The plot splits to the left if the condition is true and to the right if the condition is false. We try to estimate the total rate of mood disorder our case. It is the response variable, and we try to add some reason in our model as predictor variable. Below is our supposed predictor: for example, Male.t value is greater if there are more men in the region, black.t corresponds to the amount of black people, APIC corresponds to Asians and Pacific Islanders, UrbanicitySort value is higher if the region is more urban, SESSort value is higher if the region is richer, A1 corresponds to the amount of young people, ... A4 corresponds to the amount of old people. Pop2010 is the population in this region. If "Percent " value is higher ,it means more poverty here. Unemployment\_rate value is higher means more people loss their job.

Finally, we got answer from the plot:

first, we split the data by male:

second, we see suburb: urban is 592:416

from suburb branch: use APIC(Asian/pacific/Islander) rate to split, [more APIC(>0.13): less APIC] is 400:192.

from urban branch: use male rate to split: [more male(>0.29):less man] is 375:41.

we could got a briefly result, the people live in the suburb where are more APIC, they have more mood disorder problem. And the people who live in the urban where there are more male, they have more mood disorder problem.