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

code:-

```
#include <bits/stdc++.h>
using namespace std;
#define MAX 10
int n;
class router{
char adj_new[MAX], adj_old[MAX];
int table_new[MAX], table_old[MAX];
  public:
     router(){
for(int i=0; i<MAX; i++) table_old[i]=
table_new[i]=99;
}
int equal() {
for(int i=0; i<n; i++)
if(table_old[i]!=table_new[i]||
  adj_new[i]!=adj_old[i]) return 0;
}
void input(int j) {
  cout<<"Enter 1 for corresponding
router is adjcant to router"
 <<(char)('A'+j)<<" else 99:"<<endl<<
 cout<<"enter matrix";
```

```
for (int i=0; i<n; i++){
   if (i==j)
      table_new[i]=0;
else
     cin>>table_new[i];
   adj_new[i]= (char)('A'+1);
  }
  cout<<end;
  }
void display(){
  cout<<"\n dest router: ";
for(int i=0; i<n; i++);
  cout<<" \n out line";
for (int i=0; i<n; i++) cout<<adj[i];
   cout<<"\n hop count";
for (int i=0; i<n; i++) cout<< table[i]<<;
  }

void build_table(){
 int i=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;
     }
  }
}
```

```
int main(){
 cout<<"enter no of routers(<"<<MAX<<"):";
 cin>>n;
 for(int i=0; i<n; i++) r[i].input(i);
 build();
 for(i=0; i<n; i++){
  cout<<" router table entries for
 router "<<(char)('A'+i)<<":-";
  r[i].display();
  cout<<endl<<endl;
  }
}
```

OUTPUT:-

```
enter number of routers(<10):5
enter 1 if router is adjacent to A else 99:
 B C D E
 enter matrix: 1 1 99 99

enter 1 if router is adjacent to B else 99:
A C D E
A B C E
enter matrix: 99 99 1 99

enter 1 if router is adjacent to E else 99:
 A B C D
enter matrix : 99 99 1 99
```

router table entries for A:-
Dest router: ABCDE
outgoing line: ABCDE
Hop count: 0 1 1 99 99

router table entries for B:-
dest router: ABCDE
outgoing line: AB CDE
Hop count: 1 0 99 99 99

router table entries for router C:-
dest router :- ABC DE
out line:- A B CDE
Hop count : 1 99 0 1 1

router table entries for router D:-
dest router: A B CDE
out line:- A B CDE
hop count: 99 99 1 0 99

router table entries for router E:-
dest router : A B CDE
out line : ABCDE
hop count : 99 99 1 99 0