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CS 513 Midterm

October 25, 2017

I pledge my honor that I have abided by the Stevens Honor System.

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1A 100/400 = 0.25

1B 149/400 = 0.3725

1C 46 / 400 = 0.115

1D 34 / 400 = 0.085

1E 15 / 80 = 0.1875

1F No, let’s do the Hispanic cocaine addiction cell.

The fraction of 7 / 46 (cocaine given Hispanic) is not the same the 149 / 400 (pure cocaine without given any race).

0.15 does not equal to 0.3725.

2 see excel

3 Property 1: Distance is always non-negative

Property 2: Commutative, distance from “A to B” is distance from “B to A”

Property 3: Triangle inequality holds, distance from “A to C” must be less than or equal to distance from “A to B to C”

It breaks the third rule. This function fulfills the property 1 and 2, but it doesn’t work on because if we do he difference separately, then (0,0) to (0,1) plus (0,1) to (1,1) is smaller than directly doing (0,0) to (1,1). It should not be smaller than it, so this is not a proper distance function.

Distance from (0,0) to (0,1) is 1

Distance from (0,1) to (1,1) is 1

Distance from (0,0) to (1,1), however, according to the given equation, would be 8. It is clearly not the correct answer.

4a see excel

4b see excel

5 We simply delete all the record with the question marks to prevent any unnecessary errors.

For details please see the R program.

Comments are all in the R problem, and the comments explains everything.

The following is the screen shot of our test result:

