Week 5 – 1

ROLL NO.:240801167

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| Status | Finished |
|---|---|
| Started | Monday, 23 December 2024, 5:33 PM |
| Completed | Thursday, 21 November 2024, 9:45 AM |
| Duration | 32 days 7 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 t,size;
    scanf("%d",&t);
    while(t--)
    {
        scanf("%d",&size);
        for (int i=0;i<size;i++)
        {
            for (int j=0;j<size;j++)
            {
                if((i+j)%2==0)
                printf("W");
                else
                printf("B");
            }
            printf("\n");
        }
    }
    return 0;
}
```

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,size;
    char ch;
    scanf("%d",&t);
    while(t--)
    {
        scanf("%d %c",&size,&ch);
        for(int i=0;i<size;i++)
        {
            for(int j = 0;j<size;j++)
            {
                if((i+j)%2==0)
                    printf("%c",ch);
                else
                    printf("%c",(ch=='W')?'B':'W');
            }
            printf("\n");
        }
    }
    return 0;
}
```

OUTPUT:

| | Input | Expected | Got | |
|---|---|---|---|---|
| ✓ | 2<br>2 W<br>3 B | WB<br>BW<br>BWB<br>WBW<br>BWB | WB<br>BW<br>BWB<br>WBW<br>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 num,t;
    scanf("%d",&t);
    int st1 =1;
    int st2;
    for(int k = 1;k<=t;k++)
    {
        printf("Case #%d\n",k);
        scanf("%d",&num);
        st1 = 1;
        st2= num*(num+1);
        for(int i =0;i<num;i++)
        {
            for (int j=0;j<i;j++)
            {
                printf("**");
            }
            for (int j=0;j<num-i;j++)
            {
                printf("%d",(st1++)*10);
            }
            st2 = st2-(num-i-1);
            for(int j=0;j<(num-i-1);j++)
            {
                printf("%d",(st2++)*10);
            }
            printf("%d",st2);
            st2 = st2 -(num-i);
            printf("\n");
        }
    }
    return 0;
}
```

OUTPUT:

| | Input | Expected | Got | |
|---|---|---|---|---|
| ✓ | 3<br>3<br>4<br>5 | Case #1<br>10203010011012<br>**4050809<br>****607<br>Case #2<br>1020304017018019020<br>**50607014015016<br>****809012013<br>******10011<br>Case #3<br>102030405026027028029030<br>**6070809022023024025<br>****10011012019020021<br>******13014017018<br>********15016 | Case #1<br>10203010011012<br>**4050809<br>****607<br>Case #2<br>1020304017018019020<br>**50607014015016<br>****809012013<br>******10011<br>Case #3<br>102030405026027028029030<br>**6070809022023024025<br>****10011012019020021<br>******13014017018<br>********15016 | ✓ |

Passed all tests! ✓