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#include <iostream>
#include <cstdlib>
#include <conio.h>
#include <cmath>

typedef char* Peg;
void move(Peg A, Peg B);
void transfer(size_t N, Peg A, Peg B,
Peg C);
void get_disk_num(int &iNum);

int main()
{
    while(1)
    {
        std::cout << "\t\t\tHanoi
Towers Puzzle Solver" << std::endl <<
std::endl;
        std::cout << "Enter number of
disc on the first peg (enter -1 to
quit): ";
        int iDiskNum, iStepNum;
        get_disk_num(iDiskNum);
        if(iDiskNum == -1)
        {
            std::cout << "hope you
enjoyed using these program!" <<
std::endl;
            break;
        }
    }
}

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        else
        {
            iStepNum = pow(2, iDiskNum)
- 1;
            std::cout << "the shortest
solution can be reach in " << iStepNum
<< " steps" << std::endl;
            std::cout << "press any key
to show the solution...";
            getch();
            std::cout << std::endl;
            transfer(iDiskNum, "Peg1",
"Peg2", "Peg3");
            system("pause");
            system("cls");
        }
    }
    return 0;
}

// tedade jabejayi diskha
void move(Peg A, Peg B)
{
    std::cout << "move top most disc
from " << A << " to " << B <<
std::endl;
}

// chegonegiye harekate diskhara
namayesh midahad

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void transfer(size_t N, Peg A, Peg B,
Peg C)
{
    if(N > 0)
    {
        // enteghale avalin N - 1 disk
be "B"
        transfer(N - 1, A, C, B);

        // enteghale akharin disk be
"C"
        move(A, C);

        // enteghale dickhaye "B"
be"C",
        transfer(N - 1, B, A, C);
    }
}

void get_disk_num(int &iNum)
{
    std::cin >> iNum;
    if(iNum != -1 && iNum < 1)
    {
        std::cout << "please notice
that the number of disc needs to be an
integer bigger than 0" << std::endl;
        std::cout << "number of disc on
the first peg: ";
        get_disk_num(iNum);
    }
}

```

}