Loops 2

1. **Simple Loop**
2. Write a for loop that prints every 10th number from 0 to 100, including 100, each on a new line.
3. Modify the loop to print the numbers in reverse.
4. **Sum of List Elements**
5. Given the list `numbers = [3, 6, 9, 12, 15]`, write a `for` loop to calculate and print the sum of all the elements in the list.
6. Convert your code to a function that receives a list and returns the sum of its items. Test your function with the following lists: [2, 4, 8, 16] and [100, 876, 92, 35].
7. **Character Frequency in String**

Create a function that receives a string and counts and returns how many times the first letter of the string appears in the string (this should not be case-sensitive). Check your function with the following strings: "Ananas", "Programing", and "".

1. **B language- string manipulation**

Create a function called IzharCohen that receives a string and uses a for loop to create and return a new string with ‘b’ added after each letter of the original string.

1. **Pattern Printing**

Write a `for` loop to print the following a pattern according to a list of numbers, for example the list [1,2,3,4,5,6] will out put:

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#

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```

Test your function with the list numbers = numbers = [10,10,3,3,6,6,3,3,10,10] and see if you get a pattern similar to the letter E

1. **Loop with Continue**

Write a `for` loop that prints all the numbers from 1 to 20, except for multiples of 4. Use the `continue` statement to skip printing these numbers.

1. **Loop with Break**

Write a `for` loop that prints the numbers from 1 to 30. If the number is divisible by 10, print "Found!" and break out of the loop.

\*\* Challenge !!

1. **\*Nested Loop for Grid**

Write a nested `for` loop to print a 5x5 grid of asterisks (`\*`). Each line should contain 5 asterisks.

1. **\*\*Fibonacci Sequence**

Write a `for` loop to generate the first 10 numbers in the Fibonacci sequence. Print each number in the sequence.

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1. **\*\*\*Perfect Numbers with Nested Loops**

Write a for loop to find all perfect numbers between 1 and 1000. Use a nested for loop to check each number for perfection and print the perfect numbers.

**Explanation:**

A **perfect number** is a positive integer that is equal to the sum of its proper divisors. For example:

* 6 is a perfect number because its proper divisors are 1, 2, and 3, and 1+2+3=61 + 2 + 3 = 61+2+3=6.
* 28 is a perfect number because its proper divisors are 1, 2, 4, 7, and 14, and 1+2+4+7+14=281 + 2 + 4 + 7 + 14 = 281+2+4+7+14=28.