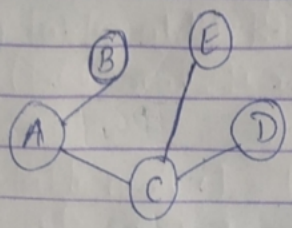
Expt:7 : Dist vector Algo to find suitable path for transmission.



Topology.

X	A	B	C	D	E
A	0	1	1	2	2
B	1	0	2		
C			0		
D				0	
E					0

→ ~~# define <conio.h>~~
~~# define~~

⟹
```
# include <conio.h>
# include <iostream.h>
# 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_old[i] = table_new[i] = 99;
    }
  void copy(){
    for(int i=0; i<MAX; 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 the corresponding router is adjsent
    to router " << (char)('A'+j) << " else enter 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 Router:";
  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_old [i]!=99)
      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[i0];

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 the 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 for router"<<(char)('A'+i)<<
        -"; r[i]. display ();
    cout << endl <<endl;
} getch();
```