Practice 3

1. **Fizzbuzz** Write a program that prints numbers from 1 to 100 (inclusive), 10 on each line. However, for any number divisible by 3 the program should print `fizz` instead, and for any number divisible by 5, it should print `buzz`. For numbers divisible by both 3 and 5, the program should display `fizzbuzz` instead.

2. **Pass or fail** Write a program that prompts a student to enter a test score. If the score is greater or equal to 60, display `you pass the exam`; otherwise, display `you don't pass the exam`. Your program ends with input -1. Here are some sample runs:

```
Enter your score: 80
You pass the exam.
Enter your score: 59
You don't pass the exam.
Enter your score: -1
Ending program
```

3. **Sum of digits** Write a program that prompts the user to input an integer and then outputs the sum of the digits. Here are some sample runs:

```
Enter an integer number: 3456
The sum of the total individual digits is 18
```

```
Enter an integer number: 8030
The sum of the total individual digits is 11
```

4. **Statistics** Write a program that prompts the user to enter 10 numbers and displays the mean and standard deviations of these numbers using the following formula:

$$\text{mean} = \frac{\sum_{i=1}^{n} x_i}{n} = \frac{x_1 + x_2 + \cdots + x_n}{n} \quad \text{deviation} = \sqrt{\frac{\sum_{i=1}^{n} x_i^2 - \frac{\left(\sum_{i=1}^{n} x_i\right)^2}{n}}{n-1}}$$

Here is a sample run:

```
Enter 10 numbers: 1 2 3 4.5 5.6 6 7 8 9 10
The mean is 5.61
The standard deviation is 2.99794
```

5. **Triangles** Write a program that prompts the user to enter a non-negative integer *n* and displays *n* lines of the following patterns (given examples are for *n* = 5):

a.	b.	c.
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