n=int(input())

route=[]

for i in range(0,n):

p=input()

route.append(p)

start='delhi'

cost=0

flag=0

rt=[]

#ind=[]

for i in range(0,n):

start='delhi'

cost=0

if start in route[i]:

r\_list=list(route[i].split(" "))

cost=int(r\_list[2])

start=r\_list[1]

s=r\_list[0]+">"+r\_list[1]

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

if(start!='chennai'):

if start in route[j]:

lst=list(route[j].split(" "))

cost+=int(lst[2])

start=lst[1]

s+=">"+lst[1]

if(lst[1]=='chennai'):

flag=1

s+=" "+str(cost)

rt.append(s)

flag=1

print(cost," ")

if flag==0:

print("not reachable")

else:

print("All possible combinations: ",rt)