Week-05-01

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Simple Chessboard

Problem Statement:

Write a program that prints a simple chessboard.

Input format:
The first line contains the number of inputs T.
The lines after that contain a different value for size of the chessboard

Output format:
Print a chessboard of dimensions size * size. Print
W for white spaces and B for black spaces.

Sample Input:
2
3
5

Sample Output:
WBW
BWB
WBW
WBWBW
BWBWB
WBWBW
BWBWB
WBWBW

Program:

```c
#include <stdio.h>

int main(){
    int T,n;
    scanf("%d",&T);
    while(T--){
        scanf("%d",&n);
        for (int i = 0;i<n;i++){
            for(int j = 0; j<n;j++){
                ((i+j)%2==0)?printf("W"):printf("B");

            }
            printf("\n");
        }
    }
    return 0;
}
```

	Input	Expected	Got	
✓	2 3 5	WBW BWB WBW WBWBW BWBWB WBWBW BWBWB WBWBW	WBW BWB WBW WBWBW BWBWB WBWBW BWBWB WBWBW	✓

Passed all tests! ✓

Print Our Own Chessboard

Problem Statement:

Let's print a chessboard!

Write a program that takes input:
The first line contains T, the number of test cases
Each test case contains an integer N and also the starting character of the chessboard

Output Format
Print the chessboard as per the given examples

Sample Input:
2
2 W
3 B

Sample Output: WB
BW
BWB
WBW
BWB

Program:

```c
#include <stdio.h>

int main(){
    int T;
    scanf("%d",&T);

    while (T--){
        int n;
        char startChar;
        scanf("%d %c",&n,&startChar);

        for (int i = 0; i < n;i++){
            for (int j = 0; j<n;j++){
                printf("%c",((i+j)%2==0)?startChar:(startChar=='W'?'B':'W'));
            }
            printf("\n");
        }
    }
    return 0;
}
```

	Input	Expected	Got	
✓	2 2 W 3 B	WB BW BWB WBW BWB	WB BW BWB WBW BWB	✓

Passed all tests! ✓

Pattern Printing

Problem Statement:

Decode the logic and print the Pattern that corresponds to given input.

If N= 3 then pattern will be:
10203010011012
**4050809
****607
If N= 4, then pattern will be:
1020304017018019020
**50607014015016
****809012013
******10011

Constraints: 2 <= N <= 100 Input
Format
First line contains T, the number of test cases, each test case contains a single integer N

Output Format
First line print Case #i where i is the test case number, In the subsequent line, print the pattern

Sample Input
3
3
4
5

Sample Output
Case #1
10203010011012
**4050809
****607
Case #2
1020304017018019020
**50607014015016
****809012013
******10011
Case #3
10203040502602702802 9030
**6070809022023024025
****10011012019020021
******13014017018
********15016

Program:

```c
int sum(int n){
    return n*(n-1)/2;
}

void pattern(int N){
    int Val=0,Pthree=0,cnt=0,initial=-1;
    char s[100] = "**";

    for(int i = 0;i < N;i++){
        cnt = 0;

        if(i>0){
            printf("%s",s);
            strcat(s,"**");

        }
        for (int j = i;j<N;j++){
            if(i>0){
                cnt+=1;
            }
            Val += 1;
            printf("%d0",Val);
        }
        if(i==0){
            int Sumbeforelast = sum(Val)*2;
            Pthree = Val + Sumbeforelast + 1;
            initial = Pthree;
        }
        initial = initial - cnt;
        Pthree = initial;

        for(int k =i;k<N;k++){
            printf("%d",Pthree);
            Pthree += 1;
            if (k != N-1)
            printf("0");
        }
        printf("\n");
    }
}

int main(){
    int T,N;
    scanf("%d",&T);
    for(int i = 1:i<=T:i++){
        scanf("%d",&N);
        printf("Case #%d\n",i);
        pattern(N);
    }
    return 0;
}
```

	Input	Expected	Got	
✓	3 3 4 5	Case #1 10203010011012 **4050809 ****607 Case #2 10203040170180190 20 **50607014015016 ****809012013 ******10011 Case #3 10203040502602702802 9030 **6070809022023024025 ****10011012019020021 ******13014017018 ********15016	Case #1 10203010011012 **4050809 ****607 Case #2 10203040170180190 20 **50607014015016 ****809012013 ******10011 Case #3 10203040502602702802 9030 **6070809022023024025 ****10011012019020021 ******13014017018 ********15016	✓

Passed all tests! ✓