**Fantaloons Sales managers commented that *%* of males versus females walking in to the store differ based on day of the week. Analyze the data and determine whether there is evidence at *5 %* significance level to support this hypothesis.**

**Minitab File: Fantaloons.mtw**

**#import csv files**

faltoons<-read.csv(file.choose(),header = T)

View(faltoons)

Head(faltoons)

|  |
| --- |
| Weekdays Weekend  1 Male Female  2 Female Male  3 Female Male  4 Male Female  5 Female Female  6 Female Male |
|  |
| |  | | --- | | > | |

attach(faltoons)

**# in our data set both x and y are discrete**

**# data set contains two proportions**

**# so we have to perform 2 proportion test**

#create stacked data

stack\_data<-stack(faltoons)

View(stack\_data)

head(stack\_data,10)

|  |
| --- |
| values ind  1 Male Weekdays  2 Female Weekdays  3 Female Weekdays  4 Male Weekdays  5 Female Weekdays  6 Female Weekdays  7 Female Weekdays  8 Female Weekdays  9 Female Weekdays  10 Female Weekdays |
|  |
| |  | | --- | | > | |

attach(stack\_data)

**#create table**

faltoons\_table<-table(ind,values)

View(faltoons\_table)

|  | **ind** | **values** | **Freq** |
| --- | --- | --- | --- |
|  |  |  |  |
| **1** | Weekdays | Female | 287 |
| **2** | Weekend | Female | 233 |
| **3** | Weekdays | Male | 113 |
| **4** | Weekend | Male | 167 |

Showing 1 to 4 of 4 entries, 3 total columns

**#perform 2 proportion test**

**#set hypothesis**

**#H0: proportion of males and females equal => p-value>0.05**

**#H1: proportion of males and females are different => p-value<0.05**

prop.test(x=c(233,113),n=c(520,250),conf.level = 0.95,correct = FALSE,alternative = "two.sided")

|  |
| --- |
| 2-sample test for equality of proportions without continuity correction  data: c(233, 113) out of c(520, 250)  X-squared = 0.010501, df = 1, p-value = 0.9184  alternative hypothesis: two.sided  95 percent confidence interval:  -0.07897636 0.07113020  sample estimates:  prop 1 prop 2  0.4480769 0.4520000 |
|  |
| |  | | --- | | > | |

**# performing prop.test, we got p-value=0.9184 >0.05**

**#so we can say that there is no difference in males versus females walking in to the store**

**# on day of the week**

**# we accept null hypothesis**