STATS 202A: Assignment #7
305348579

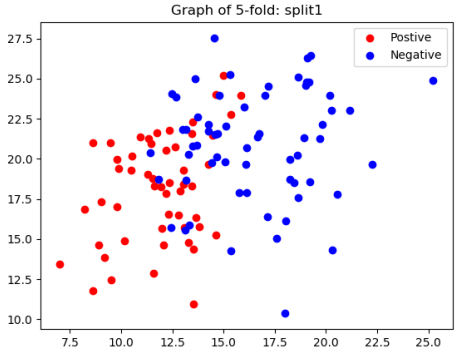
Yining Hong

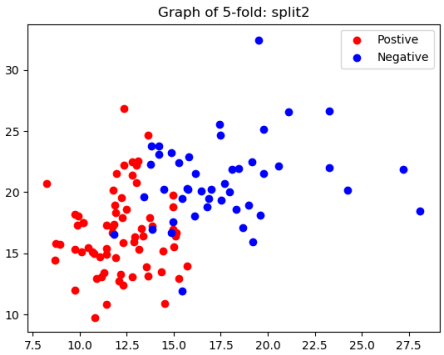
Problem 1

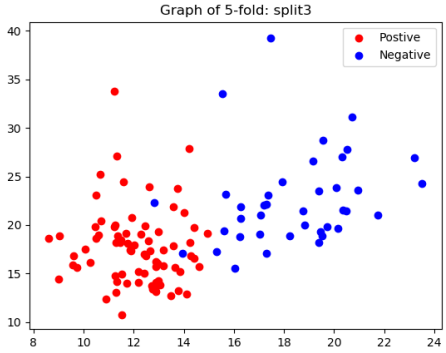
Perform 5-fold validation for cancer data. output mean, std of the 5-folid validation accuracy.

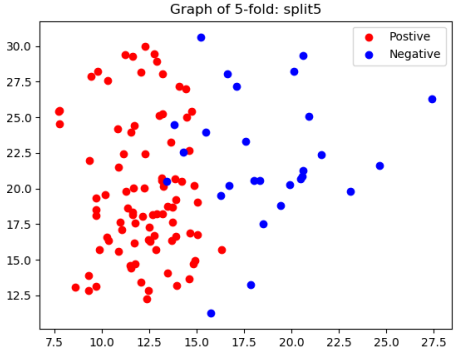
```
Q1: 5-fold validation
Mean: 0.9666200900481291, Std: 0.02175653851458082
```

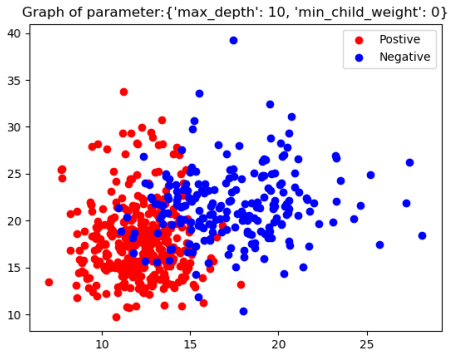
We also plot Graphs (scatterplots) of 5-fold.









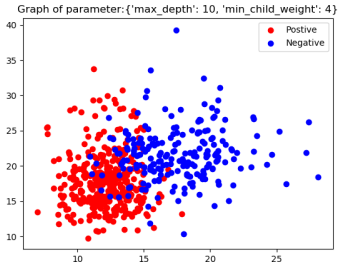


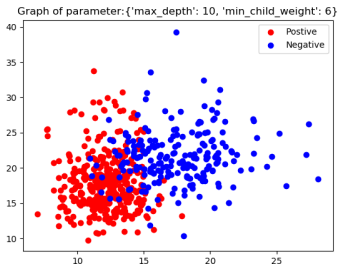
Problem 2

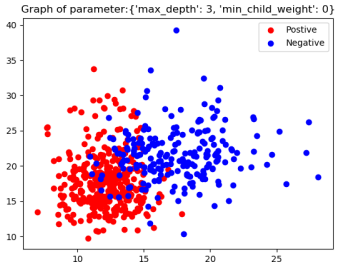
Perform Grid Search for parameter maxdepth and minchildweight (you can also play with others). Print the grid search mean test score for each paramter combination. Plot graphs for each setting you tried. (like we plotted in hw6)

we also plot scatterplots for different parameter settings.
We only show three settings, because scatterplots are similar for each setting.

```
Q2: [{'max_depth': 3, 'min_child_weight': 0}, {'max_depth': 3, 'min_child_weight
': 2}, {'max_depth': 3, 'min_child_weight': 4}, {'max_depth': 3, 'min_child_weig
ht': 6}, {'max_depth': 6, 'min_child_weight': 0}, {'max_depth': 6, 'min_child_we
ight': 2}, {'max_depth': 6, 'min_child_weight': 4}, {'max_depth': 6, 'min_child_
weight': 6}, {'max_depth': 9, 'min_child_weight': 0}, {'max_depth': 9, 'min_chil
d_weight': 2}, {'max_depth': 9, 'min_child_weight': 4}, {'max_depth': 9, 'min_ch
ild_weight': 6}, {'max_depth': 10, 'min_child_weight': 0}, {'max_depth': 10, 'mi
n_child_weight': 2}, {'max_depth': 10, 'min_child_weight': 4}, {'max_depth': 10,
 'min_child_weight': 6}]
Q2: [0.96485062 0.96836555 0.96485062 0.96660808 0.96309315 0.96836555
 0.96485062 0.96660808 0.96133568 0.96836555 0.96485062 0.96660808
 0.96133568 0.96836555 0.96485062 0.96660808]
```







Problem 3

Plot the feature importance of the best model.

Plot the feature importance of the best model.