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Contents : Assignment 5 - output file

```
R version 3.6.2 (2019-12-12) -- "Dark and Stormy Night"
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Platform: x86_64-w64-mingw32/x64 (64-bit)

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> library("readxl")
> df_bc = read.csv2(file.choose(),header = T, sep = ',')
> View(df_bc)
> #naming the columns
> names(df_bc) <- c("ID","CT","CellSize","CellShape","MA","ECellSize","BN"
,"BC","NN","Mit","Class")
> View(df_bc)
> #subsets
> subset1 <- df_bc[c(1:100),c(1,2,4,6,10)]
> subset1
         ID CT CellShape ECellSize Mit
1   1002945  5         4         7   1
2   1015425  3         1         2   1
3   1016277  6         8         3   1
4   1017023  4         1         2   1
5   1017122  8        10         7   1
6   1018099  1         1         2   1
7   1018561  2         2         2   1
8   1033078  2         1         2   5
9   1033078  4         1         2   1
10  1035283  1         1         1   1
11  1036172  2         1         2   1
12  1041801  5         3         2   1
13  1043999  1         1         2   1
14  1044572  8         5         7   4
15  1047630  7         6         6   1
16  1048672  4         1         2   1
17  1049815  4         1         2   1
18  1050670 10         7         4   2
19  1050718  6         1         2   1
20  1054590  7         2         5   4
21  1054593 10         5         6   1
22  1056784  3         1         2   1
23  1057013  8         5         2   1
24  1059552  1         1         2   1
25  1065726  5         3         2   1
26  1066373  3         1         1   1
27  1066979  5         1         2   1
28  1067444  2         1         2   1
29  1070935  1         3         2   1
30  1070935  3         1         1   1
31  1071760  2         1         2   1
32  1072179 10         7         8   3
33  1074610  2         1         2   1
34  1075123  3         2         2   1
```

```
35  1079304  2          1          2   1
36  1080185 10         10          6   1
37  1081791  6          1          1   1
38  1084584  5          4          2   1
39  1091262  2          3          6   1
40  1096800  6          6          6   1
41  1099510 10          3          3   2
42  1100524  6         10          8   3
43  1102573  5          5         10   1
44  1103608 10         10          8   1
45  1103722  1          1          2   2
46  1105257  3          7          4   1
47  1105524  1          1          2   1
48  1106095  4          1          2   1
49  1106829  7          7          4   2
50  1108370  9          8          2   5
51  1108449  5          3          2   1
52  1110102 10          6          3   2
53  1110503  5          5         10   7
54  1110524 10          5          8   1
55  1111249 10          6          4   1
56  1112209  8         10          3   1
57  1113038  8          4          5   4
58  1113483  5          3          6   1
59  1113906  9          5          2   1
60  1115282  5          5          3   1
61  1115293  1          1          2   1
62  1116116  9         10         10   1
63  1116132  6          4          5   1
64  1116192  1          1          2   1
65  1116998 10          2          3  10
66  1117152  4          1          2   1
67  1118039  5          4          8   1
68  1120559  8          8          4   8
69  1121732  1          1          2   1
70  1121919  5          3          2   1
71  1123061  6          2         10  10
72  1124651  1          3          2   1
73  1125035  9          5          6   1
74  1126417 10          4          3   3
75  1131294  1          2          2   1
76  1132347  1          4          2   1
77  1133041  5          1          2   1
78  1133136  3          1          2   1
79  1136142  2          1          3   1
80  1137156  2          2          1   1
81  1143978  4          1          2   1
82  1143978  5          1          2   1
83  1147044  3          1          2   1
84  1147699  3          7          8   7
85  1147748  5          6         10  10
86  1148278  3          6          5   1
87  1148873  3          6          5   3
88  1152331  4          1          2   1
89  1155546  2          1          3   1
90  1156272  1          1          2   1
91  1156948  3          1          2   1
92  1157734  4          1          2   1
93  1158247  1          1          2   1
94  1160476  2          1          2   1
95  1164066  1          1          2   1
96  1165297  2          1          2   1
97  1165790  5          1          2   1
98  1165926  9          9         10  10
99  1166630  7          6          5   4
100 1166654 10          5         10   2
> subset2 <- df_bc[c(1:50),c(1,2,5,7)]
> subset2
        ID CT MA BN
```

```
1  1002945  5  5 10
2  1015425  3  1  2
3  1016277  6  1  4
4  1017023  4  3  1
5  1017122  8  8 10
6  1018099  1  1 10
7  1018561  2  1  1
8  1033078  2  1  1
9  1033078  4  1  1
10 1035283  1  1  1
11 1036172  2  1  1
12 1041801  5  3  3
13 1043999  1  1  3
14 1044572  8 10  9
15 1047630  7  4  1
16 1048672  4  1  1
17 1049815  4  1  1
18 1050670 10  6 10
19 1050718  6  1  1
20 1054590  7 10 10
21 1054593 10  3  7
22 1056784  3  1  1
23 1057013  8  1  ?
24 1059552  1  1  1
25 1065726  5  4  7
26 1066373  3  1  1
27 1066979  5  1  1
28 1067444  2  1  1
29 1070935  1  1  1
30 1070935  3  1  1
31 1071760  2  1  1
32 1072179 10  3  5
33 1074610  2  2  1
34 1075123  3  1  1
35 1079304  2  1  1
36 1080185 10  8  1
37 1081791  6  1  1
38 1084584  5  9 10
39 1091262  2  3  7
40 1096800  6  9  ?
41 1099510 10  1  3
42 1100524  6  2 10
43 1102573  5  6  1
44 1103608 10  4  1
45 1103722  1  1  1
46 1105257  3  4  9
47 1105524  1  1  1
48 1106095  4  3  1
49 1106829  7  2  8
50 1108370  9  1  3
> #transpose
> subset1 <- subset1[order(subset1$`CT`),]
> t(subset1)
                6      10      13      24      29      45      47      61
64      69
ID        1018099 1035283 1043999 1059552 1070935 1103722 1105524 1115293
1116192 1121732
CT              1       1       1       1       1       1       1       1
1       1
CellShape       1       1       1       1       3       1       1       1
1       1
ECellSize       2       1       2       2       2       2       2       2
2       2
Mit             1       1       1       1       1       2       1       1
1       1
               72      75      76      90      93      95       7       8
11      28
ID        1124651 1131294 1132347 1156272 1158247 1164066 1018561 1033078
1036172 1067444
```

```
CT              1       1       1       1       1       1       2       2
2       2
CellShape       3       2       4       1       1       1       2       1
1       1
ECellSize       2       2       2       2       2       2       2       2
2       2
Mit             1       1       1       1       1       1       1       5
1       1
                31      33      35      39      79      80      89      94
96       2
ID        1071760 1074610 1079304 1091262 1136142 1137156 1155546 1160476
1165297 1015425
CT              2       2       2       2       2       2       2       2
2       3
CellShape       1       1       1       3       1       2       1       1
1       1
ECellSize       2       2       2       6       3       1       3       2
2       2
Mit             1       1       1       1       1       1       1       1
1       1
                22      26      30      34      46      78      83      84
86      87
ID        1056784 1066373 1070935 1075123 1105257 1133136 1147044 1147699
1148278 1148873
CT              3       3       3       3       3       3       3       3
3       3
CellShape       1       1       1       2       7       1       1       7
6       6
ECellSize       2       1       1       2       4       2       2       8
5       5
Mit             1       1       1       1       1       1       1       7
1       3
                91      4       9       16      17      48      66      81
88      92
ID        1156948 1017023 1033078 1048672 1049815 1106095 1117152 1143978
1152331 1157734
CT              3       4       4       4       4       4       4       4
4       4
CellShape       1       1       1       1       1       1       1       1
1       1
ECellSize       2       2       2       2       2       2       2       2
2       2
Mit             1       1       1       1       1       1       1       1
1       1
                1       12      25      27      38      43      51      53
58      60
ID        1002945 1041801 1065726 1066979 1084584 1102573 1108449 1110503
1113483 1115282
CT              5       5       5       5       5       5       5       5
5       5
CellShape       4       3       3       1       4       5       3       5
3       5
ECellSize       7       2       2       2       2      10       2      10
6       3
Mit             1       1       1       1       1       1       1       7
1       1
                67      70      77      82      85      97       3      19
37      40
ID        1118039 1121919 1133041 1143978 1147748 1165790 1016277 1050718
1081791 1096800
CT              5       5       5       5       5       5       6       6
6       6
CellShape       4       3       1       1       6       1       8       1
1       6
ECellSize       8       2       2       2      10       2       3       2
1       6
Mit             1       1       1       1      10       1       1       1
1       1
```

```
                42      63      71      15      20      49      99       5
14      23
ID         1100524 1116132 1123061 1047630 1054590 1106829 1166630 1017122
1044572 1057013
CT               6       6       6       7       7       7       7       8
8       8
CellShape       10       4       2       6       2       7       6      10
5       5
ECellSize        8       5      10       6       5       4       5       7
7       2
Mit              3       1      10       1       4       2       4       1
4       1
                56      57      68      50      59      62      73      98
18      21
ID         1112209 1113038 1120559 1108370 1113906 1116116 1125035 1165926
1050670 1054593
CT               8       8       8       9       9       9       9       9
10      10
CellShape       10       4       8       8       5      10       5       9
7       5
ECellSize        3       5       4       2       2      10       6      10
4       6
Mit              1       4       8       5       1       1       1      10
2       1
                32      36      41      44      52      54      55      65
74     100
ID         1072179 1080185 1099510 1103608 1110102 1110524 1111249 1116998
1126417 1166654
CT              10      10      10      10      10      10      10      10
10      10
CellShape        7      10       3      10       6       5       6       2
4       5
ECellSize        8       6       3       8       3       8       4       3
3      10
Mit              3       1       2       1       2       1       1      10
3       2
> library(reshape2)
> #melting
> subset2 <- df_bc[c(10:20),c(1,2,5,7)]
> melt1 <- melt(subset2, id <- c("ID","MA"))
Warning message:
attributes are not identical across measure variables; they will be droppe
d
> melt1
         ID MA variable value
1   1035283  1       CT     1
2   1036172  1       CT     2
3   1041801  3       CT     5
4   1043999  1       CT     1
5   1044572 10       CT     8
6   1047630  4       CT     7
7   1048672  1       CT     4
8   1049815  1       CT     4
9   1050670  6       CT    10
10  1050718  1       CT     6
11  1054590 10       CT     7
12  1035283  1       BN     1
13  1036172  1       BN     1
14  1041801  3       BN     3
15  1043999  1       BN     3
16  1044572 10       BN     9
17  1047630  4       BN     1
18  1048672  1       BN     1
19  1049815  1       BN     1
20  1050670  6       BN    10
21  1050718  1       BN     1
22  1054590 10       BN    10
> melt1 <- melt1[order(melt1$`ID`,melt1$`MA`),]
> melt1
```

```
        ID MA variable value
1  1035283  1       CT     1
12 1035283  1       BN     1
2  1036172  1       CT     2
13 1036172  1       BN     1
3  1041801  3       CT     5
14 1041801  3       BN     3
4  1043999  1       CT     1
15 1043999  1       BN     3
5  1044572 10       CT     8
16 1044572 10       BN     9
6  1047630  4       CT     7
17 1047630  4       BN     1
7  1048672  1       CT     4
18 1048672  1       BN     1
8  1049815  1       CT     4
19 1049815  1       BN     1
9  1050670  6       CT    10
20 1050670  6       BN    10
10 1050718  1       CT     6
21 1050718  1       BN     1
11 1054590 10       CT     7
22 1054590 10       BN    10
> #casting molten data
> cast1 <- dcast(melt1,`ID` + `MA`~ variable,value.var = "value")
> cast1
        ID MA CT BN
1  1035283  1  1  1
2  1036172  1  2  1
3  1041801  3  5  3
4  1043999  1  1  3
5  1044572 10  8  9
6  1047630  4  7  1
7  1048672  1  4  1
8  1049815  1  4  1
9  1050670  6 10 10
10 1050718  1  6  1
11 1054590 10  7 10
```