#include <stdio.h>

#include <string.h>

#define inf 1000000000

int numv[1010];

int g[110][110];

int d[21][110][110];

int dp[2][110];

int main()

{

freopen("relays.in", "r", stdin);

freopen("relays.out", "w", stdout);

int len, n, m, s, e, p, q, l, i, j, k;

scanf("%d%d%d%d", &len, &m, &s, &e);

memset(numv, -1, sizeof(numv));

n = 0;

for (i = 0; i < m; i++)

{

scanf("%d%d%d", &l, &p, &q);

if (numv[p] != -1)

p = numv[p];

else

p = numv[p] = n++;

if (numv[q] != -1)

q = numv[q];

else

q = numv[q] = n++;

if (g[p][q] == 0 || g[p][q] > l)

g[p][q] = g[q][p] = l;

}

s = numv[s];

e = numv[e];

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

for (j = 0; j < n; j++)

if (g[i][j] == 0)

g[i][j] = inf;

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

for (j = 0; j < n; j++)

d[0][i][j] = g[i][j];

for (l = 1; (1<<l) <= len; l++)

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

for (j = 0; j < n; j++)

d[l][i][j] = inf;

for (l = 1; (1<<l) <= len; l++)

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

for (j = 0; j < n; j++)

for (k = 0; k < n; k++)

if (d[l][i][j] > d[l-1][i][k]+d[l-1][k][j])

d[l][i][j] = d[l-1][i][k]+d[l-1][k][j];

k = 0;

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

if (i == s)

dp[k][i] = 0;

else

dp[k][i] = inf;

for (l = 0; (1<<l) <= len; l++)

if ((len>>l)&1)

{

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

dp[k^1][i] = inf;

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

for (j = 0; j < n; j++)

if (dp[k^1][j] > dp[k][i]+d[l][i][j])

dp[k^1][j] = dp[k][i]+d[l][i][j];

k ^= 1;

}

printf("%d\n", dp[k][e]);

return 0;

}