1. **if – else:**
   Dinesh started learning Geometry today. He doesn't know the formulae to calculate the areas of different shapes. His teacher has just taught him how to calculate the areas of basic shapes including square, rectangle, triangle and circle. He is facing the problem to memorise all these formulae. Create a python logic to help Dinesh to display the formulae when he selects the shape.

   Hint:
   Area of Square = side^2
   Area of Rectangle= lengthXbreadth
   Area of Triangle = 0.5XbaseXheight
   Area of circle= 3.14Xradius
   Dinesh will enter letters S for Square, R for Rectangle, T for triangle and C for Circle
   Input
   One line of input contains the First alphabet of shape in Capital form.
   Output
   Formula for corresponding shape.
   Example input
   S
   Output
   side ^2
   Note:
   Use capital 'X' as multiplication and '^' for power.
   Avoid spaces in formulae Example: for input 'C' the output is 3.14Xradius^2
   Show message 'Enter valid alphabet' for the input other than specified letters

2. **if – else:**
   3 friends are planning a holiday trip. They are searching for their destination. They visited an awesome website which helps people to decide the holiday destination in India according to the months of the year.
   From February to May -Shimla Manali Ooty
   From June to September - Lonavala Goa Kodaikanal
   From October to January - Munnar Kullu Manali
   Input
   A single number for the respective month
   Output
   Suggestion as per the list given
   Example Input
   2
   Output
   Shimla Manali Ooty
   Note: if number entered is more than 12 then print message "Enter valid number"

3. **if – else:**
   Siddesh is an accountant at XYZ company. He is responsible for calculating the income tax of the employees in the company. He has the following reference tax slabs according to the new tax regime.

Income Tax Slab	Tax Rates As Per New Regime
₹0 - ₹2,50,000	Nil
₹2,50,001 - ₹ 5,00,000	5%
₹5,00,001 - ₹ 7,50,000	₹12500 + 10% of total income exceeding ₹5,00,000
₹7,50,001 - ₹ 10,00,000	₹37500 + 15% of total income exceeding ₹7,50,000
₹10,00,001 - ₹12,50,000	₹75000 + 20% of total income exceeding ₹10,00,000
₹12,50,001 - ₹15,00,000	₹125000 + 25% of total income exceeding ₹12,50,000
Above ₹ 15,00,000	₹187500 + 30% of total income exceeding ₹15,00,000

Mohan has given income as the input. Write a python logic to calculate how much income tax is deducted annually from his salary.

Input

Annual salary in int

Output

Total tax

Example Input

600000

Output

22500

4. **Loops:**

Arvind wants to print leap years starting between the years 2000 and 2100. Write a python logic to help him.

Input

The first line of input contains the start year The second line of input contains end year

Note: Both years should be included in answer if they are leap years

Output

All leap years

Example Input

2004
2030

Output

2004
2008
2012
2016
2020
2024
2028

5. **Loops:**
   Ishan is an accountant in a small-scale firm. His job is to make simple calculations using + - * / operators frequently. Create a python program to create continuous calculations until he selects **Stop**.
   Input
   The first input is the first letter of arithmetic operation i.e. "A" for addition, "S" for subtraction, "D" for division and "M" for multiplication. second and third line of input is two numbers fourth line of input is "Stop"
   Output
   Answers after arithmetic calculations.
   Example Input
   A
   5
   3
   Stop
   Output
   8

6. **for loop:**
   For a given input integer n and symbol create the following pattern.

   Input

   the first line of the input is the number

   the second line of the input is a symbol

   Output

   Pattern of symbols

   Example Input 1

   8

   *

   Output 1

   *

   **

   ***

   ****

   *****

   ******

   ****

   ****

   ****

******

*****

****

***

**

*

Input 2

5

$

Output 2

$

$$

$$$

$$$$

$$$$$

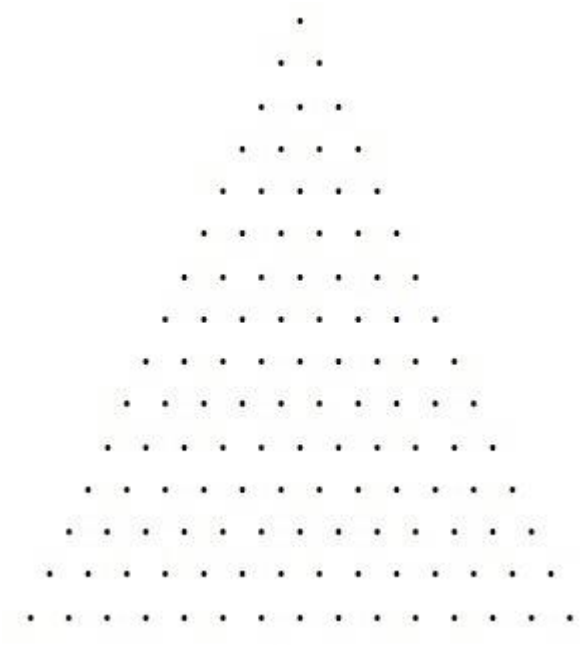
$$$$

$$$

$$

$

7. Print the following pattern for different symbols given in input.



Input

the first line contains the integer

second line of the input contains the symbol

Output

Print the above given pattern

Example Input

5

#

Output

```
    #
   # #
  # # #
 # # # #
# # # # #
```

8. Write a Python program that:
   1. Asks the user for the number of students.
   2. For each student, asks for their name and marks in five subjects (Math, Science, English) using a for loop.
   3. Calculates the total marks and percentage for each student.
   4. Assigns a grade based on the percentage: 90-100%: A ,80-89%: B, 70-79%: C, 60-69%: D, below 60%: F
   5. Prints the student's name, total marks, percentage, and grade.