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Report: hw2

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Description:

How do you finish this homework?

隨機產生答案並將其存入answer[]

將輸入的猜測存入guess[]

比較answer[]與guess[]得出H與X

H等於位置數時結束遊戲

What did you learned from this homework?

如何產生隨機數

如何將輸入的訊息轉換成自己需要的資訊

Did you do or write something special for bonus?

...etc.)

輸入answer可直接查看答案

輸入exit可直接結束遊戲

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

#include <stdio.h>

#include <stdlib.h>

#include <time.h>

#include <ctype.h>

#include <string.h>

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

{

int n = \*argv[1] - 48, p = \*argv[2] - 48;

int answer[p], guess[p];

int h\_count, x\_count, a\_count[n + 1], g\_count[n + 1];

char temp[50];

int i, j;

if(n < p){

printf("\nINVALID INPUT\n\n\n");

return 0;

}

srand(time(0));

//uses time as the seed of rand()

//does not generate the same set of rand()

printf("\n\n\n");

printf("-------------MASTERMIND-------------\n");

printf("------TYPE \"answer\" FOR ANSWER------\n");

printf("------TYPE \"exit\" TO... EXIT------\n\n");

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

do{

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

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

if (answer[i] == answer[j]){

answer[i] = 0;

break;

}

}

}while(answer[i] == 0);

}

//generates the answer randomly

//numbers do not repeat

while(h\_count != p){

h\_count = 0;

x\_count = 0;

printf("GUESS %d NUMBERS FROM 1 TO %d : \n", p, n);

scanf("%s", &temp);

//store the user's guess in the temp[]

if(strcmp("answer", temp) == 0){

printf("\n");

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

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

printf("\n\n\n");

continue;

}

//provides a way to get the answer directly

if(strcmp("exit", temp) == 0)

break;

//provides a way to exit the game directly

for(i = 0, j = 0; i < strlen(temp); i++){

if(isdigit(temp[i])){

guess[j] = temp[i] - 48;

j++;

}

}

if(j < p){

printf("\nNOT ENOUGH DIGITS\n\n\n");

continue;

}

if(j > p){

printf("\nTOO MANY DIGITS\n\n\n");

continue;

}

//scans the digits in the temp[]

//put the digits in the guess[]

for(i = 1; i <= n; i++){

a\_count[i] = 0;

g\_count[i] = 0;

for(j = 0; j < p; j++){

if(i == answer[j])

a\_count[i]++;

if(i == guess[j])

g\_count[i]++;

}

if(a\_count[i] > g\_count[i])

x\_count += g\_count[i];

else

x\_count += a\_count[i];

}

//calculates the number of X

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

if(guess[i] == answer[i])

h\_count++;

}

//calculates the number of H

x\_count -= h\_count;

printf("\n%3dH%3dX\n\n\n", h\_count, x\_count);

}

//the main part of the game

if(h\_count == p)

printf("===========CONGRATULATION===========\n\n\n");

else

printf("\n\n=========THANKS FOR PLAYING=========\n\n\n");

return 0;

}

Compilation:

gcc -o hw2 hw2.c

Execution:

./hw2 (N) (P)

Output:

F74046022@c-2015-2:~/hw2> ./hw2 7 4

-------------MASTERMIND-------------

------TYPE "answer" FOR ANSWER------

------TYPE "exit" TO... EXIT------

GUESS 4 NUMBERS FROM 1 TO 7 :

1234

2H 2X

GUESS 4 NUMBERS FROM 1 TO 7 :

2345

1H 2X

GUESS 4 NUMBERS FROM 1 TO 7 :

answer

1324

GUESS 4 NUMBERS FROM 1 TO 7 :

1324

4H 0X

===========CONGRATULATION===========