#include<iostream>

#include<math.h>

#include<stdio.h>

using namespace std;

//function to make the first hidden stone

int HideStone1(int x)

{

int y;

int e;

int d;

e = x % 2;

d = x % 3;

if (e == 0)

{

if (d == 0)

{

y = 1;

}

else

{

y = 3;

}

}

if (d == 0)

{

if (e == 0)

{

y = 1;

}

else

{

y = 2;

}

}

if (e != 0)

{

if (d != 0)

{

y = 1;

}

}

return y;

}

int Hidestone2(int x) //chaos inducer

{

int y;

int a;

int b;

int c;

int d;

int e;

a = x \* 7 \* 13 \* 17;

b = a / 73;

c = b + a;

e = c % 2;

d = c % 3;

if (e == 0)

{

if (d == 0)

{

y = 1;

}

else

{

y = 3;

}

}

if (d == 0)

{

if (e == 0)

{

y = 1;

}

else

{

y = 2;

}

}

if (e != 0)

{

if (d != 0)

{

y = 1;

}

}

return y;

}

//to verify harrys answer and the door

int Verify(int x, int y)

{

int z;

if (x == y)

{

z = 1;

}

else

{

z = 0;

}

return z;

}

//opening next door

int Hint(int x,int y,int z) //x is the input from Verify function, y is harrys chosen door & z is the door of the stone

{

int a;

if (x == 1)

{

if (y == 1)

{

a = 3;

}

if (y == 2)

{

a = 1;

}

else

{

a = 2;

}

}

else

{

if (y == 1 && z == 2)

{

a = 3;

}

if (y == 1 && z == 3)

{

a = 2;

}

if (y == 2 && z == 1)

{

a = 3;

}

if (y == 2 && z == 3)

{

a = 1;

}

if (y == 3 && z == 1)

{

a = 2;

}

if(y == 3 && z == 2)

{

a = 1;

}

}

return a;

}

int Rechoice(int x,int y)//function for harry's choice and his new choice

{

int a;

if (x == y)

{

a = 1;

}

else

{

a = 0;

}

return a;

}

int loop(int x, int y)//this function in used in determining that the score updates only when harry wins the stone

{

int a;

if (x == y)

{

a = 0;

}

if (x != y)

{

a = 1;

}

return a;

}

int main()

{

int HC;

int CN=1;

int HSD;

int a;

int OD;

int HNC;

int b;

int sw=0;

int st=0;

int c;

int d;

int n;

cout << "The winter christmas holidays had just begun. It was quite a pleasant day at Hogwarts. Hermione" << endl;

cout << "had left hogwarts for holidays and Ron and Harry were just having a match of chess. Thats when" << endl;

cout << "I met them for the first time. One night I told Harry what fluffy was hiding behind the closed doors " << endl;

cout << "we took the adventure upon ourselves to find the Philosophers Stone. He went through that door and " << endl;

cout << " somehow found out a new cave. A strange new light entered the cave. an angle was atanding in front" << endl;

cout << "of us. She gave us 3 choices of finding the philosophers stone which was behind one of it." << endl;

cout << "she asked us our choice" << endl;

d = HideStone1(CN);

HSD=Hidestone2(d); //the stone is hidden according to the number of the choice number.

//but is almost impossible to determine which one due to the 3 body principle of chaos theory

even:

cout << "Enter Harrys choice:" << endl; //harry gives his choice

cin >> HC;

if (HC > 3)

{

cout << "this door doesnt exist... taking u a few minutes earlier" << endl;

goto even;

}

else

goto odd;

odd:

a = Verify(HC, HSD);

OD = Hint(a, HC, HSD);

cout << "The angle says...i'll give u a hint...i'll tell u behind which door the stone isnt " << endl;

cout << "The opened door is:" << OD << endl;

cout << "Enter Harrys next choice:" << endl;

cin >> HNC;

if (HNC == OD)

{

cout << "This Door is already opened. Choose another door:" << endl;

}

else

{

b=Rechoice(HNC, HSD); //verifying new choice and earlier hidden door

if(b==1)

{

cout << "Harry got the Philosophers stone" << endl;

}

else

{

cout << "Harry failed" << endl;

}

}

CN++;

cout << "how many turns do u want the loop to be" << endl;

cin>>n

cout << " The angle says: You have been in a time loop. You will have a 100 tries to free yourself." << endl;

cout << "choose the wisest strategy to get the Philosophers stone and finally use it in the last one." << endl;

for (CN = 2; CN < n; CN++) //same code just for n number of times

{

d = HideStone1(CN);

HSD = HideStone1(d);

cout << "Enter Harry's choice:" << endl;

eve:

cin >> HC;

if (HC > 3)

{

cout << "This door doesnt exist... taking you a few moments earlier..." << endl;

goto eve;

}

else

goto od;

od:

a = Verify(HC, HSD);

OD = Hint(a, HC, HSD);

cout << "The opened door is:" << OD << endl;

cout << "Enter Harrys next choice:" << endl;

cin >> HNC;

b = Rechoice(HNC, HSD);

{

if (HNC == OD)

{

cout << "This Door is already opened. Choose another door:" << endl;

}

else

{

if (b == 1)

{

cout << "Harry got the Philosophers stone" << endl;

}

else

{

cout << "Harry failed" << endl;

}

}

}

c = loop(HC, HNC);

if (b + c == 2)

{

sw++;

}

if (b + c == 1)

{

st++;

}

cout << "Switch Strategy score = " << sw << endl;

cout << "Stay Strategy score = " << st << endl;

}

return 0;

}