

WEEK 5-01

Nested Loops – while and for, Jumps in Loop

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Attempt 1	
Status	Finished
Started	Monday, 23 December 2024, 5:33 PM
Completed	Friday, 22 November 2024, 4:17 AM
Duration	31 days 13 hours

PROGRAM 1: 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 T;
5     scanf("%d",&T);
6     while (T>0)
7     {
8         int x,i,j;
9         scanf("%d",&x);
10        if (x<0)
11        {
12            x=-x;
13        }
14        char a = 'W';
15        for (i=0;i<x;i++)
16        {
17            for(j=0;j<x;j++)
18            {
19                printf("%c",a);
20                if (a=='W')
21                {
22                    a='B';
23                }
24                else
25                {
26                    a='W';
27                }
28            }
29            printf("\n");
30            if(x%2==0)
31            {
32                if(a=='W')
33                {
34                    a='B';
35                }
36                else
37                {
38                    a='W';
39                }
40            }
41        }
42        T--;
43    }
44    printf("\n");
45 }
```

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! ✓

PROGRAM 2: 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 T;
5      scanf("%d",&T);
6      while(T!=0)
7      {
8          char a;
9          int x,i=0,j=0;
10         scanf("%d %c",&x,&a);
11         for(i=0;i<x;i++)
12         {
13             for (j=0;j<x;j++)
14             {
15                 printf("%c",a);
16                 if (a=='W')
17                 {
18                     a='B';
19                 }
20                 else
21                 {
22                     a='W';
23                 }
24             }
25             if ((x%2)==0)
26             {
27                 if (a=='W')
28                 {
29                     a='B';
30                 }
31                 else
32                 {
33                     a='W';
34                 }
35             }
36             printf("\n");
37         }
38         T--;
39     }
40 }
```

OUTPUT:

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

Passed all tests! ✓

PROGRAM 3: 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 n,c=0;
5      scanf("%d",&n);
6      while(n!=0)
7      {
8          c++;
9          int a,s1=10,s2,i=0,j=0;
10         scanf("%d",&a);
11         s2=(a*a*10)+10;
12         printf("Case #%d\n",c);
13         for (i=0;i<a;i++)
14         {
15             for (j=0;j<i;j++)
16             {
17                 printf("***");
18             }
19             for (j=0;j<a-i;j++)
20             {
21                 printf("%d",s1);
22                 s1=s1+10;
23             }
24             for (j=0;j<a-i;j++)
25             {
26                 if ((j+1)==(a-i))
27                 {
28                     printf("%d",((s2+(j*10))/10));
29                 }
30                 else
31                 {
32                     printf("%d",s2+(j*10));
33                 }
34             }
35             s2 -= (a-i)*10;
36             s2 += 10;
37             printf("\n");
38         }
39         n--;
40     }
41 }
```

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! ✓