20MIA1150
Saptharishee M
Assignment -10
ANOVA:

ANOVA:

1. Suppose the following table represents the sales figures of the 3 new menu items in the 18 restaurants after a week of test marketing. At .05 level of significance, test whether the mean sales volume for the 3 new menu items are all equal.

Item1	Item2	Item3
22	52	16
42	33	24
44	8	19
52	47	18
45	43	34
37	32	39

#the below text is copied in a notepad and kept at location:
“D:\Saptharishee clg “with name: “somenameforassigment.txt”

	Item1	Item2	Item3
1	22	52	16
2	42	33	24
3	44	8	19
4	52	47	18
5	45	43	34

```
> df1 = read.table("D:\\Saptharishee clg\\somenameforassigment.txt",
header=TRUE);
```

```
> df1
  Item1 Item2 Item3
1    22    52    16
2    42    33    24
3    44     8    19
4    52    47    18
5    45    43    34
6    37    32    39
> r = c(t(as.matrix(df1)))
> r
 [1] 22 52 16 42 33 24 44  8 19 52 47 18 45 43 34 37 32 39
> f = c("Item1", "Item2", "Item3")
> k = 3
> n = 6
> tm = gl(k, 1, n*k, factor(f))
> tm
 [1] Item1 Item2 Item3 Item1 Item2 Item3 Item1 Item2 Item3 Item1 Item2
Item3 Item1
[14] Item2 Item3 Item1 Item2 Item3
Levels: Item1 Item2 Item3
> av = aov(r ~ tm)
> av
Call:
```

```
  aov(formula = r ~ tm)

Terms:
                      tm Residuals
Sum of Squares   745.4444 2200.1667
Deg. of Freedom         2        15

Residual standard error: 12.11106
Estimated effects may be unbalanced
> summary(av)
            Df Sum Sq Mean Sq F value Pr(>F)
tm           2  745.4   372.7   2.541  0.112
Residuals   15 2200.2   146.7
> #p-value of 0.11 is greater than the .05 significance level
> #we do not reject the null hypothesis that the mean sales volume of the new menu items #are all equal.
```

>

Console Terminal Jobs

R 4.1.0 · ~/

```
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