

Aquino_Corbin_Round3.py

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1 f = open("3jr_testdata.txt", 'r')
2 for line in f.readlines():
3     try:
4         binNum = bin(int("0x"+line, 16))[2:]
5         binNum = "0"*(8-len(binNum))+binNum
6         grid = [list(binNum[:4]),list(binNum[4:])]
7
8         #4 adjacent boxes - all
9         groups = ["grid[0]", "grid[1]", "[grid[0][0],grid[1][0],grid[0][1],grid[1][1]]", "[grid[0][1],grid[1][1],grid[0][2],grid[1][2]]", "[grid[0]
10        terms = [ "B", "~B", "A", "C", "~A"]
11        #2 adjacent boxes - top row, bottom row
12        groups += ["grid[0][:2]", "grid[0][1:3]", "grid[0][2:]", "grid[1][:2]", "grid[1][1:3]", "grid[1][2:]"]
13        terms += [ "AB", "BC", "~AB", "A~B", "~BC", "~A~B"]
14        #2 adjacent boxes - columns, exceptions
15        groups += ["[grid[0][0],grid[1][0]]", "[grid[0][1],grid[1][1]]", "[grid[0][2],grid[1][2]]", "[grid[0][3],grid[1][3]]", "[grid[0][0],grid[0]
16        terms += [ "A~C", "AC", "~AC", "~A~C", "B~C",
17        #single boxes - all
18        groups += ["grid[0][0]", "grid[1][0]", "grid[0][1]", "grid[1][1]", "grid[0][2]", "grid[1][2]", "grid[0][3]", "grid[1][3]"]
19        terms += [ "AB~C", "A~B~C", "ABC", "A~BC", "~ABC", "~A~BC", "~AB~C", "A~B~C"]
20
21        answer = ""
22        for i in range(len(groups)):
23            #check if the group has all ones
24            x = "x=" + groups[i]
25            exec(x)
26            if len(x) == 1: x = list(x)
27            if x == list("1"*len(x)):
28
29                #add the term to the answer
30                answer = answer + terms[i] + " + "
31
32                #Each box can only be used once, so discard boxes after using them
33                x = groups[i] + "=" + str(list("2"*len(x)))
34                exec(x)
35        print(answer[:-3])
36
37    except:
38        print(error)
39 f.close()
40 #27 lines of code
41

```