a. Based on accuracy which feature selection method worked the best?

the genetic algorithm

b. For each of the 3 other feature selection methods, explain why you think it does not perform as well as the best one.

For Simulated Annealing, Since I did not set up random status in initial, the result might be unstable, sometime it can be the same as the genetic algorithm.

(It’s the seconde best.)

For PCA, Linear transformation changes the correlation between the data. In this data set, these changes make the reliability of the data decrease and affect the accuracy of the model.

(It’s the lowest one)

For Original Feature, it’s the third best.

c. Did Part 3 produce the same set of best features as Part 2? Explain possible reasons why it did or did not.

No,PCA do a Linear transformation for the features. So the gap between 3 and 2 should be larger, even they are similar.

d. Did Part 4 produce the same set of best features as Part 2? Explain possible reasons why it did or did not.

No,It’s similar to Part3, but differ from Part 2.