#include<stdio.h>

struct node

{

int dist[20];

int from[20];

}rt[10];

int main()

{

int dmat [20] [20];

int n, i, j, k, count=1;

printf ("\nEnter the number of nodes :\n");

scanf ("%d", &n);

printf ("\nEnter the cost matrix :\n");

for (i=1; i<=n; i++)

for (j=1; j<=n; j++)

{

scanf ("%d", &dmat[i][j]);

dmat [i][i] = 0;

rt[i].dist[j] = dmat[i][j];

rt[i].from[j] = j;

}

do

{

for (i=1; i<=n; i++)

for (j=1; j<=n; j++)

for (k=1; k<=n; k++)

if (rt[i].dist[j] > dmat[i][k] + rt[k].dist[j])

{

rt[i].dist[j] = rt[i].dist[k] + rt[k].dist[j];

rt[i].from[j] = k;

}

count++;

}while (count < n);

for (i=1; i<=n; i++)

{

printf ("\nDistance Table for router %c is \n", i+64);

for (j=1; j<=n; j++)

printf ("\tNode %d Via %d, Distance : %d\n", j, rt[i].from[j], rt[i].dist[j]);

}

return 0;

}