Week 5 – 1:

ROLL NO.:240801160

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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            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
29   }
```

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<br>3<br>4<br>5 | Case #1<br>10203010011012<br>**4050809<br>****607<br>Case #2<br>10203040170180190 20<br>**50607014015016<br>****809012013<br>******10011<br>Case #3<br>102030405026027028029030<br>**60708090 22023024025<br>****100110120190 20021<br>******13014017018<br>********15016 | Case #1<br>10203010011012<br>**4050809<br>****607<br>Case #2<br>10203040170180190 20<br>**50607014015016<br>****809012013<br>******10011<br>Case #3<br>102030405026027028029030<br>**60708090 22023024025<br>****100110120190 20021<br>******13014017018<br>********15016 | ✓ |

Passed all tests! ✓