T-test

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#T-tests   
#install.packages("reshape2")  
data(tips,package="reshape2")  
head(tips)

## total\_bill tip sex smoker day time size  
## 1 16.99 1.01 Female No Sun Dinner 2  
## 2 10.34 1.66 Male No Sun Dinner 3  
## 3 21.01 3.50 Male No Sun Dinner 3  
## 4 23.68 3.31 Male No Sun Dinner 2  
## 5 24.59 3.61 Female No Sun Dinner 4  
## 6 25.29 4.71 Male No Sun Dinner 4

str(tips)

## 'data.frame': 244 obs. of 7 variables:  
## $ total\_bill: num 17 10.3 21 23.7 24.6 ...  
## $ tip : num 1.01 1.66 3.5 3.31 3.61 4.71 2 3.12 1.96 3.23 ...  
## $ sex : Factor w/ 2 levels "Female","Male": 1 2 2 2 1 2 2 2 2 2 ...  
## $ smoker : Factor w/ 2 levels "No","Yes": 1 1 1 1 1 1 1 1 1 1 ...  
## $ day : Factor w/ 4 levels "Fri","Sat","Sun",..: 3 3 3 3 3 3 3 3 3 3 ...  
## $ time : Factor w/ 2 levels "Dinner","Lunch": 1 1 1 1 1 1 1 1 1 1 ...  
## $ size : int 2 3 3 2 4 4 2 4 2 2 ...

# write.csv(tips,"D:/IMT G 2020-22/Term 2/DSA", row.names = FALSE)  
unique(tips$sex)

## [1] Female Male   
## Levels: Female Male

#One Sample Test  
t.test(tips$tip, alternative="two.sided",mu=2.5)

##   
## One Sample t-test  
##   
## data: tips$tip  
## t = 5.6253, df = 243, p-value = 5.08e-08  
## alternative hypothesis: true mean is not equal to 2.5  
## 95 percent confidence interval:  
## 2.823799 3.172758  
## sample estimates:  
## mean of x   
## 2.998279

# two Sample Test  
t.test(tip~sex, data=tips,var.equal=TRUE)

##   
## Two Sample t-test  
##   
## data: tip by sex  
## t = -1.3879, df = 242, p-value = 0.1665  
## alternative hypothesis: true difference in means is not equal to 0  
## 95 percent confidence interval:  
## -0.6197558 0.1074167  
## sample estimates:  
## mean in group Female mean in group Male   
## 2.833448 3.089618