import time

import os

import sys

from shutil import copyfile

import csv

import math

from math import factorial as fact

from bitstring import BitArray

inputfile = sys.argv[1]

def readInput():

outputfile = str(inputfile) + '.out'

copyfile(inputfile, outputfile)

fin = open(inputfile,"r")

lines = fin.readlines()

length = len(lines)

restart = False

saveBasis = 'nothing.dat'

for i in range(length):

toks = lines[i].split(",")

if len(toks) >= 2:

if toks[0] == 'model':

model = toks[1].strip()

if toks[0] == 'nSite':

nSite = int(toks[1])

if toks[0] == 'subSpace':

subSpace = int(toks[1])

if toks[0] == 'nStates':

nStates = int(toks[1])

if toks[0] == 's2Target':

s2Target = float(toks[1])

if toks[0] == 'maxItr':

maxItr = int(toks[1])

if toks[0] == 'startSpinTargetItr':

startSpinTargetItr = int(toks[1])

if toks[0] == 'energyTola':

energyTola = float(toks[1])

if toks[0] == 'spinTola':

spinTola = float(toks[1])

if toks[0] == 'beta':

beta = float(toks[1])

if toks[0] == 'bondOrder':

bondOrder = str(toks[1]).strip()

if toks[0] == 'jValue':

jVal = -float(toks[1])

if toks[0] == 'restart':

if toks[1] == 'True':

restart = True

saveBasis = str(toks[2]).strip()

if toks[0] == 'Ms':

noOfMs = int(toks[1])

det = []

posibleDet = []

Ms = []

for j in range(noOfMs):

ms = int( toks[2 + j ])

up = int((nSite/2) + ms)

down = nSite - up

det0 = BitArray(down)

num = fact(nSite)/(fact(nSite - up) \* fact(up) )

for k in range(up):

det0 = det0 + '0b1'

det.append(det0)

Ms.append(ms)

posibleDet.append(num)

return model, nSite, subSpace, nStates, s2Target, maxItr, startSpinTargetItr, energyTola, spinTola, beta, jVal, det, Ms, posibleDet, bondOrder, outputfile, restart, saveBasis