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Week-05-Nested Loops - while and for, Jumps in Loops

Week-05-01-Practice Session-Coding

Question **1**

Correct

Marked out of 3.00

Flag question

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 values for size of the chessboard

Output format:

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

Input:

2

3

5

Output:

WBW

BWB

WBW

WBWBW

BWBWB

WBWBW

BWBWB

WBWBW

Source code

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>

int main(){
    int t,arr[100];

    scanf("%d",&t);
    for(int i=0;i<t;i++){
        scanf("%d",&arr[i]);
    }

    for(int z=0;z<t;z++){
        for(int j=0;j<arr[z];j++){
            for(int i=0;i<arr[z];i++){
                if((i+j)%2==0){
                    printf("W");
                }
                else{
                    printf("B");
                }
            }
            printf("\n");
        }
    }
    return 0;
}
```

Result

	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! ✓

Question **2**

Correct

Marked out of 5.00

Flag question

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 / Output

Input:

2

2 W

3 B

Output:

WB

BW

BWB

WBW

BWB

Source code

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>

int main(){
    int t,arr[100];
    char ch[100];
    scanf("%d",&t);
    for(int i=0;i<t;i++){
        scanf("%d %c",&arr[i],&ch[i]);
    }
    for(int z=0;z<t;z++){
        for(int j=0;j<arr[z];j++){
            for(int i=0;i<arr[z];i++){
                if((i+j)%2==0){
                    printf("%c",ch[z]);
                }
                else{
                    if(z>0){
                        printf("%c",ch[z-1]);
                    }
                    else{
                        printf("%c",ch[z+1]);
                    }
                }
            }
            printf("\n");
        }
    }
    return 0;
}
```

Result

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

Passed all tests! ✓

Question **3**

Correct

Marked out of 7.00

Flag question

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:

10203040170180190 20
**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

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

Source code

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>

int main(){
    int n;
    scanf("%d",&n);
    for(int i=1;i<=n;i++){
        int a;
        scanf("%d",&a);
        int l=1,s=a,t=(a*(a+1))-a+1;
        printf("Case #%d\n",i);
        for(int j=0;j<a;j++){
            int k=2*j,t1=t;
            while(k>0){
                printf("%c",'*');
                k-=1;
            }
            for(int p=0;p<s;p++){
                printf("%d",l);
                l+=1;
                printf("%d",0);
            }
            for(int q=0;q<s;q++){
                printf("%d",t1);
                t1+=1;
                if(q==(s-1)){
                    break;
                }
                printf("%d",0);
            }
            s-=1;
            t-=s;
            printf("\n");
        }
    }
    return 0;
}
```

Result

	Input	Expected	Got	
✓	3 3 4 5	Case #1 102030100110 12 **4050809 ****607 Case #2 10203040170180 19020 **50607014015016 ****809012013 ******10011 Case #3 10203040502602702802 9030 **607080902202302 4025 ****100110120190200 21 ******13014017018 ********15016	Case #1 102030100110 12 **4050809 ****607 Case #2 10203040170180 19020 **50607014015016 ****809012013 ******10011 Case #3 10203040502602702802 9030 **607080902202302 4025 ****100110120190200 21 ******13014017018 ********15016	✓

Passed all tests! ✓