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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<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;
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        else
        {
            return 1
        }
    }
}

void input (int j)
{
    cout << " Enter 1 if the corresponding router is
    adjacent 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 metric: ";
    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: ";
```

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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[j]+r[j].table_new[k])<table_new[k])
    {
        table_new[k]=table_new[j]+r[j].table_
        adj_new[k]=(char)('A'+i); new[k];
    }
    }
    r[0];

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())
```

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                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 for
                router " << (char)('A'+i) << ":
            r[i].display();
            cout << endl << endl;

        }
    getch();
}
```