Week:05-01-Nested loops-While and for jumps in loops
Roll no:241501091
Name-Krishna Akhileshwaran AV

Q1)Problem Statement:

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:

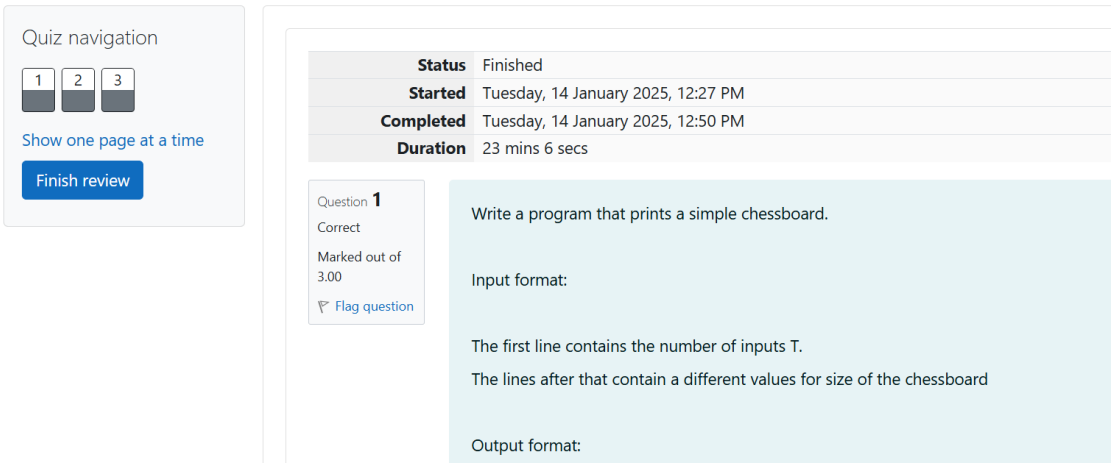
2
3
5

Sample Output:

WBW
BWB
WBW
WBWBW
BWBWB
WBWBW
BWBWB
WBWBW

REC-CIS

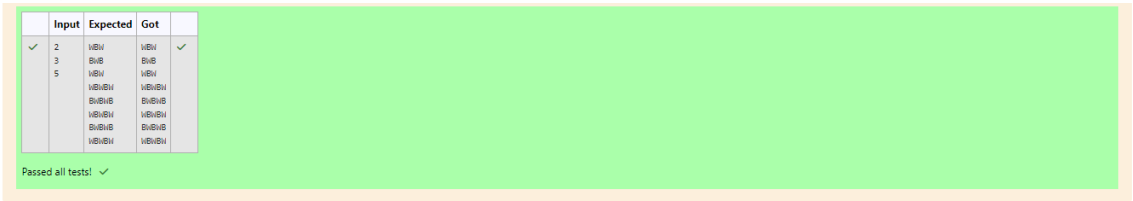
GE23131-Programming Using C-2024



Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    int T,d,i,y=0,j;
    scanf("%d",&T);
    while(y<T)
    {
        scanf("%d",&d);
        for(i=1;i<=d;i++)
        {
            for(j=1;j<=d;j++)
            {
                if((i+j)%2==0){
                    printf("W");
                }
                else
                {
                    printf("B");
                }
            }
            printf("\n");
        }
        y++;
    }
    return 0;
}
```

Output:



Q2)Problem Statement:

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

Question **2**
Correct
Marked out of 5.00
Flag question

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 / Output

Input:

```
2
2 W
3 B
```

Output:

```
WB
BW
BWB
WBW
BWB
```

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    int T;
    scanf("%d",&T);
    for(int t=0;t<T;t++)
    {
        int N;
        char start;
        scanf("%d %c",&N,&start);
        char alt=(start == 'W')?'B':'W';
        for(int i=0;i<N;i++)
        {
            for(int j=0;j<N;j++)
            {
                if((i+j)%2==0)
                {
                    printf("%c",start);
                }
                else
                {
                    printf("%c",alt);
                }
            }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)Problem Statement:

Decode the logic and print the pattern that corresponds to the given input.
If \(N = 3 \), then the pattern will be:
10203010011012
**4050809
***607
If \(N = 4 \), then the 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
102030405020602702802903 0
**6070809022030204025
***10011012019020021
****13014017018
*****15016

Question 3
Correct
Marked out of 7.00
Flag question

Decode the logic and print the Pattern that corresponds to given input.

If N= 3

then pattern will be :

102030100011012
**4050809
****607

If N= 4, then pattern will be:

10203040017018019020
**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

First line print Case #i where i is the test case number
In the subsequent line, print the pattern

Test Case 1

3
3
4
5

Output

Case #1
102030100011012
**4050809
****607
Case #2
10203040017018019020
**50607014015016
****809012013

Answer: (penalty regime: 0 %)

```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 10203040170180190 20 **50607014015016 ****809012013 ******10011 Case #3 10203040502602702802903 0 **607080902202302402 5 ****10011012019020021 ******13014017018 ********15016	Case #1 10203010011012 **4050809 ****607 Case #2 10203040170180190 20 **50607014015016 ****809012013 ******10011 Case #3 10203040502602702802903 0 **607080902202302402 5 ****10011012019020021 ******13014017018 ********15016	✓

Passed all tests! ✓

week:05-02
Roll No:241501091
Name:Krishna Akhileshwaran AV

Q1)Problem Statement:

The k-digit number N is an Armstrong number if and only if the k-th power of each digit sums to N.
Given a positive integer N, return true if and only if it is an Armstrong number.
Note: 1 <= N <= 10^8
Hint:153 is a 3-digit number, and 153 = 1^3 + 5^3 + 3^3.

Sample Input:

153

Sample Output:

true

Sample Input:

123

Sample Output:

false

Sample Input:

1634

Sample Output:

true

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Quiz navigation

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Show one page at a time

Finish review

Status	Finished
Started	Tuesday, 14 January 2025, 12:59 PM
Completed	Tuesday, 14 January 2025, 1:10 PM
Duration	10 mins 48 secs

Question **1**

Correct

Marked out of 3.00

Flag question

The k-digit number N is an Armstrong number if and only if the k-th power of each digit sums to N.

Given a positive integer N, return true if and only if it is an Armstrong number.

Example 1:

Input:

153

```c
#include<stdio.h>
#include<math.h>
int main()
{
    int n;
    scanf("%d",&n);
    int x=0,n2=n;
    while(n2!=0)
    {
        x++;
        n2/=10;
    }
    int sum=0,n3=n,n4;
    while(n3!=0)
    {
        n4=n3%10;
        sum=sum+pow(n4,x);
        n3/=10;
    }
    if(n==sum)
    {
        printf("true");
    }
    else
    {
        printf("false");
    }
    return 0;
}

```

Output:

	Input	Expected	Got	
✓	153	true	true	✓
✓	123	false	false	✓

Passed all tests! ✓

Q2)Problem statement:

Take a number, reverse it and add it to the original number until the obtained number is a palindrome.
Constraints: (1<=num<=999999999)

Sample Input 1:

32

Sample Output 1:

55

Sample Input 2:

789

Sample Output 2:

66866

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    int rn,n,nt=0,i=0;
    scanf("%d",&n);
    do
    {
        nt=n;
        rn=0;
        while(n!=0)
        {
            rn=rn*10+n%10;
            n/=10;
        }
        n=nt+rn;
        i++;
    }
    while(rn!=nt||i==1);
    {
        printf("%d",rn);
    }
    return 0;
}
```

	Input	Expected	Got	
✓	32	55	55	✓
✓	789	66066	66066	✓

Passed all tests! ✓

Q3)problem statement:

A number is considered lucky if it contains either 3 or 4 or both in it. Write a program to print the nth lucky number. For example, the 1st lucky number is 3, the 2nd lucky number is 4, the 3rd lucky number is 33, the 4th lucky number is 34, and so on. Note that numbers like 13, 40, etc., are not considered lucky as they contain other digits.

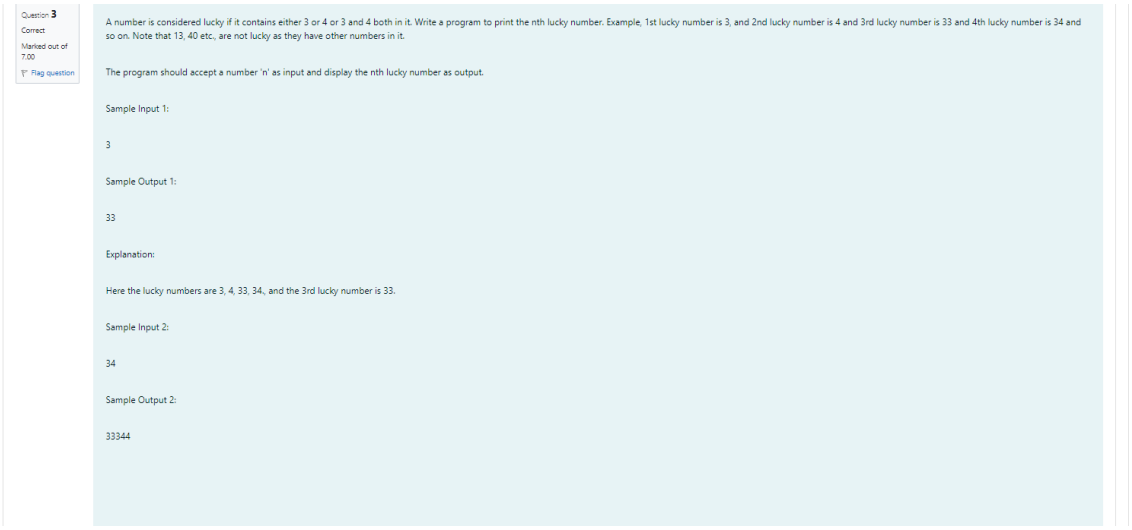
The program should accept a number 'n' as input and display the nth lucky number as output

Sample Input 1:

3

Sample Output 1:

33



Question 3
Correct
Marked out of 7.00
Flag question

A number is considered lucky if it contains either 3 or 4 or 3 and 4 both in it. Write a program to print the nth lucky number. Example, 1st lucky number is 3, and 2nd lucky number is 4 and 3rd lucky number is 33 and 4th lucky number is 34 and so on. Note that 13, 40 etc., are not lucky as they have other numbers in it.

The program should accept a number 'n' as input and display the nth lucky number as output.

Sample Input 1:

3

Sample Output 1:

33

Explanation:

Here the lucky numbers are 3, 4, 33, 34,, and the 3rd lucky number is 33.

Sample Input 2:

34

Sample Output 2:

33344

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    int n=1,i=0,nt,co=0,e;
    scanf("%d",&e);
    while(i<e)
    {
        nt=n;
        while(nt!=0)
        {
            co=0;
            if(nt%10!=3 && nt%10!=4)
            {
                co=1;
                break;
            }
            nt=nt/10;
        }
        if(co==0)
        {
            i++;
        }
        n++;
    }
    printf("%d",--n);
    return 0;
}
```

output:

	Input	Expected	Got	
✓	34	33344	33344	✓

Passed all tests! ✓