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Aim: Write a program to find distance vector algorithm to find suitable path for transmission

Algo:
(1) Start
(2) By convention, the dist from node to self is zero
(3) When a node is unreachable the distance is accepted as 999
(3) accept the input distance from the user (dm[][]) that represents the distance between each node in the network
(4) Store the distance b/w nodes in a suitable variable
(5) Calculate minimum distance b/w nodes by iterating

Program →

```
#include <iostream.h>
#include <iostream.h>
#define MAX 10
int n;

class routes {
    char adj_new[MAX], adj_old[MAX];
    int table_new[MAX], table_old[MAX];

public:
    routes(){
    for(int i=0; i<MAX; i++) table_old[i]=
    table_new[i]=99;
    }
void upd(){
for(int i=0; i<n; i++) {
  adj_old[i] = adj_new[i];
  table_old[i]= table_new[i];
}}
```

```
int equal (){
  for(int i=0, i<n; i++)
if(table_old[i]!=table_new[i] || adj_
  new[i]!=adj_old[i] return 0;
  return 1;
}

void input (int j){
cout<<"enter 1 if corresponding routers are
  adjacent to router "
<<(char)('A'+j)<<"else else 99: "<<
endl<<"
for(int i=0; i<n; i++)
  if(i!=j) cout<<((char)('A'+i)<<" ";
cout<<"\n enter matrix: ";
  for(i=0; i<n; i++){
    if(i==j)
    table_new[i]=0;
    else
    cin>>table_new[i];
  adj_new[i]=char('A'+i);
  }
  cout<<endl
}
void display(){
cout<<"\n destination routers: ";
for(int i=0; i<n; i++) cout<<((char)('A'+i)<<"
cout<<"\n outgoing line: ";
for(i=0; i<n; i++) cout<<adj_new[i]
<<" ";
cout<<"\n hop count.
for(i=0; i<n; i++) cout<<table_new[i]<<"
}
```

```
void build(int j){
  for(int i=0; i<n; i++)
  for(int k=0; (i!=j)&&(k<n); k++)
  if(table.ne[i]!=999)
if((table.new[i]+r[i].table.new[k])<
  table.new[k])){
table.new[k]=table.new[i]+r[i].table.new[k];
adj.new[k]=char('A'+i);
  }}} r[10];

void build_table(){
   int i=0, j=0;
   while (i!=n){
  for(i=j; i<n; i++){
   r[i].copy();
    r[i].build(i);
  }
 for(i=0; i<n; i++)
 if(!r[i].equal()){
   j=i;
   break;
 }}}
void main(){
 clrscr();
cout<<"enter no. of routers(<="<<MAX<<"): "; cin>>n;
for(int i=0; i<n; i++) r[i].input[i];
build_table();
for(i=0; i<n; i++){
cout<<"router table entries "<<char('A'+i)<<" -"
  r[i].display();
 cout<<endl<<endl;
} getch(); }
```