

# assignment 3

UDOH DANIEL

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## Statistics for One Variable

I learnt how to create frequencies and when doing so our variables must be in alphabetical order. I also learnt how to create frequency table and also modify it. I learnt how to put variables into groups and also in ascending or descending order. Proportion tables can also be created. We can use the round function and also the percentage function.

I learnt how to compute some descriptive statistics by using the command boxplot stat (x) where x is quantitative. To calculate trimmed mean. ; mean, (x, trimmed =0.10, by running this, I'm telling R to cut of 10% of our observation from each end, which makes 20%.

To compute a single mean hypothesis. T-test (x), where x is a quantitative variable. The conditions for proportion test applies to the t test too. Also, for the t test, R uses a default mu ( $\mu$ ) value of 0. I can set a value for my mu ( $\mu$ ) by including the argument "mu = 20" in my code.

I learnt about using a single categorical variable one sample chi-square test. I learnt about getting marginal frequencies under this aspect, I also learnt about rounding off variables and analyzing them through the chi-square test.

I learnt about using a single mean hypothesis test and confidence interval. I learnt how to use t-test for one sample, I learnt how to do a proportion test. It can be noted that when doing a prop test (y, x, alternative = c ("greater", "less", "two-sided"), confidence level = 99%) where y is the number of success and x is the number of attempts. If I exclude the part in the bracket , R will use a default alternative hypothesis which is two-sided that is not equal to 0.5 , and a default confidence interval of 95%. We can use any of the three hypotheses available but we cannot test for two or all three at a time.

```
###Loading mtcars
data("mtcars")
require("psych")
```

```
## Loading required package: psych
```

```
###describing variables  
d<-describe(mtcars[c(1,4,7)])
```

```
###calculating variables  
d[,c(3,4,11,12)]
```

```
##      mean    sd skew kurtosis  
## mpg   20.09  6.03 0.61   -0.37  
## hp   146.69 68.56 0.73   -0.14  
## qsec  17.85  1.79 0.37    0.34
```