

```

> source("budget_by_factors.r",echo=T)

> budget.CB.by.grade.summary<-by(budget[,c("CB08","CB09","CB10","CB.total")],results.7$grade,summary)

> print(budget.CB.by.grade.summary)
results.7$grade: A
      CB08      CB09      CB10      CB.total
Min.   : 25.0  Min.   : 60.0  Min.   :  0.0  Min.   : 125.0
1st Qu.:112.0 1st Qu.:190.0 1st Qu.:167.0 1st Qu.: 517.3
Median :174.0 Median :255.0 Median :283.0 Median : 788.0
Mean   :174.9 Mean   :277.0 Mean   :303.8 Mean   : 755.7
3rd Qu.:241.0 3rd Qu.:331.0 3rd Qu.:418.0 3rd Qu.:1008.0
Max.   :487.0 Max.   :548.0 Max.   :744.0 Max.   :1479.0
-----
results.7$grade: B
      CB08      CB09      CB10      CB.total
Min.   : 38.8  Min.   :112.0  Min.   : 48.0  Min.   :403.0
1st Qu.:122.1 1st Qu.:260.4 1st Qu.:211.9 1st Qu.: 638.6
Median :214.5 Median :304.5 Median :258.5 Median : 796.5
Mean   :270.0 Mean   :499.5 Mean   :432.5 Mean :1202.0
3rd Qu.:326.0 3rd Qu.:508.2 3rd Qu.:394.7 3rd Qu.:1278.4
Max.   :1323.0 Max.   :3432.0 Max.   :2525.0 Max.   :7280.0
-----
results.7$grade: C
      CB08      CB09      CB10      CB.total
Min.   :  0.0  Min.   :  0.0  Min.   :  0.0  Min.   : 38.0
1st Qu.: 49.5 1st Qu.:110.1 1st Qu.: 82.5 1st Qu.: 338.1
Median :103.0 Median :200.0 Median :187.0 Median : 474.0
Mean   :160.7 Mean   :275.6 Mean   :301.2 Mean : 737.5
3rd Qu.:221.5 3rd Qu.:325.5 3rd Qu.:288.8 3rd Qu.: 819.5
Max.   :990.0 Max.   :1607.8 Max.   :2496.0 Max.   :3993.6

> budget.CB.by.grade.tmean<-by(budget[,c("CB08","CB09","CB10","CB.total")],results.7$grade,mean, trim=5)

> print(budget.CB.by.grade.tmean)
results.7$grade: A
      CB08      CB09      CB10 CB.total
174.0    258.5    283.0    788.0
-----
results.7$grade: B
      CB08      CB09      CB10 CB.total
214.5    304.5    258.5    796.5
-----
results.7$grade: C
      CB08      CB09      CB10 CB.total
103      200      187      474

> budget.PP.by.grade.summary<-by(budget[,c("PP08","PP09","PP10","PP.total")],results.7$grade,summary)

> print(budget.PP.by.grade.summary)
results.7$grade: A
      PP08      PP09      PP10      PP.total
Min.   :  0.0  Min.   :  0.0  Min.   :  0.0  Min.   :  0
1st Qu.:230.0 1st Qu.:555.0 1st Qu.: 250.0 1st Qu.:1086
Median :424.0 Median :1129.5 Median :482.0 Median :1986
Mean   :485.7 Mean   :875.3 Mean   :712.1 Mean :2073
3rd Qu.:789.0 3rd Qu.:1256.0 3rd Qu.:1050.0 3rd Qu.:3083
Max.   :1008.0 Max.   :1452.0 Max.   :1705.0 Max.   :4050
-----
results.7$grade: B
      PP08      PP09      PP10      PP.total
Min.   :  0.0  Min.   :  0.0  Min.   :  0.0  Min.   :  0.0
1st Qu.:  0.0 1st Qu.: 25.0 1st Qu.: 22.0 1st Qu.:201.4
Median :190.8 Median :386.0 Median :421.9 Median :1006.4
Mean   :434.4 Mean   :649.5 Mean   :603.5 Mean :1747.4
3rd Qu.:626.4 3rd Qu.:1200.0 3rd Qu.:1167.3 3rd Qu.:3214.4
Max.   :1639.0 Max.   :2113.0 Max.   :2375.0 Max.   :5813.0
-----
results.7$grade: C
      PP08      PP09      PP10      PP.total
Min.   :  0.0  Min.   :  0.0  Min.   :  0.0  Min.   :  0.0
1st Qu.:  8.5 1st Qu.:  0.0 1st Qu.:117.7 1st Qu.: 456.7
Median :147.0 Median :403.0 Median :430.0 Median :1188.0
Mean   :259.1 Mean   :473.3 Mean   :585.2 Mean :1317.7
3rd Qu.:409.5 3rd Qu.:604.5 3rd Qu.:653.5 3rd Qu.:1778.5
Max.   :1624.0 Max.   :2240.0 Max.   :4065.0 Max.   :5516.0

> budget.PP.by.grade.tmean<-by(budget[,c("PP08","PP09","PP10","PP.total")],results.7$grade,mean, trim=5)

> print(budget.PP.by.grade.tmean)
results.7$grade: A
      PP08      PP09      PP10 PP.total
424.0    1129.5    482.0    1986.3
-----
results.7$grade: B
      PP08      PP09      PP10 PP.total
190.8    386.0    421.9    1006.4
-----
results.7$grade: C
      PP08      PP09      PP10 PP.total
147      403      439      1188

> budget.PM.by.grade.summary<-by(budget[,c("PM08","PM09","PM10","PM.total")],results.7$grade,summary)

> print(budget.PM.by.grade.summary)
results.7$grade: A
      PM08      PM09      PM10      PM.total
Min.   :  0.0  Min.   : 599  Min.   :280.0  Min.   :1115
1st Qu.:227.0 1st Qu.:646 1st Qu.:686.7 1st Qu.:1926
Median :542.6 Median :901  Median :865.0 Median :2270
Mean   :607.8 Mean :1010  Mean :908.0 Mean :2526
3rd Qu.:788.4 3rd Qu.:1299 3rd Qu.:1209.0 3rd Qu.:3308
Max.   :1477.0 Max.   :1999  Max.   :1528.0 Max.   :4000
-----
results.7$grade: B
      PM08      PM09      PM10      PM.total
Min.   :  0.0  Min.   :  0.0  Min.   :  0.0  Min.   :  0
1st Qu.:182.2 1st Qu.:376.0 1st Qu.:383.5 1st Qu.:1160
Median :329.0 Median :675.1 Median :652.1 Median :1750
Mean   :383.5 Mean   :815.5 Mean   :747.9 Mean :1945
3rd Qu.:616.0 3rd Qu.:1163.2 3rd Qu.:1075.0 3rd Qu.:2872
Max.   :914.0 Max.   :2006.9 Max.   :1629.0 Max.   :4199
-----
results.7$grade: C
      PM08      PM09      PM10      PM.total
Min.   :  0.0  Min.   :  0.0  Min.   :  0.0  Min.   :121.0
1st Qu.: 86.5 1st Qu.:213.2 1st Qu.:331.0 1st Qu.: 995.8
Median :287.0 Median :695.0 Median :749.0 Median :2018.0
Mean   :370.2 Mean :871.2 Mean :804.5 Mean :2045.8
3rd Qu.:502.8 3rd Qu.:1112.0 3rd Qu.:1157.0 3rd Qu.:2606.2
Max.   :1109.0 Max.   :3048.0 Max.   :1003.0 Max.   :6011.0

> budget.PM.by.grade.tmean<-by(budget[,c("PM08","PM09","PM10","PM.total")],results.7$grade,mean, trim=5)

> print(budget.PM.by.grade.tmean)
results.7$grade: A
      PM08      PM09      PM10 PM.total
542.6    901.0    865.0    2270.0
-----
results.7$grade: B
      PM08      PM09      PM10 PM.total
329.0    675.1    652.1    1749.8
-----
results.7$grade: C
      PM08      PM09      PM10 PM.total
287      695      749      2018

> budget.RD.by.grade.summary<-by(budget[,c("RD08","RD09","RD10","RD.total")],results.7$grade,summary)

> print(budget.RD.by.grade.summary)
results.7$grade: A
      RD08      RD09      RD10      RD.total
Min.   :  0.00  Min.   :  0.0  Min.   :  0.0  Min.   :  0.0
1st Qu.:  0.00 1st Qu.:  0.0 1st Qu.:  0.0 1st Qu.:  45.0
Median : 50.00 Median :100.0 Median :100.0 Median :400.0
Mean   :87.53 Mean :206.4 Mean :180.9 Mean :474.8
3rd Qu.:137.00 3rd Qu.:303.0 3rd Qu.:304.0 3rd Qu.:631.0
Max.   :362.00 Max.   :1283.0 Max.   :708.0 Max.   :1846.0
-----
results.7$grade: B
      RD08      RD09      RD10      RD.total
Min.   :  0.00  Min.   :  0.00  Min.   :  0.00  Min.   :  0.0
1st Qu.:  0.00 1st Qu.:  0.00 1st Qu.:  0.00 1st Qu.:  0.0
Median :  0.00 Median :30.00 Median :  5.00 Median :40.5
Mean   :62.33 Mean :95.86 Mean :100.05 Mean :258.2
3rd Qu.:115.88 3rd Qu.:136.00 3rd Qu.: 56.25 3rd Qu.:359.8
Max.   :272.50 Max.   :578.00 Max.   :1533.00 Max.   :2127.0
-----
results.7$grade: C

```

```

RD08      RD09      RD10      RD.total
Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.0
1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0
Median : 0.00 Median : 0.00 Median : 0.00 Median : 55.0
Mean : 40.28 Mean : 85.11 Mean : 98.52 Mean : 223.9
3rd Qu.: 7.00 3rd Qu.:161.15 3rd Qu.:200.00 3rd Qu.: 489.5
Max. :463.00 Max. :569.00 Max. :549.00 Max. :1374.0

> budget.RD.by.grade.tmean<-by(budget[,c("RD08","RD09","RD10","RD.total")],results.7$grade,mean, trim=5)

> print(budget.RD.by.grade.tmean)
results.7$grade: A
      RD08      RD09      RD10 RD.total
50         100         100        400
-----
results.7$grade: B
      RD08      RD09      RD10 RD.total
0.0         30.0         5.0        40.5
-----
results.7$grade: C
      RD08      RD09      RD10 RD.total
0           0           0         55
-----

> budget.CT.by.grade.summary<-by(budget[,c("CT08","CT09","CT10","CT.total")],results.7$grade,summary)

> print(budget.CT.by.grade.summary)
results.7$grade: A
      CT08      CT09      CT10      CT.total
Min. : 0.0 Min. : 0.0 Min. : 0 Min. : 0.0
1st Qu.: 0.0 1st Qu.: 70.0 1st Qu.: 100 1st Qu.: 300.0
Median : 76.0 Median :210.0 Median : 152 Median : 563.0
Mean : 207.9 Mean : 310.5 Mean : 249 Mean : 767.4
3rd Qu.:314.0 3rd Qu.:500.0 3rd Qu.: 297 3rd Qu.:1150.0
Max. :919.0 Max. :826.0 Max. :1073 Max. :2757.3
-----
results.7$grade: B
      CT08      CT09      CT10      CT.total
Min. : 0.0 Min. : 0.0 Min. : 0.00 Min. : 0.0
1st Qu.: 37.5 1st Qu.: 248.2 1st Qu.: 89.67 1st Qu.: 668.9
Median : 313.9 Median : 648.0 Median : 400.00 Median :1276.9
Mean : 402.0 Mean : 797.8 Mean : 558.09 Mean :1757.8
3rd Qu.: 640.5 3rd Qu.:1161.2 3rd Qu.: 878.25 3rd Qu.:2632.7
Max. :1378.0 Max. :2831.0 Max. :2041.00 Max. :4622.0
-----
results.7$grade: C
      CT08      CT09      CT10      CT.total
Min. : 0.0 Min. : 0.0 Min. : 0.0 Min. : 0.0
1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 33.5 1st Qu.: 109.5
Median : 86.0 Median : 110.0 Median : 270.0 Median : 637.0
Mean : 157.8 Mean : 344.2 Mean : 479.6 Mean : 981.6
3rd Qu.:243.0 3rd Qu.: 657.5 3rd Qu.: 580.0 3rd Qu.:1453.0
Max. :650.0 Max. :1485.0 Max. :3244.0 Max. :4770.0
-----

> budget.CT.by.grade.tmean<-by(budget[,c("CT08","CT09","CT10","CT.total")],results.7$grade,mean, trim=5)

> print(budget.CT.by.grade.tmean)
results.7$grade: A
      CT08      CT09      CT10 CT.total
76         210         152        563
-----
results.7$grade: B
      CT08      CT09      CT10 CT.total
313.95     648.00     400.00    1276.90
-----
results.7$grade: C
      CT08      CT09      CT10 CT.total
86         110         270        637
-----

> budget.CB.by.Region.summary<-by(budget[,c("CB08","CB09","CB10","CB.total")],results.7$Region,summary)

> print(budget.CB.by.Region.summary)
results.7$Region: 강남
      CB08      CB09      CB10      CB.total
Min. : 0.0 Min. : 0.0 Min. : 0.0 Min. : 38.0
1st Qu.: 86.0 1st Qu.:196.0 1st Qu.:134.0 1st Qu.: 411.0
Median :159.6 Median :260.0 Median :208.0 Median : 604.5
Mean :171.8 Mean :267.1 Mean :218.5 Mean : 657.4
3rd Qu.:214.0 3rd Qu.:280.0 3rd Qu.:247.0 3rd Qu.: 772.0
Max. :487.0 Max. :746.0 Max. :679.0 Max. :1749.0
-----
results.7$Region: 중부
      CB08      CB09      CB10      CB.total
Min. : 8.7 Min. : 60.0 Min. : 37.0 Min. :152.0
1st Qu.: 78.0 1st Qu.: 200.0 1st Qu.: 203.0 1st Qu.: 535.3
Median : 215.0 Median : 305.0 Median : 268.0 Median : 864.8
Mean : 236.2 Mean : 484.9 Mean : 352.4 Mean :1073.5
3rd Qu.: 298.0 3rd Qu.: 400.0 3rd Qu.: 352.0 3rd Qu.:1120.0
Max. :1323.0 Max. :3432.0 Max. :2525.0 Max. :7280.0
-----
results.7$Region: 호남
      CB08      CB09      CB10      CB.total
Min. : 25.0 Min. : 0.0 Min. : 0.0 Min. : 125.0
1st Qu.: 42.0 1st Qu.: 99.0 1st Qu.: 160.8 1st Qu.: 342.7
Median :120.0 Median :207.0 Median : 267.0 Median : 710.1
Mean :182.6 Mean :271.3 Mean : 442.4 Mean : 806.3
3rd Qu.:224.0 3rd Qu.:345.5 3rd Qu.: 477.5 3rd Qu.:1299.2
Max. :990.0 Max. :961.0 Max. :2496.0 Max. :3393.6
-----

> budget.CB.by.Region.tmean<-by(budget[,c("CB08","CB09","CB10","CB.total")],results.7$Region,mean, trim=5)

> print(budget.CB.by.Region.tmean)
results.7$Region: 강남
      CB08      CB09      CB10 CB.total
159.6     260.0     208.0     604.5
-----
results.7$Region: 중부
      CB08      CB09      CB10 CB.total
215.0     305.0     268.0     864.8
-----
results.7$Region: 호남
      CB08      CB09      CB10 CB.total
120.00    207.00    267.00    710.15
-----

> budget.PP.by.Region.summary<-by(budget[,c("PP08","PP09","PP10","PP.total")],results.7$Region,summary)

> print(budget.PP.by.Region.summary)
results.7$Region: 강남
      PP08      PP09      PP10      PP.total
Min. : 0.0 Min. : 0.0 Min. : 0.0 Min. : 0
1st Qu.: 82.0 1st Qu.: 346.0 1st Qu.: 271.0 1st Qu.: 700
Median : 280.0 Median : 730.0 Median : 640.0 Median :1620
Mean : 434.9 Mean : 819.3 Mean : 761.3 Mean :2015
3rd Qu.: 652.6 3rd Qu.:1209.5 3rd Qu.:1050.0 3rd Qu.:3153
Max. :1534.0 Max. :2240.0 Max. :2316.0 Max. :4697
-----
results.7$Region: 중부
      PP08      PP09      PP10      PP.total
Min. : 0.0 Min. : 0.0 Min. : 0.0 Min. : 0.0
1st Qu.: 53.0 1st Qu.: 142.0 1st Qu.: 0.0 1st Qu.: 474.4
Median : 222.0 Median : 380.0 Median : 375.8 Median :1085.9
Mean : 382.8 Mean : 505.3 Mean : 652.6 Mean :1460.6
3rd Qu.: 527.0 3rd Qu.: 633.7 3rd Qu.: 605.0 3rd Qu.:1739.0
Max. :1325.0 Max. :2113.0 Max. :4065.0 Max. :5813.0
-----
results.7$Region: 호남
      PP08      PP09      PP10      PP.total
Min. : 0.0 Min. : 0.0 Min. : 0.0 Min. : 0.0
1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 66.0 1st Qu.: 417.5
Median :148.5 Median : 429.6 Median : 433.0 Median : 943.9
Mean : 381.0 Mean : 583.5 Mean : 522.7 Mean :1487.2
3rd Qu.: 629.0 3rd Qu.:1195.2 3rd Qu.:1002.0 3rd Qu.:2761.8
Max. :1639.0 Max. :1618.0 Max. :1407.0 Max. :4047.7
-----

> budget.PP.by.Region.tmean<-by(budget[,c("PP08","PP09","PP10","PP.total")],results.7$Region,mean, trim=5)

> print(budget.PP.by.Region.tmean)
results.7$Region: 강남
      PP08      PP09      PP10 PP.total
280         730         640       1620
-----
results.7$Region: 중부
      PP08      PP09      PP10 PP.total
222.0     380.0     375.8    1085.9
-----
results.7$Region: 호남
      PP08      PP09      PP10 PP.total
148.50    429.55    433.00    943.85
-----

> budget.PM.by.Region.summary<-by(budget[,c("PM08","PM09","PM10","PM.total")],results.7$Region,summary)

```

```

> print(budget.PM.by.Region.summary)
results.75Region: 평남
      PM08      PM09      PM10      PM.total
Min.   : 0.0   Min.   : 0.0   Min.   : 0.0   Min.   : 328.
1st Qu.: 252.0 1st Qu.: 530.0 1st Qu.: 328.0 1st Qu.:1479.
Median : 392.6  Median : 792.0  Median : 711.0  Median :2043.
Mean   : 438.9  Mean   : 976.0  Mean   : 784.2  Mean   :2199.
3rd Qu.: 612.6 3rd Qu.:1358.0 3rd Qu.:1084.0 3rd Qu.:2965.
Max.   :1044.0  Max.   :2728.0  Max.   :1983.0  Max.   :4913.
-----
results.75Region: 중부
      PM08      PM09      PM10      PM.total
Min.   : 0.0   Min.   : 0.0   Min.   : 0.0   Min.   : 0.
1st Qu.: 112.0 1st Qu.: 372.0 1st Qu.: 470.0 1st Qu.:1147.
Median : 306.0  Median : 695.0  Median : 745.9  Median :1793.
Mean   : 427.4  Mean   : 710.1  Mean   : 735.7  Mean   :1883.
3rd Qu.: 746.0 3rd Qu.: 979.0 3rd Qu.:1000.8 3rd Qu.:2332.
Max.   :1109.0  Max.   :2149.0  Max.   :1659.0  Max.   :4588.
-----
results.75Region: 호남
      PM08      PM09      PM10      PM.total
Min.   : 0.0   Min.   : 0.0   Min.   : 0.0   Min.   : 121.
1st Qu.: 165.0 1st Qu.: 594.6 1st Qu.: 455.5 1st Qu.:1106.
Median : 274.0  Median : 829.0  Median : 966.0  Median :2240.
Mean   : 418.8  Mean   : 994.7  Mean   : 915.3  Mean   :2329.
3rd Qu.: 591.3 3rd Qu.:1318.5 3rd Qu.:1263.5 3rd Qu.:3214.
Max.   :1477.0  Max.   :3948.0  Max.   :1846.0  Max.   :6811.
-----
> budget.PM.by.Region.tmean<-by(budget[,c("PM08","PM09","PM10","PM.total")],results.75Region,mean,trim=5)
> print(budget.PM.by.Region.tmean)
results.75Region: 평남
      PM08      PM09      PM10      PM.total
392.6      792.0      711.0      2042.7
-----
results.75Region: 중부
      PM08      PM09      PM10      PM.total
306.0      695.0      745.9      1793.0
-----
results.75Region: 호남
      PM08      PM09      PM10      PM.total
274.00     829.00     966.00     2239.85
-----
> budget.CT.by.Region.summary<-by(budget[,c("CT08","CT09","CT10","CT.total")],results.75Region,summary)
> print(budget.CT.by.Region.summary)
results.75Region: 평남
      CT08      CT09      CT10      CT.total
Min.   : 0.0   Min.   : 0.0   Min.   : 0.0   Min.   : 0.0
1st Qu.: 21.0   1st Qu.: 44.0   1st Qu.: 82.0   1st Qu.: 212.0
Median :240.0   Median : 250.0   Median : 270.0   Median : 914.3
Mean   :258.3   Mean   : 436.3   Mean   : 533.0   Mean   :1227.6
3rd Qu.:450.0   3rd Qu.: 450.0   3rd Qu.: 549.5   3rd Qu.:1350.0
Max.   :740.0   Max.   :2831.0   Max.   :3244.0   Max.   :4770.0
-----
results.75Region: 중부
      CT08      CT09      CT10      CT.total
Min.   : 0.0   Min.   : 0.0   Min.   : 0.0   Min.   : 0.0
1st Qu.: 0.0   1st Qu.: 30.0   1st Qu.: 0.0   1st Qu.: 30.0
Median : 108.0  Median : 237.6  Median : 226.7  Median : 627.9
Mean   : 252.1  Mean   : 465.8  Mean   : 397.9  Mean   :1115.8
3rd Qu.: 378.0 3rd Qu.: 705.0 3rd Qu.: 571.0 3rd Qu.:1773.0
Max.   :1190.0  Max.   :2441.0  Max.   :2041.0  Max.   :4524.0
-----
results.75Region: 호남
      CT08      CT09      CT10      CT.total
Min.   : 0.0   Min.   : 0.0   Min.   : 0.0   Min.   : 0.
1st Qu.: 0.0   1st Qu.: 0.0   1st Qu.: 133.8   1st Qu.: 330.
Median : 121.5  Median : 466.5  Median : 304.0  Median :1065.
Mean   : 231.0  Mean   : 528.8  Mean   : 426.6  Mean   :1186.
3rd Qu.: 282.5 3rd Qu.: 847.9 3rd Qu.: 604.5 3rd Qu.:2024.
Max.   :1378.0  Max.   :1720.0  Max.   :1582.0  Max.   :2987.
-----
> budget.CT.by.Region.tmean<-by(budget[,c("CT08","CT09","CT10","CT.total")],results.75Region,mean,trim=5)
> print(budget.CT.by.Region.tmean)
results.75Region: 평남
      CT08      CT09      CT10      CT.total
240.0      250.0      270.0      914.3
-----
results.75Region: 중부
      CT08      CT09      CT10      CT.total
108.0      237.6      226.7      627.9
-----
results.75Region: 호남
      CT08      CT09      CT10      CT.total
121.5      466.5      304.0      1065.0
-----
> budget.CB.by.class.summary<-by(budget[,c("CB08","CB09","CB10","CB.total")],results.75class,summary)
> print(budget.CB.by.class.summary)
results.75class: Better
      CB08      CB09      CB10      CB.total
Min.   : 0.0   Min.   : 0.0   Min.   : 0.0   Min.   : 38.0
1st Qu.: 56.0   1st Qu.: 146.0   1st Qu.:134.0   1st Qu.: 408.6
Median :156.5   Median : 225.1   Median :201.0   Median : 578.1
Mean   :171.3   Mean   : 278.0   Mean   :215.2   Mean   : 664.5
3rd Qu.:241.0   3rd Qu.: 322.0   3rd Qu.:286.7   3rd Qu.: 851.0
Max.   :487.0   Max.   :1607.8   Max.   :518.0   Max.   :1722.8
-----
results.75class: Middle
      CB08      CB09      CB10      CB.total
Min.   : 25.00  Min.   :100.0  Min.   : 0.0   Min.   : 125.0
1st Qu.: 71.75 1st Qu.:258.9 1st Qu.:207.3 1st Qu.: 508.5
Median :145.80 Median :317.0  Median :247.0  Median : 780.0
Mean   :151.80 Mean   :342.9  Mean   :310.5  Mean   : 805.3
3rd Qu.:235.50 3rd Qu.:405.2 3rd Qu.:361.0 3rd Qu.:1045.8
Max.   :308.00  Max.   :690.0  Max.   :906.0  Max.   :1536.3
-----
results.75class: Under
      CB08      CB09      CB10      CB.total
Min.   : 30.0   Min.   : 0.0   Min.   : 40.1   Min.   : 145.1
1st Qu.: 109.0 1st Qu.: 170.0 1st Qu.: 200.5 1st Qu.: 466.6
Median : 159.6  Median : 260.0  Median : 295.0  Median : 736.0
Mean   : 290.1  Mean   : 468.0  Mean   : 596.1  Mean   :1354.3
3rd Qu.: 295.6 3rd Qu.: 461.0 3rd Qu.: 676.5 3rd Qu.:1331.5
Max.   :1323.0  Max.   :3432.0  Max.   :2525.0  Max.   :7280.0
-----
> budget.CB.by.class.tmean<-by(budget[,c("CB08","CB09","CB10","CB.total")],results.75class,mean,trim=5)
> print(budget.CB.by.class.tmean)
results.75class: Better
      CB08      CB09      CB10      CB.total
156.5      225.1      201.0      578.1
-----
results.75class: Middle
      CB08      CB09      CB10      CB.total
145.8      317.0      247.0      780.0
-----
results.75class: Under
      CB08      CB09      CB10      CB.total
159.6      260.0      295.0      736.0
-----
> budget.PP.by.class.summary<-by(budget[,c("PP08","PP09","PP10","PP.total")],results.75class,summary)
> print(budget.PP.by.class.summary)
results.75class: Better
      PP08      PP09      PP10      PP.total
Min.   : 0.0   Min.   : 0.0   Min.   : 0.0   Min.   : 0.
1st Qu.: 12.0   1st Qu.: 9.0   1st Qu.: 139.0 1st Qu.: 427.
Median : 200.0  Median : 380.0  Median : 427.0  Median :1123.
Mean   : 306.8  Mean   : 494.1  Mean   : 492.2  Mean   :1283.
3rd Qu.: 544.0 3rd Qu.: 681.0 3rd Qu.: 605.0 3rd Qu.:2008.
Max.   :1624.0  Max.   :1618.0  Max.   :2062.0  Max.   :3639.
-----
results.75class: Middle
      PP08      PP09      PP10      PP.total
Min.   : 0.0   Min.   : 0.0   Min.   : 0.0   Min.   : 0.
1st Qu.: 57.0   1st Qu.: 347.5 1st Qu.: 119.5 1st Qu.: 696.
Median : 214.5  Median : 567.5  Median : 384.4  Median :1363.
Mean   : 326.5  Mean   : 754.5  Mean   : 639.8  Mean   :1721.
3rd Qu.: 461.0 3rd Qu.:1158.4 3rd Qu.: 835.2 3rd Qu.:2538.
Max.   :1520.0  Max.   :2240.0  Max.   :4065.0  Max.   :5516.
-----
results.75class: Under
      PP08      PP09      PP10      PP.total
Min.   : 0.0   Min.   : 0.0   Min.   : 0.0   Min.   : 0.
1st Qu.: 19.0   1st Qu.: 50.0   1st Qu.: 186.3 1st Qu.: 622.

```

```

Median : 190.0   Median : 810.0   Median : 807.8   Median :1620
Mean : 518.2   Mean : 751.9   Mean : 899.1   Mean :2169
3rd Qu.: 934.0   3rd Qu.:1238.0   3rd Qu.:1338.5   3rd Qu.:3742
Max. :1639.0   Max. :2113.0   Max. :2375.0   Max. :5813

> budget.PP.by.class.tmean<-by(budget[,c("PP08","PP09","PP10","PP.total")],results.7$class,mean,trim=5)
> print(budget.PP.by.class.tmean)
results.7$class: Better
      PP08   PP09   PP10 PP.total
      200    380    427   1123
-----
results.7$class: Middle
      PP08   PP09   PP10 PP.total
      214.50 567.50 384.45 1363.30
-----
results.7$class: Under
      PP08   PP09   PP10 PP.total
      190.0   810.0   807.8 1620.0

> budget.PM.by.class.summary<-by(budget[,c("PM08","PM09","PM10","PM.total")],results.7$class,summary)
> print(budget.PM.by.class.summary)
results.7$class: Better
      PM08   PM09   PM10   PM.total
Min. : 0.0   Min. : 0.0   Min. : 0   Min. : 226
1st Qu.: 171.0 1st Qu.: 430.0 1st Qu.: 397   1st Qu.:1081
Median : 287.0  Median : 705.0  Median : 794   Median :2818
Mean : 406.1   Mean : 880.6   Mean : 786   Mean :2073
3rd Qu.: 634.8 3rd Qu.:1110.0 3rd Qu.:1045   3rd Qu.:2590
Max. :1109.0   Max. :3948.0   Max. :1846   Max. :6011
-----
results.7$class: Middle
      PM08   PM09   PM10   PM.total
Min. : 0.0   Min. : 0.0   Min. : 0.0   Min. : 363
1st Qu.: 213.8 1st Qu.: 599.5 1st Qu.: 515.8 1st Qu.:1548
Median : 396.9  Median : 760.5  Median : 765.6  Median :1984
Mean : 487.1   Mean : 900.2   Mean : 843.0   Mean :2230
3rd Qu.: 698.8 3rd Qu.:1129.2 3rd Qu.:1088.7 3rd Qu.:2978
Max. :1175.0   Max. :2006.9   Max. :1825.0   Max. :4199
-----
results.7$class: Under
      PM08   PM09   PM10   PM.total
Min. : 0.0   Min. : 0.0   Min. : 0.0   Min. : 0
1st Qu.: 141.0 1st Qu.: 245.0 1st Qu.: 346.0 1st Qu.:1158
Median : 322.0  Median : 792.0  Median : 697.2  Median :2144
Mean : 422.9   Mean : 887.3   Mean : 827.1   Mean :2137
3rd Qu.: 649.0 3rd Qu.:1338.0 3rd Qu.:1314.0 3rd Qu.:3214
Max. :1477.0   Max. :2758.0   Max. :1903.0   Max. :4913

> budget.PM.by.class.tmean<-by(budget[,c("PM08","PM09","PM10","PM.total")],results.7$class,mean,trim=5)
> print(budget.PM.by.class.tmean)
results.7$class: Better
      PM08   PM09   PM10 PM.total
      287    705    794   2018
-----
results.7$class: Middle
      PM08   PM09   PM10 PM.total
      396.90 760.50 765.60 1984.35
-----
results.7$class: Under
      PM08   PM09   PM10 PM.total
      322.0   792.0   697.2 2143.7

> budget.RD.by.class.summary<-by(budget[,c("RD08","RD09","RD10","RD.total")],results.7$class,summary)
> print(budget.RD.by.class.summary)
results.7$class: Better
      RD08   RD09   RD10   RD.total
Min. : 0.00   Min. : 0.0   Min. : 0.0   Min. : 0.0
1st Qu.: 0.00   1st Qu.: 0.0   1st Qu.: 0.0   1st Qu.: 0.0
Median : 0.00   Median : 30.0   Median : 20.0   Median : 55.0
Mean : 61.19   Mean :109.7   Mean :107.8   Mean : 278.7
3rd Qu.: 50.00   3rd Qu.:205.0   3rd Qu.:128.0   3rd Qu.: 450.0
Max. :463.00   Max. :569.0   Max. :708.0   Max. :1374.0
-----
results.7$class: Middle
      RD08   RD09   RD10   RD.total
Min. : 0.00   Min. : 0.00   Min. : 0.0   Min. : 0.0
1st Qu.: 0.00   1st Qu.: 0.00   1st Qu.: 0.0   1st Qu.: 0.0
Median : 0.00   Median : 0.00   Median : 13.5   Median : 61.5
Mean : 57.71   Mean : 73.33   Mean : 52.6   Mean :183.6
3rd Qu.:112.35 3rd Qu.:127.00 3rd Qu.: 73.1   3rd Qu.:347.2
Max. :250.00   Max. :403.00   Max. :269.0   Max. :823.0
-----
results.7$class: Under
      RD08   RD09   RD10   RD.total
Min. : 0.00   Min. : 0.0   Min. : 0.0   Min. : 0.0
1st Qu.: 0.00   1st Qu.: 0.0   1st Qu.: 0.0   1st Qu.: 0.0
Median : 0.00   Median : 0.0   Median : 66.0   Median : 220.5
Mean : 55.26   Mean : 174.5   Mean : 201.3   Mean : 431.0
3rd Qu.: 89.25 3rd Qu.: 185.5 3rd Qu.: 300.0 3rd Qu.: 511.5
Max. :280.00   Max. :1283.0   Max. :1533.0   Max. :2127.0

> budget.RD.by.class.tmean<-by(budget[,c("RD08","RD09","RD10","RD.total")],results.7$class,mean,trim=5)
> print(budget.RD.by.class.tmean)
results.7$class: Better
      RD08   RD09   RD10 RD.total
      0      30      20    55
-----
results.7$class: Middle
      RD08   RD09   RD10 RD.total
      0.0     0.0    13.5   61.5
-----
results.7$class: Under
      RD08   RD09   RD10 RD.total
      0.0     0.0    66.0   220.5

> budget.CT.by.class.summary<-by(budget[,c("CT08","CT09","CT10","CT.total")],results.7$class,summary)
> print(budget.CT.by.class.summary)
results.7$class: Better
      CT08   CT09   CT10   CT.total
Min. : 0.0   Min. : 0.0   Min. : 0.0   Min. : 0.0
1st Qu.: 0.0   1st Qu.: 0.0   1st Qu.: 20.0   1st Qu.: 119.0
Median : 95.0   Median : 166.0   Median : 226.7   Median : 627.9
Mean :181.8   Mean : 399.8   Mean : 386.9   Mean : 968.5
3rd Qu.:243.0   3rd Qu.: 765.0   3rd Qu.: 586.0   3rd Qu.:1762.0
Max. :700.0   Max. :1720.0   Max. :1977.0   Max. :2986.7
-----
results.7$class: Middle
      CT08   CT09   CT10   CT.total
Min. : 0.0   Min. : 30.0   Min. : 0.0   Min. : 30.0
1st Qu.: 114.2 1st Qu.: 220.0 1st Qu.: 216.2 1st Qu.: 748.4
Median : 296.0  Median : 441.0  Median : 402.1  Median :1250.9
Mean : 391.0   Mean : 644.7   Mean : 634.7   Mean :1670.4
3rd Qu.: 579.5 3rd Qu.: 838.2 3rd Qu.: 566.8 3rd Qu.:2559.7
Max. :1378.0   Max. :2441.0   Max. :3244.0   Max. :4770.0
-----
results.7$class: Under
      CT08   CT09   CT10   CT.total
Min. : 0.0   Min. : 0.0   Min. : 0.0   Min. : 0
1st Qu.: 0.0   1st Qu.: 0.0   1st Qu.: 0.0   1st Qu.: 0
Median : 0.0   Median : 240.0   Median : 145.0   Median : 645
Mean : 222.7   Mean : 458.0   Mean : 378.3   Mean :1059
3rd Qu.: 398.9 3rd Qu.: 545.5 3rd Qu.: 530.0 3rd Qu.:1335
Max. :1190.0   Max. :2831.0   Max. :2041.0   Max. :4622

> budget.CT.by.class.tmean<-by(budget[,c("CT08","CT09","CT10","CT.total")],results.7$class,mean,trim=5)
> print(budget.CT.by.class.tmean)
results.7$class: Better
      CT08   CT09   CT10 CT.total
      95.0   166.0   226.7 627.9
-----
results.7$class: Middle
      CT08   CT09   CT10 CT.total
      296.0 441.0 402.1 1250.9
-----
results.7$class: Under
      CT08   CT09   CT10 CT.total
      0      240    145   645
-----
>

```