

Week 5 – 1:

--Nested Loops – while and for , Jumps Loops

ROLL NO.:241501225

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Q1) 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

Code:

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int n,a;
5     scanf("%d",&n);
6     while(n!=0)
7     {
8         scanf("%d",&a);
9         for(int i=0;i<a;i++)
10        {
11            for(int j=0;j<a;j++)
12            {
13                if((i+j)%2==0)
14                    printf("W");
15                else
16                    printf("B");
17            }
18            printf("\n");
19        }
20        n--;
21    }
22 }
23
24
```

OUTPUT:

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

Passed all tests! ✓

Q2) 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

code

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int n,a;
5     char ch;
6     scanf("%d",&n);
7     while(n!=0)
8     {
9         scanf("%d %c",&a,&ch);
10        for(int i=0;i<a;i++)
11        {
12            for(int j=0;j<a;j++)
13            {
14                if(ch=='W')
15                {
16                    if((i+j)%2==0)
17                        printf("W");
18                    else
19                        printf("B");
20                }
21                else
22                {
23                    if((i+j)%2==0)
24                        printf("B");
25                    else
26                        printf("W");
27                }
28            }
29            printf("\n");
30        }
31        n--;
32    }
33 }
```

OUTPUT:

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

Passed all tests! ✓

Q3) 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: $2 \leq N \leq 100$

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

102030405026027028029030

**6070809022023024025

****10011012019020021

*****13014017018

*****15016

Code:

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int t,n,x,y,z=1,i,ans,c;
5     scanf("%d",&t);
6     while(z<=t)
7     {
8         scanf("%d",&n);
9         printf("Case #%d\n",z);
10        y=1;
11        i=1;
12        c=0;
13        while(y<=n)
14        {
15            x=1;
16            ans=(n*n);
17            ans=ans-c;
18            while(x<=2*n)
19            {
20                if(x<=n)
21                {
22                    if(x<y)
23                        printf("++");
24                    else if(x<=n)
25                    {
26                        printf("%d",i*10);
27                        i++;
28                    }
29                }
30            }
```

```
31            else
32            {
33                if((x+y)==(2*n)+1)
34                {
35                    printf("%d",(ans+y));
36                    ans++;
37                    c++;
38                }
39            }
40            else if(x+y<=(2*n)+1)
41            {
42                printf("%d",(ans+y)*10);
43                ans++;
44                c++;
45            }
46        }
47        x++;
48    }
49    y++;
50    printf("\n");
51    z++;
52 }
53
54 }
55 }
```

OUTPUT:

	Input	Expected	Got	
✓	3	Case #1	Case #1	✓
	3	10203010011012	10203010011012	
	4	**4050809	**4050809	
	5	****607	****607	
		Case #2	Case #2	
		1020304017018019020	1020304017018019020	
		**50607014015016	**50607014015016	
		****809012013	****809012013	
		*****10011	*****10011	
		Case #3	Case #3	
		102030405026027028029030	102030405026027028029030	
		**6070809022023024025	**6070809022023024025	
		****10011012019020021	****10011012019020021	
		*****13014017018	*****13014017018	
		*****15016	*****15016	

Passed all tests! ✓