import math

import numpy as np

import scipy

import copy

import itertools

def sistem (n,x):

if n==1:

return math.sin(x[1]+1)-x[0] -1.2

elif n==2:

return 2\*x[1]+math.cos(x[0])-2

def mpi (n,m,x, eps= 1e-3):

k=0

while True:

d=0; b=copy.deepcopy(x); a=copy.deepcopy(b)

a[1]=sistem(1,x)

x[1]=a[1]

a[2]=sistem(2,x)

x[2]=a[2]

a=copy.deepcopy(b)

for i in range(1,n+1):

d1=abs(x[i]-a[i])

if d<d1:

d = d1

k += 1

if d<= eps:

print ('Solution is',x,'/number of iteration=',k)

break

else:

a=copy.deepcopy(x)

if k>m:

print('Процес розбігається!')

exit(0)

mpi(2,10,np.array([0.,1.5,1.7]))

from scipy import optimize

def fun (x):

return [x[0] - 1 \* (x[0]- x[1])\*\*3 - 0.5,

1.5 \* (x[1] - x[0])\*\*3 + x[1]]

sol = optimize.root(fun,[0,0],method='hybr')

print (sol.x)



