

# Reliability Class Activity

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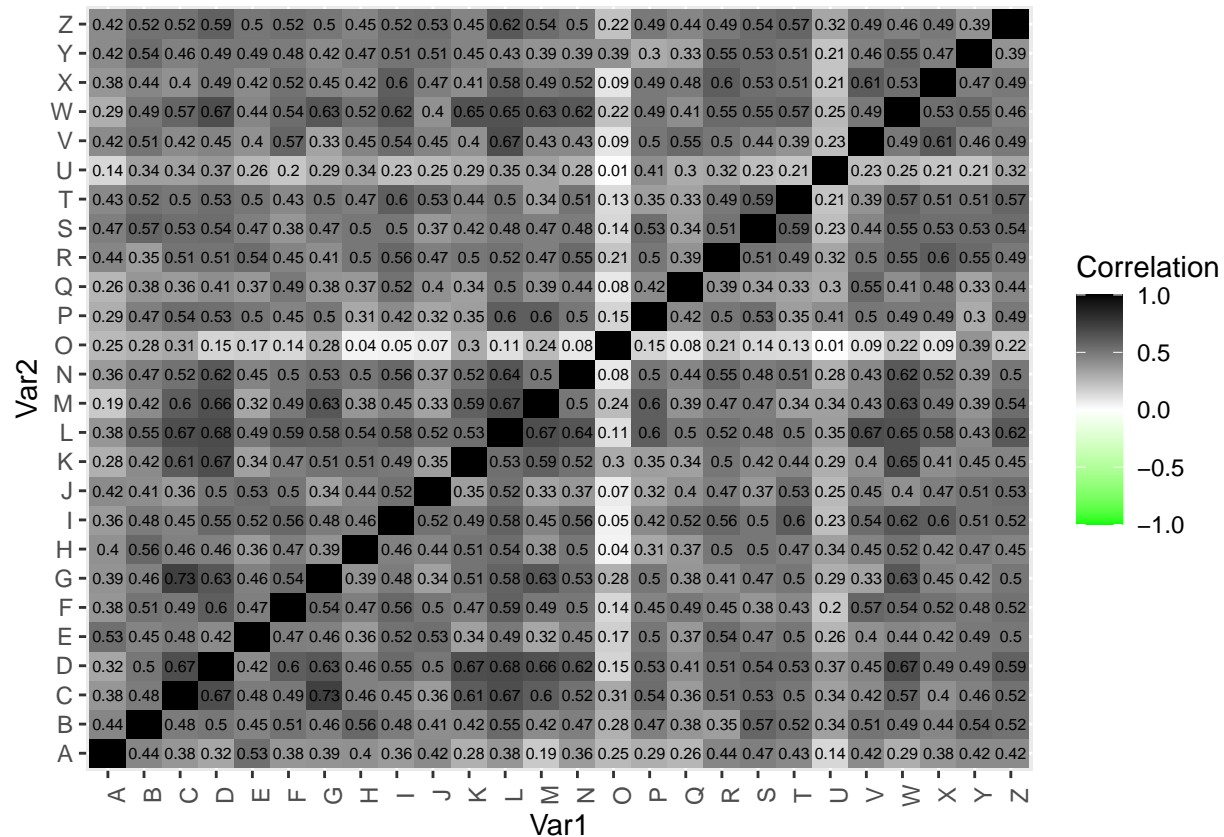
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## Advert Rating : Outlier Detection

```
library("xlsx")
qn1 = read.xlsx(file = "Reliability Activity.xlsx", sheetIndex = 1)
library(reshape2)

cor1 = round(cor(qn1), 2)
melted_cor = melt(cor1)

library(ggplot2)
ggplot(data = melted_cor, aes(x=Var1, y=Var2, fill=value)) +
  geom_tile() +
  geom_text(aes(label = value), size = 2) +
  scale_fill_gradient2(low = "green", high = "black",
                      limit = c(-1,1), name="Correlation") +
  theme(axis.text.x = element_text(angle = 90))
```



### Conclusion from the Correlation Heatmap.

1. We can clearly see that all the persons from A-Z, except O have positive correlation between them as expected, as they are expected to give similar ratings.
2. But in case of participant O, we can clearly see that correlation is really low, almost 0 in many cases, which shows that it is the outlier and hence the participant who has given random ratings.

### Reliable Job : Internal Consistency.

```
library(ltm)
qn2 = read.xlsx(file = "Reliability Activity.xlsx", sheetIndex = 2)

js1 = qn2$JS1
js2 = qn2$JS2
js3 = qn2$JS3
js4 = qn2$JS4

job_satisfaction = data.frame(js1, js2, js3, js4)
js_alpha = cronbach.alpha(job_satisfaction)

print(js_alpha)
```

```
##  
## Cronbach's alpha for the 'job_satisfaction' data-set  
##  
## Items: 4  
## Sample units: 30  
## alpha: 0.863
```

```
jp1 = qn2$JP1  
jp2 = qn2$JP2  
jp3 = qn2$JP3  
jp4 = qn2$JP4  
  
job_performance = data.frame(jp1, jp2, jp3, jp4)  
jp_alpha = cronbach.alpha(job_performance)  
print(jp_alpha)
```

```
##  
## Cronbach's alpha for the 'job_performance' data-set  
##  
## Items: 4  
## Sample units: 30  
## alpha: 0.558
```

### **Conclusions from the Cronbach alpha for Job Performance and Job Satisfaction.**

1. We know that the cronbach alpha  $\geq 0.7$  is treated acceptable for internal consistency.
2. In case of Job Satisfaction, cronbach alpha = 0.863. Hence the measure of Job satisfaction is acceptable measure.
3. But in case of Job Performance, cronbach alpha = 0.558. Hence the measure of Job Performance is not an acceptable measure.