
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=====
```