report on candidate elimination

Assignment 1

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After the implementation of the Candidate Elimination Algorithm based on the given training data with 7 classes, we generated the following data. (Here -1 represents ‘?’. The other values are in accordance with the given notation. -2 is used to represent ‘Null’.)

As can be seen from below, the concept **cannot be learned for classes 3 and 7** from the given data.

**For classes 1, 2,4,5,6 the concept can be learned** and the boundaries are given below.

CountG is the number of Generic Boundaries for the given class. Similarly, CountS is for the number of specific Boundaries.

This data gives us the set of Generic and Specific Boundaries for each class (if applicable):

Program successfully completed!!!

Specific boundaries for class 1(countS=1) :

-1, 0, -1, 1, -1, -1, -1, -1, 1, 1, 0, -1, -1, -1, -1, -1,

Specific boundaries for class 2(countS=1) :

0, 1, 1, 0, -1, -1, -1, 0, 1, 1, 0, 0, 2, 1, -1, -1,

Specific boundaries for class 3(countS=0) :

Specific boundaries for class 4(countS=1) :

0, 0, 1, 0, 0, 1, -1, 1, 1, 0, -1, 1, 0, 1, -1, -1,

Specific boundaries for class 5(countS=1) :

0, 0, 1, 0, 0, 1, -1, 1, 1, 1, -1, 0, 4, -1, 0, 0,

Specific boundaries for class 6(countS=1) :

-1, 0, 1, 0, -1, 0, -1, 0, 0, 1, -1, 0, 6, 0, -1, 0,

Specific boundaries for class 7(countS=0) :

Generic boundaries for class 1(countG=1) :

-1, -1, -1, 1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1,

Generic boundaries for class 2(countG=7) :

-1, 1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1,

0, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, 2, -1, -1, -1,

-1, -1, 1, -1, -1, -1, -1, -1, -1, -1, -1, -1, 2, -1, -1, -1,

-1, -1, -1, 0, -1, -1, -1, -1, -1, -1, -1, -1, 2, -1, -1, -1,

-1, -1, -1, -1, -1, -1, -1, 0, -1, -1, -1, -1, 2, -1, -1, -1,

-1, -1, -1, 0, -1, -1, -1, 0, -1, -1, -1, 0, -1, 1, -1, -1,

-1, -1, -1, 0, -1, -1, -1, -1, -1, -1, 0, 0, -1, 1, -1, -1,

Generic boundaries for class 3(countG=8) :

0, 0, -1, -1, -1, -1, 1, -1, 1, 1, -1, 0, -1, -1, -1, -1,

0, 0, -1, -1, -1, -1, 1, -1, -1, 1, 1, 0, -1, -1, -1, -1,

0, 0, -1, -1, -1, -1, 1, -1, -1, 1, -1, 0, 4, -1, -1, -1,

-1, 0, -1, 0, -1, -1, -1, -1, 1, -1, -1, 0, -1, -1, -1, 1,

-1, 0, -1, 0, -1, -1, -1, -1, -1, -1, -1, 0, -1, 1, -1, 1,

-1, -1, 1, -1, -1, 1, -1, -1, -1, -1, -1, 0, -1, 1, -1, 1,

-1, -1, -1, 0, -1, 1, -1, -1, 1, -1, -1, 0, -1, -1, -1, 1,

-1, -1, -1, 0, -1, 1, -1, -1, -1, -1, -1, 0, -1, 1, -1, 1,

Generic boundaries for class 4(countG=14) :

-1, -1, 1, -1, -1, -1, -1, -1, -1, -1, -1, 1, -1, -1, -1, -1,

-1, -1, -1, 0, -1, -1, -1, -1, -1, -1, -1, 1, -1, -1, -1, -1,

-1, -1, -1, -1, -1, -1, -1, -1, -1, 0, -1, 1, -1, -1, -1, -1,

-1, -1, 1, -1, -1, 1, -1, 1, -1, -1, -1, -1, 0, -1, -1, -1,

-1, -1, 1, -1, -1, 1, -1, -1, 1, -1, -1, -1, 0, -1, -1, -1,

-1, -1, 1, 0, 0, 1, -1, 1, -1, -1, -1, -1, -1, 1, -1, -1,

0, 0, 1, -1, -1, 1, -1, -1, -1, -1, -1, -1, -1, 1, -1, -1,

-1, 0, 1, -1, -1, 1, -1, 1, -1, -1, -1, -1, -1, 1, -1, -1,

-1, 0, 1, 0, -1, 1, -1, -1, -1, -1, -1, -1, -1, 1, -1, -1,

-1, -1, 1, -1, -1, 1, -1, -1, -1, -1, -1, -1, 0, 1, -1, -1,

-1, -1, -1, -1, -1, -1, -1, 1, -1, 0, -1, -1, -1, -1, -1, -1,

-1, -1, -1, -1, -1, -1, -1, -1, 1, 0, -1, -1, -1, -1, -1, -1,

-1, -1, -1, -1, -1, -1, -1, -1, -1, 0, -1, -1, -1, 1, -1, -1,

-1, 0, -1, 0, -1, -1, -1, -1, -1, -1, -1, -1, 0, 1, -1, -1,

Generic boundaries for class 5(countG=32) :

0, -1, -1, -1, -1, 1, -1, 1, -1, 1, -1, 0, -1, -1, -1, -1,

-1, -1, 1, -1, -1, 1, -1, 1, -1, 1, -1, -1, -1, -1, -1, -1,

-1, -1, 1, -1, -1, 1, -1, 1, -1, -1, -1, 0, -1, -1, -1, -1,

-1, -1, -1, 0, -1, 1, -1, 1, -1, 1, -1, -1, -1, -1, -1, -1,

0, 0, 1, -1, -1, 1, -1, -1, 1, -1, -1, 0, -1, -1, -1, -1,

-1, 0, 1, 0, -1, 1, -1, -1, 1, -1, -1, 0, -1, -1, -1, -1,

0, -1, -1, -1, -1, 1, -1, 1, -1, -1, -1, -1, 4, -1, -1, -1,

-1, 0, 1, -1, -1, 1, -1, -1, 1, -1, -1, 0, -1, -1, -1, 0,

-1, -1, 1, -1, -1, 1, -1, 1, -1, -1, -1, -1, 4, -1, -1, -1,

0, 0, 1, -1, -1, 1, -1, -1, -1, 1, -1, -1, -1, -1, -1, -1,

0, -1, -1, -1, -1, 1, -1, -1, 1, -1, -1, -1, 4, -1, -1, -1,

-1, -1, -1, 0, -1, 1, -1, 1, -1, -1, -1, -1, 4, -1, -1, -1,

-1, -1, 1, -1, 0, 1, -1, -1, 1, -1, -1, 0, -1, -1, -1, 0,

-1, -1, -1, -1, -1, 1, -1, 1, -1, -1, -1, -1, 4, -1, -1, 0,

-1, -1, -1, -1, -1, 1, -1, -1, 1, -1, -1, -1, 4, -1, -1, 0,

0, -1, -1, -1, -1, 1, -1, -1, -1, 1, -1, -1, 4, -1, -1, -1,

-1, -1, -1, -1, -1, 1, -1, -1, -1, 1, -1, -1, 4, -1, -1, 0,

-1, -1, -1, 0, -1, 1, -1, -1, 1, -1, -1, -1, 4, -1, -1, -1,

-1, -1, -1, 0, -1, 1, -1, -1, -1, 1, -1, -1, 4, -1, -1, -1,

0, 0, -1, -1, -1, 1, -1, -1, -1, 1, -1, 0, -1, -1, -1, -1,

-1, 0, -1, 0, -1, 1, -1, -1, -1, 1, -1, -1, -1, -1, -1, -1,

-1, 0, -1, -1, -1, 1, -1, -1, -1, 1, -1, -1, -1, -1, -1, 0,

-1, -1, -1, -1, 0, 1, -1, -1, -1, 1, -1, -1, -1, -1, -1, 0,

-1, -1, -1, -1, -1, 1, -1, 1, -1, 1, -1, -1, -1, -1, -1, 0,

-1, -1, -1, -1, -1, 1, 0, -1, -1, -1, -1, -1, 6, -1, -1, -1,

-1, -1, -1, -1, -1, -1, 0, -1, -1, 0, -1, -1, 6, -1, -1, -1,

-1, -1, -1, -1, -1, 1, -1, -1, -1, 1, -1, -1, 6, -1, -1, -1,

-1, -1, -1, -1, -1, -1, 1, -1, -1, 1, -1, -1, 6, -1, -1, -1,

0, 0, -1, -1, -1, -1, 0, -1, -1, 1, -1, -1, -1, 1, -1, -1,

0, 0, -1, -1, -1, -1, -1, -1, 1, 1, -1, -1, -1, -1, -1, 0,

0, -1, -1, -1, 0, -1, 0, -1, 1, 1, -1, -1, -1, -1, -1, -1,

0, -1, -1, -1, 0, -1, 0, -1, -1, 1, -1, -1, -1, 1, -1, -1,

Generic boundaries for class 6(countG=3) :

-1, -1, -1, -1, -1, 0, -1, -1, -1, -1, -1, -1, 6, -1, -1, -1,

-1, -1, -1, -1, -1, -1, -1, -1, -1, 1, -1, -1, 6, -1, -1, -1,

-1, -1, -1, 0, -1, 0, -1, -1, -1, -1, -1, 0, -1, 0, 0, -1,

Generic boundaries for class 7(countG=0) :