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## -*- coding: utf-8 -*-
import sys
import numpy as np
from math import sqrt
from operator import mul

param = sys.argv

score_A = param[1][1:-1].split(",")
score_B = param[3][1:-1].split(",")
print u'sample A = %r (%d)' % (score_A, len(score_A))
print u'sample B = %r (%d)' % (score_B, len(score_B))

vector = score_A
plus = 0
minus = 0
for i in range(len(score_A)):
    vector[i] = int(score_A[i]) - int(score_B[i])
    if vector[i]>0:
        plus+=vector[i]
    else:
        minus+=vector[i]

print u'vector = %r, plus = %d, minus = %d' % (vector,plus,minus)

intensity_max = sqrt( 2*(4*len(vector)/2)**2)

print u'相互補完強度の最大値 = %s' % intensity_max

intensity = sqrt( 2*((4*len(vector)/2)**2) ) - sqrt( (4*len(vector)/2-plus)**2 +
(-4*len(vector)/2-minus)**2 )
coefficient = intensity / intensity_max
coefficient_max = intensity_max / intensity_max

print u"¥r¥n"
print u'相互補完強度 = %s' % intensity
print u'相互補完強度係数 = %s' % coefficient
print u"¥r¥n"

Area_Weight = [8, 4, 3, 1, 9, 12, 5]
Area_Max = np.sum(Area_Weight) * 2

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area_A = param[2][1:-1].split(",")
area_B = param[4][1:-1].split(",")
area_A = map(int, area_A)
area_B = map(int, area_B)
area_Aw = map(mul, Area_Weight, area_A)
area_Bw = map(mul, Area_Weight, area_B)
print area_Aw
print u'地域合計 A = %d %r' % (sum(area_Aw), area_Aw)
print u'地域合計 B = %d %r' % (sum(area_Bw), area_Bw)
area_sum = sum(area_Aw) + sum(area_Bw)

add_value = intensity + (intensity_max/len(score_A)*3) *
(float(area_sum)/float(Area_Max))
add_max = intensity_max + (intensity_max/len(score_A)*3) * (Area_Max/Area_Max)
add_ratio = add_value / add_max
print u'加算値 = %f' % (add_value)
print u'加算係数 = %f' % (add_ratio)

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