

Week 5 – 1:

ROLL NO.:240801198

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Question 1

Write a program that prints a simple chessboard.

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          scanf("%d",&d);
8          i1=0;
9          while(i1<d){
10             o=1;
11             i2=0;
12             if(i1%2==0){
13                 o=0;
14             }
15             while (i2<d){
16                 c='B';
17                 if (i2%2==o){
18                     c='W';
19                 }
20                 printf("%c",c);
21                 i2++;
22             }
23             i1+=1;
24             printf("\n");
25         }
26         i=i+1;
27     }
28 }

```

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

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          v=0;
7          scanf("%d",&n);
8          printf("Case #%d\n",ti+1);
9          for (i=0;i<n;i++){
10             c=0;
11             if(i>0){
12                 for(i1=0;i1<i;i1++) printf("**");
13             }
14             for(i1=i;i1<n;i1++){
15                 if(i>0) c++;
16                 printf("%d0",++v);
17             }
18             if(i==0){
19                 p3=v+(v*(v-1))+1;
20                 in=p3;
21             }
22             in=in-c;
23             p3=in;
24             for(i2=i;i2<n;i2++){
25                 printf("%d",p3++);
26                 if(i2!=n-1) printf("0");
27             }printf("\n");
28         }
29     }
30 }
```

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! ✓