Week 5 – 1:
ROLL NO.:240801181
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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:

```c
#include<stdio.h>
int main()
{
    int T,d,i=0,i1,i2,o;
    char c;
    scanf("%d",&T);
    while(i<T)
    {
        scanf("%d",&d);
        i1=0;while(i1<d){
            o=1;i2=0;
            if(i1%2==0)
            {
                o=0;
            }while(i2<d)
            {
                c='B';
                if(i2%2==o)
                {
                    c='W';
                }printf("%c",c);
                i2++;
            }i1+=1;
            printf("\n");
        }i=i+1;
    }
}
```

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:

```c
#include<stdio.h>
int main()
{
    int T,d,i,i1,i2,o,z;
    char c,s;
    scanf("%d",&T);
    for(i=0;i<T;i++)
    {
        scanf("%d %c",&d,&s);
        for(i1=0;i1<d;i1++)
        {
            z=(s=='W')?0:1;
            o=(i1%2==z)?0:1;
            for(i2=0;i2<d;i2++)
            {
                c=(i2%2==o)?'W':'B';
                printf("%c",c);
            }
            printf("\n");
        }
    }
    return 0;
}
```

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 <= N <= 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:

```c
#include<stdio.h>
int main()
{
    int n,v,p3,c,in,i,i1,i2,t,ti;
    scanf("%d",&t);
    for(ti=0;ti<t;ti++)
    {
        v=0;
        scanf("%d",&n);
        printf("Case #%d \n",ti+1);
        for(i=0;i<n;i++)
        {
            c=0;
            if(i>0)
            {
                for(i1=0;i1<i;i1++)
                    printf("**");

            }
            for(i1=i;i1<n;i1++)
            {
                if(i>0)
                c++;
                printf("%d0",++v);

            }
            if(i==0)
            {
                p3=v+(v*(v-1))+1;
                in=p3;
            }
            in=in - c;
            p3=in;
            for(i2=i;i2<n;i2++)
            {
                printf("%d",p3++);
                if(i2!=n-1)
                printf("0");

            }
            printf("\n");
        }
    }
}
```

OUTPUT:

	Input	Expected	Got	
✓	3 3 4 5	Case #1 10203010011012 **4050809 ****607 Case #2 1020304017018019020 **50607014015016 ****809012013 ******10011 Case #3 10203040500260270280290300 **6070809022023024025 ****100110120190200210 ******13014017018 ********15016	Case #1 10203010011012 **4050809 ****607 Case #2 1020304017018019020 **50607014015016 ****809012013 ******10011 Case #3 10203040500260270280290300 **6070809022023024025 ****100110120190200210 ******13014017018 ********15016	✓

Passed all tests! ✓