

Week 5 – 1:

ROLL NO.:240801142

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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:

```
1 #include<stdio.h>
2 int main(){
3     int T,d,i=0,i1,i2,o;
4     char c;
5     scanf("%d",&T);
6     while(i<T)
7     {
8         scanf("%d",&d);
9         i1=0;
10        while(i1<d)
11        {
12            o=1;
13            i2=0;
14            if(i1%2==0)
15            {
16                o=0;
17            }
18            while(i2<d)
19            {
20                c='B';
21                if(i2%2==o)
22                {
23                    c='W';
24                }
25                printf("%c",c);
26                i2++;
27            }
28            i1+=1;
29            printf("\n");
30        }
31        i=i+1;
32    }
33    return 0;
34 }
```

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:

```

1  #include<stdio.h>
2  int main(){
3      int T,d,i,i1,i2,z,o;
4      char c,s;
5      scanf("%d",&T);
6      for(i=0;i<T;i++)
7      {
8          scanf("%d %c",&d,&s);
9          for(i1=0;i1<d;i1++)
10         {
11             z=(s=='W')?0:1;
12             o=(i1%2==z)?0:1;
13             for(i2=0;i2<d;i2++)
14             {
15                 c=(i2%2 ==o)?'W':'B';
16                 printf("%c",c);
17             }
18             printf("\n");
19         }
20     }
21     return 0;
22 }

```

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:

```
1 #include<stdio.h>
2 int main(){
3     int n,v,p3,c,in,i,i1,i2,t,ti;
4     scanf("%d",&t);
5     for(ti=0;ti<t;ti++)
6     {
7         v=0;
8         scanf("%d",&n);
9         printf("Case #%d\n",ti+1);
10        for( i=0; i<n;i++)
11        {
12            c=0;
13            if(i>0)
14            {
15                for(i1=0;i1<i;i1++)
16                {
17                    printf("***");
18                }
19            }
20            for(i1=i;i1<n;i1++)
21            {
22                if(i>0)
23                {
24                    c++;
25                }
26                printf("%d0",++v);
27            }
28            if(i==0)
29            {
30                p3=v+(v*(v-1))+1;
31                in=p3;
32            }
33            in=in-c;
34            p3=in;
35            for(i2=i;i2<n;i2++)
36            {
37                printf("%d",p3++);
38                if(i2 !=n-1)
39                {
40                    printf("0");
41                }
42            }
43            printf("\n");
44        }
45    }
46 }
```

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! ✓