	2	1
2								
80	42	1	1	2	5.00	4	3	1
2								
107	42	2	1	5	6.00	4	3	2
2								
36	43	2	1	5	18.00	5	2	1
2								
90	43	2	2	5	14.00	5	2	1
2								
102	43	1	1	5	26.00	5	3	1
1								
106	43	2	4	5	3.00	4	3	2
3								
115	43	1	2	3	5.00	4	2	1
2								

	Loyalty	WorkRelations
53	2	1
54	5	2
119	4	1
122	4	2
3	5	2
32	1	1
41	4	1
59	4	1
23	4	2
30	2	1
77	5	2
108	1	2
19	2	1
93	4	2
13	4	2
28	4	3
37	5	2
21	2	3
31	4	2
121	2	2
10	2	2
61	4	2
73	4	1
70	2	3
78	4	1
2	2	1
40	2	2
62	2	1
63	2	3
69	5	2
113	4	2
44	4	2

76	4	1
81	5	3
95	4	1
104	1	1
120	2	1
6	4	4
11	4	2
12	2	2
17	2	2
47	1	2
65	2	1
87	4	1
5	4	2
29	4	3
118	5	1
1	5	2
22	4	3
34	3	1
43	5	4
49	5	2
55	4	1
82	2	1
96	4	1
9	2	3
50	4	2
68	4	1
103	4	2
14	2	1
46	1	1
99	2	2
111	1	1
20	1	1
24	4	3
27	1	1
51	4	2
72	2	1
75	5	1
83	4	2
84	1	1
114	2	2
25	4	2
33	4	2
67	1	2
89	4	3
109	2	2
15	5	3
74	4	1
79	4	3
91	4	2
112	4	3

```
66      4       2
80      5       2
107      4       2
36      2       1
90      4       1
102      4       2
106      5       3
115      4       1
 [ reached 'max' / getOption("max.print") -- omitted 32 rows ]
> mydf[order(-mydf$Age),] #sorting/ordering all the column values by age, in
descending order
```

	Age	Gender	JobSatisfaction	IMP.Characteristics	Yrs.Employed	PromotionChances	AffectingWorkDec.	Budg.Decision	PrideAtWork
35	64	2	1	4	7.00	5	2	1	1
92	64	1	1	5	29.00	5	2	2	2
48	62	1	1	1	52.25	4	2	1	2
85	62	1	1	2	27.00	5	2	1	2
86	62	1	1	1	1.91	2	1	2	2
7	61	2	1	1	0.75	5	3	2	2
52	61	2	1	5	13.00	4	2	2	1
4	60	1	1	1	20.00	3	2	2	1
8	59	1	2	5	1.50	2	1	2	2
16	58	1	2	4	36.00	5	2	1	2
57	58	2	1	4	12.00	4	3	2	2
100	57	1	1	1	34.00	5	2	1	1
110	57	2	2	5	29.25	5	3	2	1
26	53	1	2	1	10.00	2	2	1	2
39	52	1	3	5	0.08	5	3	2	2
45	52	1	1	5	1.00	5	1	1	2
88	52	1	1	2	31.91	2	4	1	1
98	51	2	1	5	24.00	2	2	2	2
105	51	2	2	5	23.00	5	3	1	

2

58	50	1	3	5	22.50	4	3	2	2
116	50	2	1	5	1.00	5	3	1	2
117	49	1	2	4	1.50	5	4	1	1
18	48	2	2	5	6.00	4	2	2	2
38	48	2	1	5	1.66	5	3	2	1
56	48	2	1	4	4.00	1	3	2	1
94	45	1	2	5	0.58	4	2	1	2
97	45	2	2	5	21.00	2	2	1	2
101	45	2	1	5	4.00	2	1	1	1
42	44	2	1	1	5.00	2	2	2	2
60	44	2	1	1	10.00	4	1	2	1
64	44	1	1	4	22.00	2	2	1	2
71	44	1	1	4	0.66	5	3	1	1
36	43	2	1	5	18.00	5	2	1	2
90	43	2	2	5	14.00	5	2	1	2
102	43	1	1	5	26.00	5	3	1	1
106	43	2	4	5	3.00	4	3	2	3
115	43	1	2	3	5.00	4	2	1	2
66	42	2	2	5	22.00	2	2	1	2
80	42	1	1	2	5.00	4	3	1	2
107	42	2	1	5	6.00	4	3	2	2
15	41	1	3	1	1.00	4	2	2	4
74	41	1	2	4	12.00	3	3	2	2
79	41	2	1	5	2.33	2	2	2	1
91	41	2	2	5	4.00	4	3	1	

2

112	41	2	4	5	11.00	5	1	2 3
25	40	1	2	1	11.83	1	2	1 2
33	40	1	1	5	4.33	1	3	1 3
67	40	1	1	5	2.00	2	1	1 1
89	40	1	3	5	6.00	5	3	2 2
109	40	1	1	5	11.25	3	3	1 2
20	39	1	1	5	3.00	5	3	1 1
24	39	2	2	5	2.00	1	2	2 2
27	39	2	1	5	1.00	5	3	1 1
51	39	2	2	5	10.00	4	2	1 1
72	39	1	1	5	11.00	4	2	1 1
75	39	1	3	4	9.00	4	3	2 2
83	39	1	2	4	16.00	2	2	2 2
84	39	1	1	1	3.25	5	3	1 1
114	39	1	1	5	9.00	5	2	1 1
14	38	1	1	4	15.00	1	2	1 2
46	38	1	1	5	2.66	5	3	1 1
99	38	2	1	1	6.00	1	2	2 2
111	38	1	1	5	2.00	5	3	1 1
9	37	2	1	5	3.00	4	3	1 2
50	37	1	2	5	19.00	1	2	1 3
68	37	1	1	5	5.00	1	1	2 2
103	37	1	1	5	5.00	4	2	1 2
1	36	1	2	4	3.00	1	2	1 2
22	36	1	4	5	4.08	4	2	2

3

34	36	2	3	1	10.00	2	2	2
2								
43	36	2	4	1	9.50	4	3	1
3								
49	36	2	4	5	1.00	1	3	2
2								
55	36	1	1	5	7.00	2	2	1
2								
82	36	2	1	5	6.00	5	2	1
1								
96	36	1	1	3	5.00	5	3	2
2								
5	35	1	2	1	3.00	3	2	1
2								
29	35	1	1	1	10.00	5	1	2
2								
118	35	2	2	2	10.00	4	3	2
2								
6	34	2	2	1	6.00	1	2	2
2								
11	34	2	1	3	3.00	4	2	1
1								
12	34	2	2	3	8.00	2	2	1
2								
17	34	2	2	1	1.50	2	3	2
2								
47	34	1	1	5	5.50	4	2	1
1								
65	34	1	1	5	4.00	2	2	1
2								
87	34	1	1	4	2.08	2	3	1
1								
44	33	2	2	3	3.75	2	2	2
2								
76	33	1	2	5	10.00	5	1	1
1								
81	33	2	2	5	1.00	4	3	2
2								
95	33	1	2	1	7.00	4	3	1
2								
104	33	2	1	1	1.00	4	3	2
1								

	Loyalty	WorkRelations
35	1	2
92	4	2
48	2	1
85	2	1
86	4	3
7	4	1

52	1	2
4	1	1
8	4	1
16	5	2
57	4	2
100	2	2
110	5	3
26	4	1
39	4	1
45	2	1
88	2	2
98	2	2
105	4	1
58	4	2
116	5	4
117	1	1
18	4	2
38	2	3
56	4	1
94	4	3
97	4	3
101	1	1
42	4	1
60	1	1
64	4	1
71	5	1
36	2	1
90	4	1
102	4	2
106	5	3
115	4	1
66	4	2
80	5	2
107	4	2
15	5	3
74	4	1
79	4	3
91	4	2
112	4	3
25	4	2
33	4	2
67	1	2
89	4	3
109	2	2
20	1	1
24	4	3
27	1	1
51	4	2
72	2	1
75	5	1

83	4	2
84	1	1
114	2	2
14	2	1
46	1	1
99	2	2
111	1	1
9	2	3
50	4	2
68	4	1
103	4	2
1	5	2
22	4	3
34	3	1
43	5	4
49	5	2
55	4	1
82	2	1
96	4	1
5	4	2
29	4	3
118	5	1
6	4	4
11	4	2
12	2	2
17	2	2
47	1	2
65	2	1
87	4	1
44	4	2
76	4	1
81	5	3
95	4	1
104	1	1

```
 [ reached 'max' / getOption("max.print") -- omitted 32 rows ]
> mydf[order(-mydf$JobSatisfaction),] #sorting/ordering all the column values by Job
Satisfcation, in descending order (Very Dissatisfied to Very Satisfied)
```

	Age	Gender	JobSatisfaction	IMP.Characteristics	Yrs.Employed	PromotionChances	AffectingWorkDec.	Budg.Decision	PrideAtWork
22	36	1	4	5	4.08	4	2	2	3
28	27	2	4	2	2.00	5	1	2	2
43	36	2	4	1	9.50	4	3	1	3
49	36	2	4	5	1.00	1	3	2	2
61	30	2	4	5	2.00	4	3	2	2
106	43	2	4	5	3.00	4	3	2	

									3
112	41	2	4	5	11.00	5	1	2	3
15	41	1	3	1	1.00	4	2	2	4
34	36	2	3	1	10.00	2	2	2	2
39	52	1	3	5	0.08	5	3	2	2
58	50	1	3	5	22.50	4	3	2	2
75	39	1	3	4	9.00	4	3	2	2
89	40	1	3	5	6.00	5	3	2	2
1	36	1	2	4	3.00	1	2	1	2
2	32	1	2	3	9.00	5	2	1	2
5	35	1	2	1	3.00	3	2	1	2
6	34	2	2	1	6.00	1	2	2	2
8	59	1	2	5	1.50	2	1	2	2
12	34	2	2	3	8.00	2	2	1	2
13	27	2	2	5	7.00	2	3	2	2
16	58	1	2	4	36.00	5	2	1	2
17	34	2	2	1	1.50	2	3	2	2
18	48	2	2	5	6.00	4	2	2	2
24	39	2	2	5	2.00	1	2	2	2
25	40	1	2	1	11.83	1	2	1	2
26	53	1	2	1	10.00	2	2	1	2
31	29	1	2	5	1.00	1	1	1	3
37	28	2	2	5	0.16	2	3	2	2
40	32	1	2	1	3.00	2	1	2	2
41	23	1	2	1	1.00	1	2	2	3
44	33	2	2	3	3.75	2	2	2	

50	37	1	2	5	19.00	1	2	1	3
51	39	2	2	5	10.00	4	2	1	1
53	20	1	2	4	3.00	2	3	1	3
54	22	1	2	5	1.00	3	3	1	2
59	24	1	2	5	1.00	2	2	2	2
62	32	1	2	5	7.00	2	3	2	2
63	32	1	2	1	12.00	5	2	1	1
66	42	2	2	5	22.00	2	2	1	2
69	32	2	2	5	11.00	4	4	1	2
73	30	1	2	1	11.00	5	2	2	2
74	41	1	2	4	12.00	3	3	2	2
76	33	1	2	5	10.00	5	1	1	1
77	25	1	2	4	3.00	5	1	1	2
81	33	2	2	5	1.00	4	3	2	2
83	39	1	2	4	16.00	2	2	2	2
90	43	2	2	5	14.00	5	2	1	2
91	41	2	2	5	4.00	4	3	1	2
94	45	1	2	5	0.58	4	2	1	2
95	33	1	2	1	7.00	4	3	1	2
97	45	2	2	5	21.00	2	2	1	2
105	51	2	2	5	23.00	5	3	1	2
110	57	2	2	5	29.25	5	3	2	1
115	43	1	2	3	5.00	4	2	1	2
117	49	1	2	4	1.50	5	4	1	1
118	35	2	2	2	10.00	4	3	2	

									2
122	22	1	2	2	1.25	1	2	2	2
3	23	1	1	1	1.50	1	2	2	1
4	60	1	1	1	20.00	3	2	2	1
7	61	2	1	1	0.75	5	3	2	2
9	37	2	1	5	3.00	4	3	1	2
10	30	1	1	5	5.00	2	2	1	1
11	34	2	1	3	3.00	4	2	1	1
14	38	1	1	4	15.00	1	2	1	2
19	26	2	1	4	3.50	3	2	1	1
20	39	1	1	5	3.00	5	3	1	1
21	29	2	1	5	16.00	1	1	1	2
23	25	1	1	4	2.00	1	3	2	2
27	39	2	1	5	1.00	5	3	1	1
29	35	1	1	1	10.00	5	1	2	2
30	25	1	1	5	2.50	5	2	1	1
32	23	2	1	2	0.75	1	3	1	1
33	40	1	1	5	4.33	1	3	1	3
35	64	2	1	4	7.00	5	2	1	1
36	43	2	1	5	18.00	5	2	1	2
38	48	2	1	5	1.66	5	3	2	1
42	44	2	1	1	5.00	2	2	2	2
45	52	1	1	5	1.00	5	1	1	2
46	38	1	1	5	2.66	5	3	1	1
47	34	1	1	5	5.50	4	2	1	1
48	62	1	1	1	52.25	4	2	1	

2

52	61	2	1	5	13.00	4	2	2	1
55	36	1	1	5	7.00	2	2	1	2
56	48	2	1	4	4.00	1	3	2	1
57	58	2	1	4	12.00	4	3	2	2
60	44	2	1	1	10.00	4	1	2	1
64	44	1	1	4	22.00	2	2	1	2
65	34	1	1	5	4.00	2	2	1	2
67	40	1	1	5	2.00	2	1	1	1
68	37	1	1	5	5.00	1	1	2	2

	Loyalty	WorkRelations
22	4	3
28	4	3
43	5	4
49	5	2
61	4	2
106	5	3
112	4	3
15	5	3
34	3	1
39	4	1
58	4	2
75	5	1
89	4	3
1	5	2
2	2	1
5	4	2
6	4	4
8	4	1
12	2	2
13	4	2
16	5	2
17	2	2
18	4	2
24	4	3
25	4	2
26	4	1
31	4	2
37	5	2
40	2	2
41	4	1

44	4	2
50	4	2
51	4	2
53	2	1
54	5	2
59	4	1
62	2	1
63	2	3
66	4	2
69	5	2
73	4	1
74	4	1
76	4	1
77	5	2
81	5	3
83	4	2
90	4	1
91	4	2
94	4	3
95	4	1
97	4	3
105	4	1
110	5	3
115	4	1
117	1	1
118	5	1
122	4	2
3	5	2
4	1	1
7	4	1
9	2	3
10	2	2
11	4	2
14	2	1
19	2	1
20	1	1
21	2	3
23	4	2
27	1	1
29	4	3
30	2	1
32	1	1
33	4	2
35	1	2
36	2	1
38	2	3
42	4	1
45	2	1
46	1	1
47	1	2

```
48      2       1
52      1       2
55      4       1
56      4       1
57      4       2
60      1       1
64      4       1
65      2       1
67      1       2
68      4       1
 [ reached 'max' / getOption("max.print") -- omitted 32 rows ]
> mydf[order(mydf$PromotionChances),] #sorting/ordering all the column values by
Promotion Chances, in ascending order (Very Likely to Very Unlikely)
```

	Age	Gender	JobSatisfaction	IMP.Characteristics	Yrs.Employed	PromotionChances	AffectingWorkDec.	Budg.Decision	PrideAtWork
1	36	1	2	4	3.00	1	2	1	2
3	23	1	1	1	1.50	1	2	2	1
6	34	2	2	1	6.00	1	2	2	2
14	38	1	1	4	15.00	1	2	1	2
21	29	2	1	5	16.00	1	1	1	2
23	25	1	1	4	2.00	1	3	2	2
24	39	2	2	5	2.00	1	2	2	2
25	40	1	2	1	11.83	1	2	1	2
31	29	1	2	5	1.00	1	1	1	3
32	23	2	1	2	0.75	1	3	1	1
33	40	1	1	5	4.33	1	3	1	3
41	23	1	2	1	1.00	1	2	2	3
49	36	2	4	5	1.00	1	3	2	2
50	37	1	2	5	19.00	1	2	1	3
56	48	2	1	4	4.00	1	3	2	1
68	37	1	1	5	5.00	1	1	2	2
70	31	2	1	1	10.00	1	2	1	2
93	26	1	1	4	1.50	1	1	2	

2

99	38	2	1	1	6.00	1	2	2	2
119	22	1	1	5	1.00	1	1	2	2
122	22	1	2	2	1.25	1	2	2	2
8	59	1	2	5	1.50	2	1	2	2
10	30	1	1	5	5.00	2	2	1	1
12	34	2	2	3	8.00	2	2	1	2
13	27	2	2	5	7.00	2	3	2	2
17	34	2	2	1	1.50	2	3	2	2
26	53	1	2	1	10.00	2	2	1	2
34	36	2	3	1	10.00	2	2	2	2
37	28	2	2	5	0.16	2	3	2	2
40	32	1	2	1	3.00	2	1	2	2
42	44	2	1	1	5.00	2	2	2	2
44	33	2	2	3	3.75	2	2	2	2
53	20	1	2	4	3.00	2	3	1	3
55	36	1	1	5	7.00	2	2	1	2
59	24	1	2	5	1.00	2	2	2	2
62	32	1	2	5	7.00	2	3	2	2
64	44	1	1	4	22.00	2	2	1	2
65	34	1	1	5	4.00	2	2	1	2
66	42	2	2	5	22.00	2	2	1	2
67	40	1	1	5	2.00	2	1	1	1
79	41	2	1	5	2.33	2	2	2	1
83	39	1	2	4	16.00	2	2	2	2
86	62	1	1	1	1.91	2	1	2	

2

87	34	1	1	4	2.08	2	3	1	1
88	52	1	1	2	31.91	2	4	1	1
97	45	2	2	5	21.00	2	2	1	2
98	51	2	1	5	24.00	2	2	2	2
101	45	2	1	5	4.00	2	1	1	1
121	29	2	1	5	2.00	2	2	1	1
4	60	1	1	1	20.00	3	2	2	1
5	35	1	2	1	3.00	3	2	1	2
19	26	2	1	4	3.50	3	2	1	1
54	22	1	2	5	1.00	3	3	1	2
74	41	1	2	4	12.00	3	3	2	2
109	40	1	1	5	11.25	3	3	1	2
9	37	2	1	5	3.00	4	3	1	2
11	34	2	1	3	3.00	4	2	1	1
15	41	1	3	1	1.00	4	2	2	4
18	48	2	2	5	6.00	4	2	2	2
22	36	1	4	5	4.08	4	2	2	3
43	36	2	4	1	9.50	4	3	1	3
47	34	1	1	5	5.50	4	2	1	1
48	62	1	1	1	52.25	4	2	1	2
51	39	2	2	5	10.00	4	2	1	1
52	61	2	1	5	13.00	4	2	2	1
57	58	2	1	4	12.00	4	3	2	2
58	50	1	3	5	22.50	4	3	2	2
60	44	2	1	1	10.00	4	1	2	

1

61	30	2	4	5	2.00	4	3	2	2
69	32	2	2	5	11.00	4	4	1	2
72	39	1	1	5	11.00	4	2	1	1
75	39	1	3	4	9.00	4	3	2	2
80	42	1	1	2	5.00	4	3	1	2
81	33	2	2	5	1.00	4	3	2	2
91	41	2	2	5	4.00	4	3	1	2
94	45	1	2	5	0.58	4	2	1	2
95	33	1	2	1	7.00	4	3	1	2
103	37	1	1	5	5.00	4	2	1	2
104	33	2	1	1	1.00	4	3	2	1
106	43	2	4	5	3.00	4	3	2	3
107	42	2	1	5	6.00	4	3	2	2
113	32	1	1	2	1.50	4	2	2	2
115	43	1	2	3	5.00	4	2	1	2
118	35	2	2	2	10.00	4	3	2	2
2	32	1	2	3	9.00	5	2	1	2
7	61	2	1	1	0.75	5	3	2	2
16	58	1	2	4	36.00	5	2	1	2
20	39	1	1	5	3.00	5	3	1	1
27	39	2	1	5	1.00	5	3	1	1
28	27	2	4	2	2.00	5	1	2	2

	Loyalty	WorkRelations
1	5	2
3	5	2
6	4	4
14	2	1

21	2	3
23	4	2
24	4	3
25	4	2
31	4	2
32	1	1
33	4	2
41	4	1
49	5	2
50	4	2
56	4	1
68	4	1
70	2	3
93	4	2
99	2	2
119	4	1
122	4	2
8	4	1
10	2	2
12	2	2
13	4	2
17	2	2
26	4	1
34	3	1
37	5	2
40	2	2
42	4	1
44	4	2
53	2	1
55	4	1
59	4	1
62	2	1
64	4	1
65	2	1
66	4	2
67	1	2
79	4	3
83	4	2
86	4	3
87	4	1
88	2	2
97	4	3
98	2	2
101	1	1
121	2	2
4	1	1
5	4	2
19	2	1
54	5	2
74	4	1

```
109    2        2
9      2        3
11     4        2
15     5        3
18     4        2
22     4        3
43     5        4
47     1        2
48     2        1
51     4        2
52     1        2
57     4        2
58     4        2
60     1        1
61     4        2
69     5        2
72     2        1
75     5        1
80     5        2
81     5        3
91     4        2
94     4        3
95     4        1
103    4        2
104    1        1
106    5        3
107    4        2
113    4        2
115    4        1
118    5        1
2      2        1
7      4        1
16     5        2
20     1        1
27     1        1
28     4        3
 [ reached 'max' / getOption("max.print") -- omitted 32 rows ]
>
>
> # Change Column Name
>
> names(mydf)[4] <- "IMP.Characteristics" #changing column name from
ImportantCharacrteristics to IMP.Characteristics
> head(mydf)
  Age Gender JobSatisfaction IMP.Characteristics Yrs.Employed PromotionChances
AffectingWorkDec. Budg.Decision PrideAtWork
1 36    1          2               4            3.0          1                2             1          2
2 32    1          2               3            9.0          5                2             1          2
3 23    1          1               1            1.5          1                2             2          1
4 60    1          1               1           20.0          3                2             2          1
```

```
5 35    1        2          1          3.0        3           2        1        2
6 34    2        2          1          6.0        1           2        2        2
  Loyalty WorkRelations
1    5        2
2    2        1
3    5        2
4    1        1
5    4        2
6    4        4
> names(mydf)[5] <- "Yrs.Employed"  #changing column name from YearsActive to
Yrs.Employed
> head(mydf)
  Age Gender JobSatisfaction IMP.Characteristics Yrs.Employed PromotionChances
AffectingWorkDec. Budg.Decision PrideAtWork
1 36    1        2          4          3.0        1           2        1        2
2 32    1        2          3          9.0        5           2        1        2
3 23    1        1          1          1.5        1           2        2        1
4 60    1        1          1          20.0       3           2        2        1
5 35    1        2          1          3.0        3           2        1        2
6 34    2        2          1          6.0        1           2        2        2
  Loyalty WorkRelations
1    5        2
2    2        1
3    5        2
4    1        1
5    4        2
6    4        4
> # Changing Row Values
>
> mydf [1,1] <- 36 #changing 'Age' value for the 1st employee to '36' from '35'
> head(mydf)
  Age Gender JobSatisfaction IMP.Characteristics Yrs.Employed PromotionChances
AffectingWorkDec. Budg.Decision PrideAtWork
1 36    1        2          4          3.0        1           2        1        2
2 32    1        2          3          9.0        5           2        1        2
3 23    1        1          1          1.5        1           2        2        1
4 60    1        1          1          20.0       3           2        2        1
5 35    1        2          1          3.0        3           2        1        2
6 34    2        2          1          6.0        1           2        2        2
  Loyalty WorkRelations
1    5        2
2    2        1
3    5        2
4    1        1
5    4        2
6    4        4
> mydf$Age[2] <- 32 #changing 'Age' value for the 2nd employee to '32' from '33'
> head(mydf)
  Age Gender JobSatisfaction IMP.Characteristics Yrs.Employed PromotionChances
AffectingWorkDec. Budg.Decision PrideAtWork
```

```
1 36    1        2        4       3.0       1        2        1        2
2 32    1        2        3       9.0       5        2        1        2
3 23    1        1        1       1.5       1        2        2        1
4 60    1        1        1      20.0       3        2        2        1
5 35    1        2        1       3.0       3        2        1        2
6 34    2        2        1       6.0       1        2        2        2
  Loyalty WorkRelations
1    5          2
2    2          1
3    5          2
4    1          1
5    4          2
6    4          4
>
>
> # Graphing
> barplot(mydf$Age) #minimalist bar chart of ages in the survey data
>
> barplot(mydf$Age, main = "Age of People", xlab = "Employees", ylab = "Age", col = "Red") #proper graph of ages with name, y-axis name, x-axis name and colored plots
>
> pie(mydf$Age) #minimalist pie chart of employee ages in the survey data
>
> pie(mydf$Age, main = "Ages of Employees") #proper pie chart of employee ages in the survey data with name of the pie chart
>
> stem(mydf$Yrs.Employed)  #creating a stem and leaf plot w.r.t to the Years employed of employees of the company

  The decimal point is 1 digit(s) to the right of the |

  0 | 0011111111111111111122222222222222222233333333333344444444
  0 | 5555555666666666777778999
  1 | 00000000001111112222234
  1 | 56689
  2 | 0122334
  2 | 6799
  3 | 24
  3 | 6
  4 |
  4 |
  5 | 2


>
> stem(mydf$Age)  #creating a stem and leaf plot w.r.t to the age of employees of the company

  The decimal point is at the |
```

```
20 | 0
22 | 000000
24 | 00000
26 | 0000
28 | 0000
30 | 00000
32 | 000000000000
34 | 0000000000
36 | 000000000000
38 | 0000000000000
40 | 0000000000
42 | 00000000
44 | 0000000
46 |
48 | 0000
50 | 0000
52 | 0000
54 |
56 | 00
58 | 000
60 | 000
62 | 000
64 | 00
```

```
>
> hist(mydf$Age)  #creating a histogram by the age of employees of the company
>
> hist(mydf$JobSatisfaction) #creating a histogram by the age of employees of the
company
>
> hist(mydf$Loyalty) #creating a histogram by the loyalty of employees of the
company
>
> hist(mydf$PromotionChances) #creating a histogram by the chances of promotion
of employees of the company
>
> boxplot(mydf$Age) #creating a boxplot by the age of employees of the company
>
> boxplot(mydf$PromotionChances) #creating a boxplot by the chances of promotion
of employees of the company
>
> boxplot(mydf$Age,mydf$Yrs.Employed) #creating 2 boxplots by the age and years
employed of employees of the company to view them together
> # Summary Stats
>
> min(mydf$Age) #finding out the minimum age out of all the employees
[1] 20
> max(mydf$Age) #finding out the maximum age out of all the employees
[1] 64
> range(mydf$Age) #finding out the range of ages in all the employees
```

```
[1] 20 64
> min(mydf$Yrs.Employed) #finding out the minimum age out of all the employees
[1] 0.08
> max(mydf$Yrs.Employed) #finding out the maximum age out of all the employees
[1] 52.25
> range(mydf$Yrs.Employed) #finding out the range of ages in all the employees
[1]  0.08 52.25
> AgeRange = max(mydf$Age) - min(mydf$Age)
> AgeRange
[1] 44
> #rm(StatRange)
> Yrs.EmployesRange = max(mydf$Yrs.Employed) - min(mydf$Yrs.Employed)
> Yrs.EmployesRange
[1] 52.17
> mean(mydf$Age)  #calculating mean of age
[1] 39.09836
> mean(mydf$Yrs.Employed) #calculating mean of years emoloyed
[1] 8.223525
> sd(mydf$Age)  #standard dev of age
[1] 10.43628
> var(mydf$Age) #variance of age
[1] 108.9159
> sqrt(var(mydf$Age)) #another way to calculate the standard dev
[1] 10.43628
> fivenum(mydf$Age) #calculating Turkey's five number summary of age from the
survey data
[1] 20 32 38 44 64
> IQR(mydf$Age)     #interquartile range of age
[1] 11.75
> quantile(mydf$Age)  #quartiles of age w.r.t to the survey data
   0%   25%   50%   75%  100%
20.00 32.25 38.00 44.00 64.00
> summary(mydf$Age)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  20.00   32.25   38.00   39.10   44.00   64.00
> boxplot.stats(mydf$Age)
$stats
[1] 20 32 38 44 62

$n
[1] 122

$conf
[1] 36.28344 39.71656

$out
[1] 64 64

> boxplot.stats(mydf$Age)$out
[1] 64 64
```

```
> mean(mydf$PrideAtWork)  #calculating mean of employees being proud at the
organization they work at
[1] 1.786885
> mean(mydf$PrideAtWork) #calculating mean of yemployees being proud at the
organization they work at
[1] 1.786885
> sd(mydf$PrideAtWork)  #standard dev of employees being proud at the
organization they work at
[1] 0.60616
> var(mydf$PrideAtWork) #variance of employees being proud at the organization
they work at
[1] 0.3674299
> sqrt(var(mydf$PrideAtWork)) #another way to calculate the standard dev
[1] 0.60616
> fivenum(mydf$Yrs.Employed) #calculating Turkey's five number summary of years
employed from the survey data
[1]  0.08  2.00  5.00 11.00 52.25
> IQR(mydf$Yrs.Employed)    #interquartile range of years employed
[1] 9
> quantile(mydf$Yrs.Employed)  #quartiles of years employed w.r.t to the survey
data
   0%   25%   50%   75%  100%
 0.08  2.00  5.00 11.00 52.25
> summary(mydf$Yrs.Employed)
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 0.080   2.000   5.000   8.224  11.000  52.250
> boxplot.stats(mydf$Yrs.Employed)
$stats
[1]  0.08  2.00  5.00 11.00 24.00

$n
[1] 122

$conf
[1] 3.712582 6.287418

$out
[1] 36.00 52.25 27.00 31.91 29.00 34.00 26.00 29.25

> boxplot.stats(mydf$Yrs.Employed)$out
[1] 36.00 52.25 27.00 31.91 29.00 34.00 26.00 29.25
> # Data Frame Summary
>
> summary(mydf) #summary of the entire survey data
      Age        Gender JobSatisfaction IMP.Characteristics  Yrs.Employed
PromotionChances AffectingWorkDec.
 Min.   :20.00  1:70   Min.   :1.000   Min.   :1.000       Min.   : 0.080  Min.   :1.000
Min.   :1.000
 1st Qu.:32.25  2:52   1st Qu.:1.000   1st Qu.:2.000       1st Qu.: 2.000   1st
Qu.:2.000    1st Qu.:2.000
```

```
 Median :38.00        Median :1.000   Median :5.000       Median : 5.000   Median
:4.000    Median :2.000
 Mean  :39.10         Mean  :1.631  Mean  :3.705        Mean  : 8.224  Mean  :3.287
Mean   :2.279
 3rd Qu.:44.00        3rd Qu.:2.000  3rd Qu.:5.000       3rd Qu.:11.000  3rd
Qu.:5.000    3rd Qu.:3.000
 Max.  :64.00         Max.  :4.000  Max.  :5.000        Max.  :52.250  Max.  :5.000
Max.   :4.000
 Budg.Decision   PrideAtWork      Loyalty     WorkRelations
 Min.  :1.000   Min.  :1.000   Min.  :1.000   Min.  :1.000
 1st Qu.:1.000   1st Qu.:1.000   1st Qu.:2.000   1st Qu.:1.000
 Median :1.000   Median :2.000   Median :4.000   Median :2.000
 Mean  :1.451   Mean  :1.787   Mean  :3.254   Mean  :1.787
 3rd Qu.:2.000   3rd Qu.:2.000   3rd Qu.:4.000   3rd Qu.:2.000
 Max.  :2.000   Max.  :4.000   Max.  :5.000   Max.  :4.000
>
> by(mydf$Age,mydf$Gender,mean) #calculating the mean ages separately for male
and female employees
mydf$Gender: 1
[1] 38.67143
------------------------------------------------------------------------------------------------
mydf$Gender: 2
[1] 39.67308
> by(mydf$Age,mydf$Gender,sd)   #calculating the sd of ages separately for male
and female employees
mydf$Gender: 1
[1] 11.06597
------------------------------------------------------------------------------------------------
mydf$Gender: 2
[1] 9.599267
> by(mydf$Age,mydf$Gender,summary)
mydf$Gender: 1
  Min. 1st Qu.  Median   Mean 3rd Qu.   Max.
 20.00  32.00  38.00  38.67  43.00  64.00
------------------------------------------------------------------------------------------------
mydf$Gender: 2
  Min. 1st Qu.  Median   Mean 3rd Qu.   Max.
 23.00  33.00  38.50  39.67  44.25  64.00
>
> by(mydf$Yrs.Employed,mydf$Gender,mean) #calculating the mean of being
employed at the company separately for male and female employees
mydf$Gender: 1
[1] 8.680286
------------------------------------------------------------------------------------------------
mydf$Gender: 2
[1] 7.608654
>
> by(mydf$Yrs.Employed,mydf$JobSatisfaction,mean) #calculating mean of
employment years based their satisfaction with the job
mydf$JobSatisfaction: 1
```

```
[1] 8.504462
------------------------------------------------------------------------------------------
mydf$JobSatisfaction: 2
[1] 8.393636
------------------------------------------------------------------------------------------
mydf$JobSatisfaction: 3
[1] 8.096667
------------------------------------------------------------------------------------------
mydf$JobSatisfaction: 4
[1] 4.654286
>
> aggregate(mydf$Age,list("Type" = mydf$Gender),median) #finding out the median
for different gender by ages
  Type   x
1    1 38.0
2    2 38.5
>
> aggregate(mydf$Age,list("Type" = mydf$Gender),summary) #finding out the
summary from the survey data for different genders by their ages
  Type   x.Min. x.1st Qu. x.Median   x.Mean x.3rd Qu.   x.Max.
1    1 20.00000  32.00000 38.00000 38.67143  43.00000 64.00000
2    2 23.00000  33.00000 38.50000 39.67308  44.25000 64.00000
```