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Homework 5

<div align="center">Resubmission Homework 5</div>

Provided are the adjustments made for Homework 5:

1. Pivots adjustment to consider numeric attributes, prior to the addition of these pivots, non-numeric attributes were only being considered for best partition. Numeric pivots have now been added, and the related numeric average thresholds for the left and right partitions.

2. Fixed divide by zero error for both probability and weights. In my ParentStrategy class, lines 10-15 I added logic here to deal with division with zero, specifically that in probability(). Lines 47 - 49, I implemented a for loop to replace any 0 (weight) value in the partition with 0.5. Therefore, each subset in the partition has an equal weight.

3. Fixed weights in gini calc - the CollectiveImpurityGini class now has weights included in the calculation. Prior to adding weights, my gini calculation was invalid, as weights are required. Lines 20-21, and 39 have the implementation of weights. Therefore, at each iteration, the weight is applied to the total_gini score.

4. Fixed indentation on gini calc - the CollectiveImpurityGini class had an error in the calculate function where total_gini was returned in the if conditional. Therefore, total_gini was not calculated properly. The total_gini variable is now indented at the level of the for loop, not in the if conditional. See line 44 for this fix in the calculate function.