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Report: HW2

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Description:

我從這份作業學到如何用scnaf讀取資料。另外自己也有去爬文發現scanf讀資料會從buffer中讀取，所以在for迴圈中放scanf只需一次輸入全部即可，因為輸入的資料會存在buffer中。

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Code:

#include<stdio.h>

#include<stdlib.h>

// input function

int SetData(int data[],const char \*choice,int P){

int i;

int scf;

printf("%s",choice);

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

scanf("%d",&data[i]);

}

while ((getchar()) != '\n');// clear the buffer

return 1;

}

// Check if input is legal or not

int Check(int data[],int H,int P){

int i = 0;

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

if(data[i] < 1 || data[i] > H)

return 0; // if it is illegal the function return 0

}

return 1;// return 1 finally , means that all number is legal

}

// array initialize

void Reset(int data[],int size){

int i = 0;

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

data[i] = 0;

}

}

// compute h and x

void HX(int ans[],int P){

int ans\_match[P];

int guess[P];

// ans\_match and guess\_match are set to record match to avoid computing in "x" again.

int guess\_match[P];

int h,x;

int i = 0,j = 0;

do{

h = 0;

x = 0;

Reset(ans\_match,P); // reset ans\_match

Reset(guess\_match,P);// reset guess\_match

SetData(guess,"guess:",P);//input guess

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

if(guess[i] == ans[i]){

// if guess[i] match to ans[i] ans\_match[i] and guess\_match[i] are assigned 1

// this assignment is to avoid computing in "x" again

ans\_match[i]= guess\_match[i] = 1;

h++;

}

}

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

if(guess\_match[i] != 1){

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

if(ans[j] == guess[i]&&ans\_match[j] != 1)

x++;

}

}

}

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

}while(h!=P);// do until h == P

}

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

{

int N = atoi(argv[1]);

int P = atoi(argv[2]);

printf("You set N=%d, P=%d\n",N,P);

int ans[100];

while(!SetData(ans,"ans:",P)||!Check(ans,N,P))

printf("The answer is illegal, please reset the answer.\n");

HX(ans,P);

return 0;

}

Compilation:

gcc -o hw2 hw2.c

Execution:

./hw2 5 5

Output:

You set N=5, P=5

ans:0 2 3 7 3

The answer is illegal, please reset the answer.

ans:2 3 4 5 5

guess:1 2 3 4 5

1H3X

guess:4 5 4 5 4

2H1X

guess:1 4 3 5 5

2H2X

guess:2 4 3 5 5

3H2X

guess:2 3 4 5 5

5H0X