Exam Algorithm and Programming

Format file : [KodeKelas] – [Nama].cpp

High integrity more valuable than high result

Buatah sebuah program dengan deskripsi sebagai berikut :

Bobot nilai 5 poin

Program terdiri dari 5 menu :

1. Looping menu
2. Initial name
3. Triangle
4. Grade
5. Exit

Program akan berjalan terus-menerus hingga user memilih menu 5 untuk exit.

```
Menu:
1. Looping number
2. Initial Name
3. Triangle
4. Grade
5. Exit
Choose menu [1..5] :
aa
Choose menu [1..5] :
0
Choose menu [1..5] :
6
Choose menu [1..5] :
klasj
Choose menu [1..5] :
5
Thankyou!
```

Menu 1 bobot nilai 10 poin

User akan diminta 2 inputan angka. Angka pertama adalah jumlah deret bilangan yang akan dicetak dan angka kedua adalah selisih deret bilangan. Angka akan dimulai dari angka 1.

```
Menu:
1. Looping number
2. Initial Name
3. Triangle
4. Grade
5. Exit
Choose menu [1..5] :
1
Insert 2 number (a b) : 15 3
1 4 7 10 13 16 19 22 25 28 31 34 37 40 43
```

```
Menu:
1. Looping number
2. Initial Name
3. Triangle
4. Grade
5. Exit
Choose menu [1..5] :
1
Insert 2 number (a b) : 7
6
1 7 13 19 25 31 37
```

Menu 2 bobot nilai 10 poin

User akan diminta memasukan nama mereka. Validasi panjang nama yang diinput harus minimal 5 dan maksimal 50 karakter. Output akan menampilkan 2 huruf kapital secara random (A-Z), dilanjutkan cetak huruf pertama tiap kata dari nama dalam huruf kapital.

```
Menu:
1. Looping number
2. Initial Name
3. Triangle
4. Grade
5. Exit
Choose menu [1..5] :
2
Insert name [5-50]: Joko Widodo
PHJW
```

```
Menu:
1. Looping number
2. Initial Name
3. Triangle
4. Grade
5. Exit
Choose menu [1..5] :
2
Insert name [5-50]: susilo bambang yudhoyono
QGSBY
```

Menu 3 bobot nilai 10 poin

User akan diminta memasukkan 1 angka untuk tinggi dari segitiga sama kaki. Output akan menghasilkan segitiga tersebut dengan tinggi sesuai dengan input.

```
Menu:
1. Looping number
2. Initial Name
3. Triangle
4. Grade
5. Exit
Choose menu [1..5] :
3
Insert triangle height : 5
    *
   ***
  *****
 *******
*********
```

```
Menu:
1. Looping number
2. Initial Name
3. Triangle
4. Grade
5. Exit
Choose menu [1..5] :
3
Insert triangle height : 10
         *
        ***
       *****
      *******
     *********
    ***********
   *************
  ***************
 *****************
*******************
```

Menu 4 bobot nilai 5 poin

User akan diminta memasukan 1 angka untuk dihitung grade. Validasi angka minimal 0 dan maksimal 100. Hasil dari inputan tersebut adalah sesuai dengan tabel berikut:

GRADE	SCORE
A	90 - 100
A-	85 - 89
B+	80 - 84
B	75 - 79
B-	70 - 74
C	65 - 69
D	50 - 64
E	0 - 49
F	0

```
Menu:
1. Looping number
2. Initial Name
3. Triangle
4. Grade
5. Exit
Choose menu [1..5] :
4
Insert your algo score: -1
Insert your algo score: 101
Insert your algo score: 89
Your grade : A-
```

BiG AnD SmAlL (15 Point)

Riri just learned how to write, she just recognized the difference between small and capital letters. To test Riri, a text consists of small letters is given, and she is going to change that text into a text that starts with **capital letter, then small letter, then capital letter, and so on**.

Format Input

First line consists of an integer T (T ≤ 100) represents the number of test cases. Every test case consists of a text S (1 ≤ |S| ≤ 100) consisting only small letters (a-z).

Format Output

Output consists of T lines; each line consists of a text S that has been changed into the desired text (capital-small-capital-small-...).

Sample Input	Sample Output
2 bnpchs coursenet	BnPcHs CoUrSeNeT

Notes

Ascii:

'a' = 97

'A' = 65

A @ B (15 Point)

Now we will learn about new way to count, that is (@). We define A @ B as sum of digits of A times **sum of digits of B**.

Example: 12 # 78 = (1 + 2) * (7 + 8) = 3 * 15 = 45. You are given A and B. Calculate the result of A # B.

Format Input

First line consists of an integer T (T ≤ 1000) represents the number of test cases.

Each test case consists of 2 integers A and B (1 ≤ A, B ≤ 1000000).

Format Output
For each test case, print "Case #Y: Z" (without quotes) where Y is the test case number starts from 1, and Z is the result of A # B.

Sample Input	Sample Output
2 12 78 1 1	Case #1: 45 Case #2: 1

Notes

Explanation for sample case 2

1 # 1 = (1) * (1) = 1.

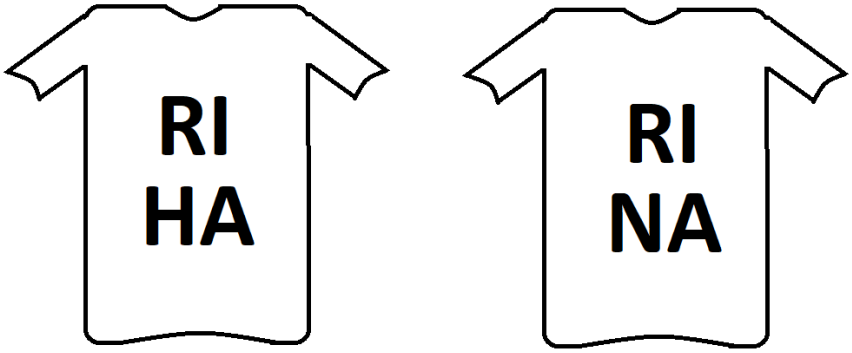
Additional Example:

Input 31 51, then (3+1) * (5+1) = 4 * 6 = 24.

RIHA RINA (15 Point)

Riri and Hana are best friends and they bought T-shirts which if they both wear it; it forms their name.

One day Connie find it confusing because they spell RIHA RINA, so Connie triggered to make a program to find their real name. Help Connie to make it.



Format Input

First line consists of an integer T (T ≤ 1000) represents the number of test cases.

Each test case consists of two lines of word containing of 4 character and only ‘A’ – ‘Z’.

Format Output

For each test case, print "Case #X: Y Z" (without quotes) where X is the test case number starts from 1, and Y is the result of first word of two same index characters and Z is next word two same index characters.

Sample Input	Sample Output
2 RIHA RINA BUAN DITO	Case #1: RIRI HANA Case #2: BUDI ANTO

Handshaking Fest (15 Point)

Connie went to the Handshaking Fest which in this festival, people shaking hands with everyone they meet. Connie triggered to make a program to calculate how much handshakes occurred by guessing on how many people coming there.

Format Input

First line consists of an integer T (T ≤ 1000) represents the number of test cases.

Each test case consists an integer of total people.

Format Output

For each test case, print "Case #X: Y" (without quotes) where X is the test case number starts from 1, and Y is the result of handshakes occurred.

Sample Input	Sample Output
4 2 3 20 50	Case#1: 1 Case#2: 3 Case#3: 190 Case#4: 1225