

Cycle-2

Program-2

Date / /

Page No.

Distance Vector Algorithm.

```
#include <iostream>
```

```
#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_new[i] = 99;
```

```
}
```

```
void copy()
```

```
{
```

```
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)
```

```
{
```

```
cout << "Enter 1 if the corresponding router is  
adjacent to the router"
```

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

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



```

    cout << (char)('A'+i) << " ";
    cout << " 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 << "Destination Router",
    for(int i=0; i<n; i++)
        cout << (char)('A'+i) << " ";
    cout << " Outgoing line: ";
    for(i=0; i<n; i++)
        cout << adj_new[i] << " ";
    cout << " Hop count: ";
    for(i=0; i<n; i++)
        cout << table_new[i] << " ";
}

```

```

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()
{
    close();
    cout << "Enter no. of routers ";
    cin >> n;
    for (int i=0; i<n; i++)
        r[i].input(i);
    for (i=0; i<n; i++)
    {
        cout << "Router table entries " << (char) ("A" + i) << " ";
        r[i].display();
        cout << endl << endl;
    }
    getch();
}

```