

```
// Me cung so. tim duong di cua robot  
#include <stdio.h>
```

```
#define MAXN 1000  
#define NO_EDGE 0  
#define INFINITY 9999999
```

```
// Graph
```

```
typedef struct {  
    int n;  
    int L[MAXN][MAXN];  
} Graph;
```

```
void init_graph(Graph* G, int n) {  
    G->n = n;
```

```
  
    int i, j;  
    for (i = 1; i <= n; ++i) {  
        for (j = 1; j <= n; ++j) {  
            G->L[i][j] = NO_EDGE;  
        }  
    }  
}
```

```
void add_edge(Graph* G, int x, int y, int w) {  
    G->L[x][y] = w;  
}
```

```
int mark[MAXN];  
int pi[MAXN];  
int p[MAXN];
```

```
void Dijkstra(Graph* G, int s) {  
    int i, j, it;  
    for (i = 1; i <= G->n; ++i) {  
        pi[i] = INFINITY;  
        mark[i] = 0;  
    }  
  
    pi[s] = 0;  
    p[s] = -1;  
  
    for (it = 1; it < G->n; ++it) {
```

```

int min_pi = INFINITY;
for (j = 1; j <= G->n; ++j) {
    if (mark[j] == 0 && pi[j] < min_pi) {
        min_pi = pi[j];
        i = j;
    }
}

mark[i] = 1;
for (j = 1; j <= G->n; ++j) {
    if (G->L[i][j] != NO_EDGE && mark[j] == 0) {
        if (pi[i] + G->L[i][j] < pi[j]) {
            pi[j] = pi[i] + G->L[i][j];
            p[j] = i;
        }
    }
}
}
}
}

```

```

int main() {
    Graph G;
    int n, m, u, i, j, s, t, x;
    scanf("%d%d", &n, &m);
    init_graph(&G, n * m);
    int a[n + 1][m + 1];

    for (i = 0; i < n; i++) {
        for (j = 0; j < m; ++j) {
            scanf("%d", &x);
            a[i][j] = x;
        }
    }

    int di[] = {-1, 1, 0, 0};
    int dj[] = {0, 0, -1, 1};

    for (u = 1; u <= n * m; ++u) {
        int i = (u - 1) / m;
        int j = (u - 1) % m;
        int k, ii, jj;
        for (k = 0; k < 4; ++k) {
            ii = i + di[k];

```

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        jj = j + dj[k];
        int v;
        if ((ii >= 0) && (ii < n) && (jj >= 0) && (jj < m)) {
            v = ii * m + jj + 1;
            add_edge(&G, u, v, a[ii][jj]);
        }
    }
}

Dijkstra(&G, 1);

for (int i = 1; i <= n * m; ++i) {
    for (int j = 1; j <= n * m; ++j) {
    }
}

printf("%d", pi[n * m] + a[0][0]);
return 0;
}

```