

## Distance Vector Algo

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```
#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 < 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 the corresponding router is adj. to  
router" << (char)('A' + j) << "else enter 99:" << endl << "
```

```
for (int i = 0; i < n; i++)
```

```
{
    if (i != j)
```

```
        cout << (char)('A' + j) << " ";
```

```
        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 << "In Destination Router : ";
    for (int i=0; i<n; i++)
    {
        cout << (char) ('A'+i) << " ";
    }
    cout << "In Outgoing line : ";
    for (int i=0; i<n; i++)
    {
        cout << adj-new[i] << " ";
    }
    cout << "In 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] + h[i] < table-new[k] && table-new[k] != 99))
                {
                    table-new[k] = table-new[i] + h[i];
                    adj-new[k] = (char) ('A'+i);
                }
            }
        }
    }
}
}
} h[10];

```



```

void build-table()
{
    int i=0, j=0;
    while(i!=n)
    {
        for(i=j; i<n; i++)
        {
            A[i].copy();
            A[i].build();
        }
        for(i=0; i<n; i++)
            if(!A[i].equal())
            {
                j=i;
                break;
            }
    }
}

```

```

void main()
{
    check();
    cout << "Enter the number of routers (<<MAX<<): ";
    cin >> n;
    for(int i=0; i<n; i++)
    {
        A[i].input(i);
        build-table();
    }

    for(i=0; i<n; i++)
    {
        cout << "Router Table entries for router " << (char)(A'+i) <<
            " :- ";
        A[i].display();
        cout << endl << endl;
    }

    getch();
}

```