Week 5 – 1:

ROLL NO.:241801022

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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 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 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 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

1020304017018019020

**50607014015016

****809012013

******10011

Case #3

10203040502602702802 9030

**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 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! ✓