Week 5 – 1:

ROLL NO.:240801174

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Status	Finished
Started	Monday, 23 December 2024, 5:33 PM
Completed	Tuesday, 26 November 2024, 9:01 PM
Duration	26 days 20 hours

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 a ,b;
    char c ;
    scanf("%d",&a);
    while(a--)
    {
        scanf("%d %c",&b,&c);
        for( int i =0 ; i<b ; i ++)
        {
            for( int j = 0 ;j<b; j++)
            {
                if (c == 'W')
                {
                    if ((i + j)%2 == 0)
                    {
                        printf("W");
                    }
                    else
                    {
                        printf("B");
                    }
                }
                    else
                    {
                        if( ( i+ j)%2==0)
                        {
                            printf("B");
                        }
                        else
                        {
                            printf("W");
                        }

                    }
            }
            printf("\n");
        }
    }
    return 0;
}
```

OUTPUT:

	Input	Expected	Got	
✓	2 3 5	WBW BWB WBW WBWBW BWBWB WBWBW BWBWB WBWBW	WBW BWB WBW WBWBW BWBWB WBWBW BWBWB 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 a ,b;
    char c ;
    scanf("%d",&a);
    while(a--)
    {
        scanf("%d %c",&b,&c);
        for( int i =0 ; i<b ; i ++)
        {
            for( int j = 0 ;j<b; j++)
            {
                if (c == 'W')
                {
                    if ((i + j)%2 == 0)
                    {
                        printf("W");
                    }
                    else
                    {
                        printf("B");
                    }
                }
                    else
                    {
                        if( ( i+ j)%2==0)
                        {
                            printf("B");
                        }
                        else
                        {
                            printf("W");
                        }

                    }
            }
            printf("\n");
        }
    }
    return 0;
}
```

OUTPUT:

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

10203040170180190 20

**50607014015016

****809012013

******10011

Case #3

1020304050260270280290 30

**6070809022023024025

****10011012019020021

******13014017018

********15016

Code:

```c
#include<stdio.h>
int main()
{
    int p,q,r,s,t = 1 ,u,ans,v ;
    scanf("%d",&p);
    while(t<=p)
    {
        scanf("%d",&q);
        printf("Case #%d \n",t);
        s=1;
        u=1;
        v=0;
        while(s<=q)
        {
            r=1;
            ans = (q*q);
            ans = ans - v;
            while(r<=2*q)
            {
                if(r<=q)
                {
                    if(r<s)
                    {
                        printf("**");
                    }
                    else if(r<=q)
                    {
                        printf("%d",u*10);
                        u++;
                    }
                }else{
                    if((r+s)==(2*q)+1)
                    {
                        printf("%d",(ans+ s));
                        ans++;
                        v++;
                    }
                    else if (r+s<=(2*q)+1){
                        printf("%d",(ans+s)*10);
                        ans++;
                        v++;
                    }
                }
                r++;
            }
            s++;
            printf("\n");
        }
        t++;
    }
    return 0;
}
```

OUTPUT:

	Input	Expected	Got	
✓	3 3 4 5	Case #1 10203010011012 **4050809 ****607 Case #2 1020304017018019020 **50607014015016 ****809012013 ******10011 Case #3 10203040502602702802903 0 **6070809022023024025 ****10011012019020021 ******13014017018 ********15016	Case #1 10203010011012 **4050809 ****607 Case #2 1020304017018019020 **50607014015016 ****809012013 ******10011 Case #3 10203040502602702802903 0 **6070809022023024025 ****10011012019020021 ******13014017018 ********15016	✓

Passed all tests! ✓