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Report: HW2

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Description:

This program is a game called Master Mind : a guess number game.

Use do-while迴圈檢查產生的題目是否有重複 若有則重新產生

用match1.2檢查這個數字是否已經算為H，若是，則不能拿來算x。

I have learn:

更熟悉||(or)、&&(and)的用法

用short取代int節省空間

迴圈很容易變無限迴圈……

The bug I met:

在printf函數的讀取位置前加了’&’

在while(x==1)時，迴圈內if... x=1 忘記else .... x=0 導致x一旦變成1 就成了無限迴圈

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Code:

#include <stdio.h>

#include <stdlib.h>

#include <time.h>

int main(int argc, char\* argv[])

{

int N=0 , P=0 , H=0 , X=0;

int i=0,j=0,k=0;

int x=0;

N = \*argv[1] - '0';

P = \*argv[2] - '0';

if(N>9||N<1||P>9||P<1||N<P) //檢查N、P範圍

{

printf("the input should make 1<=N<=9 , 1<=P<=9 , N>=P\n");

return 0;

system("PAUSE");

}

short answer[10]; //儲存題目

short input[10]; //儲存猜的數字

short match1[10]; //檢查是否被算過

short match2[10]; //檢查是否被算過

srand((unsigned)time(NULL));

do{

x=0;

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

answer[i] = rand()% N + 1;

for(j=0;j<P-1;j++)

for(k=j+1;k<P;k++)

if(answer[j]==answer[k])

x=1;

}while(x==1); //產生題目，確保不重複。

printf("answer=");

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

printf("%d",answer[i]);

printf("\n");

do{

printf("Guess %d number between 1-%d ",P,N);

for(i=0;i<P;i++){

match1[i]=0;

match2[i]=0;

scanf("%1d",&input[i]);}

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

if(input[i]>N||input[i]<1) //檢查input範圍

{printf("each input number should >=1 & <=%d\n",N);

return 0;}

H=X=0;

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

if(input[i]==answer[i]){ //位置與數字相同H++

H++;

match1[i]++;

match2[i]++; //讓match++表示此數字被取用過

}

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

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

//位置不同數字相同X++ if(input[i]==answer[j]&&match1[i]==0&&match2[j]==0){ X++;

match1[i]++;

match2[j]++;}

printf("%dH%dX\n",H,X);

}while(H!=P);

printf("Congratulation!! The answer is right\n");

return 0;

}

Compilation:

gcc -o hw2 hw2.c

Execution:

./hw2 [the max number want to guess] [the length of number]

Output:

C14031162@c-2015-1:~/hw2> ./hw2 9 4

answer=5162

Guess 4 number between 1-9 1123

1H1X

Guess 4 number between 1-9 5162

4H0X

Congratulation!! The answer is right.