

Week 5 – 1:

ROLL NO.:240801190

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|------------------|-----------------------------------|
| Status | Finished |
| Started | Monday, 23 December 2024, 5:33 PM |
| Completed | Monday, 25 November 2024, 5:40 PM |
| Duration | 27 days 23 hours |

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! ✓