(a)

int Catalan(int n)

{

if(n == 0)

return 1;

else

{

int cat = (4\*(n-1)+2)\*Catalan(n-1)/(n-1+2);

return cat;

}

}

(b)

假設n,V,B,v1…vn,b1…bn皆為正數

(n,V,B) =

S if( (n-1, V-vn, B-bn)== NS || (n-1, V-vn, B-bn)== S)

NS if( (n-1, V, B)== S || (n-1, V, B)== NS)

IMP else

(1,V,B) =

S if( v1 >= V && b1 <= B)

NS if( V==0)

IMP else

(c)

Path NetWork::getAugPath()

Vector<Path> Vpath(only include start)

While(not find end && Vpath is not empty)

get Vpath’s front

erase Vpath’s front

use Vpath’s front to get next paths

for each path check

if there is a cycle

erase it

else

continue

sort paths

for each paths

if it has the end point

return the path

else

push it into Vpath

return empty path

(d)

(i)

修改函數參數設定，傳進一終點一起點進函數，讓函數從傳進的起點為起點，傳進的終點為終點，把6種配對皆呼叫一次即可。

(ii)

在NetWork裡的getNext函數需修改為比較(1)舊路徑的capacity(2)新路徑的capacity(3)新的點的capacity，三者中取小的才是回傳的path的capacity