R Notebook

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library(readr)  
sleep <- read.csv("https://raw.githubusercontent.com/JA-McLean/STOR455/master/data/SleepStudy.csv")

Create a logistic model that predicts gender based on GPA.

mod1 = glm(Gender~GPA, data=sleep)

how does your model predict the odds of being male or female will change based on GPA?

summary(mod1)

##   
## Call:  
## glm(formula = Gender ~ GPA, data = sleep)  
##   
## Deviance Residuals:   
## Min 1Q Median 3Q Max   
## -0.7730 -0.3865 -0.2675 0.5243 0.8217   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 1.36768 0.24322 5.623 4.98e-08 \*\*\*  
## GPA -0.29734 0.07441 -3.996 8.47e-05 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## (Dispersion parameter for gaussian family taken to be 0.2280315)  
##   
## Null deviance: 60.877 on 252 degrees of freedom  
## Residual deviance: 57.236 on 251 degrees of freedom  
## AIC: 347.97  
##   
## Number of Fisher Scoring iterations: 2

exp(summary(mod1)$coef[2])

## [1] 0.7427898

For every 1 point increase in GPA, the odds of being male increase by a factor of .74.