import random

f=open("input.txt","r")

line1=list(f.readline().split(' '))

tbats=int(line1[0])

truns=int(line1[1])

batsman=[]

runs=[]

for i in range(tbats):

line=list(f.readline().split(' '))

batsman.append(line[0])

runs.append(int(line[1].strip()))

def population():

popu=[]

for i in range(10):

p=[0]\*tbats

for j in range(len(p)):

p[j]=random.randint(0,1)

popu.append(p)

return popu

fit=[]

fit2=[]

def fitness(x):

f=0

for index,k in enumerate(x):

if k==1:

f+=runs[index]

fit2.append(abs(f-truns))

fit.append(f)

return f

def select(population,fitness,fitness2):

s=fitness2.index(min(fitness2))

selected=population[s]

population.pop(s)

fitness.pop(s)

fitness2.pop(s)

return selected

def crossover(x,y):

l=len(x)

split=random.randint(0,l-1)

tempx1=x[:split+1]

tempx2=x[split+1:]

tempy1=y[:split+1]

tempy2=y[split+1:]

ch1=tempx1+tempy2

ch2=tempy1+tempx2

return ch1,ch2

def mutation(a,f):

m=a.copy()

l=len(m)

if f>truns:

while True:

x=random.randint(0,l-1)

if m[x]==1:

m[x]=0

break

else:

while True:

x=random.randint(0,l-1)

if m[x]==0:

m[x]=1

break

return m

def genetic():

p=population()

for i in p:

fitness(i)

for i in range(len(fit2)):

if fit2[i]==0:

return p[i]

for i in range(5000):

s1=select(p,fit,fit2)

s2=select(p,fit,fit2)

ch1,ch2=crossover(s1,s2)

p.append(ch1)

p.append(ch2)

f1=fitness(ch1)

f2=fitness(ch2)

if f1==truns:

return ch1

if f2==truns:

return ch2

cm1=mutation(ch1,f1)

cm2=mutation(ch2,f2)

p.append(cm1)

p.append(cm2)

f3=fitness(cm1)

f4=fitness(cm2)

if f3==truns:

return cm1

if f4==truns:

return cm2

return -1

print(batsman)

gen=genetic()

if gen==-1:

print(gen)

else:

for i in gen:

print(i,end="")