- **For solving these Problems use Everything that you have learned from the first day of your internship.**
- **If you have any doubts - Reach out to your mentors with your thought process and your Algorithm for that problem.**

1. Write code to print - 'I am a intern in Surfboard payments' seven times

   Constraints :
   - Use one while loop
   - The loop must run atleast 7 time
   - Only one console.log must be used (console.log is to print what is in it)

2. Write code to print the all numbers from 1 to 100 .

   Constraints :
   - Use one while loop
   - The loop must run atleast 100 times.
   - Only one console.log must be used

3. Write code to print all the even and odd numbers from 1 to 100 separately

4. Write a code that will print the next hundred numbers from the number given.
   (eg : If given number is 45 — it must print from 45 - 145).

5. Print the sum of all numbers from 1 to 100

   Constraints :
   - Use one while loop
   - The loop must run atleast 100 times.

6. Write code to print the 26 alphabets of English.

7. Write a program that will print all the even and odd numbers within the next 100 numbers from the number given - (this must work for any number that we give)

8. Write code to print the sum of all the numbers in a array.

9. Write code to print the sum of next 50 numbers from a number given.
   (eg: If given no is 45 - find the sum of no's from 46 - 95).

10. Print this pattern using a single While loop :

    8
    88
    888
    8888
    88888

11. Find the digit sum of 235462356267521523534645.

Constraints :

- Use only one while loop.

12. Write a code with atleast one while loop to print the 26 alphabets of English.

Constraints :

- The condition clause in while loop should not have a number.
- Iterator should not be used
- Loop needs to run 26 times

13. If an array of numbers is given,

1) You need to add all the numbers in the array using a while loop.

2) If the sum is a 2 digit sum, you need to add the two numbers until you get a single digit.

If it's 3 digits then you should add all 3 to get a single digit
Eg. Input : [55,44,27] - 126 - 9

3) You need to find the nth letter of the alphabet and print that.

Constraints

- No iterator in the code
- While loop condition should not use numbers

14. A three digit number is called Armstrong number if sum of cube of its digit is equal to number itself.

E.g.- 153 is an Armstrong number because (1)+(125)+(27) = 153.

Write a program that can generate all Armstrong numbers between 100 to 500.

Constraints

- No iterator in the code
- While loop condition should not use numbers

15. Write a function to display the sum of the series [9 + 99 + 999 + 9999 ...].

Example :

Input the number or terms : 5

Expected Output :

9 99 999 9999 99999

The sum of the series = 111105

Constraints

- No iterator in the code
- While loop condition should not use numbers

16. Use a while loop to list the prime numbers less than 100

    Constraints:
    - Use atleast one while loop.
    - Cannot use iterator /decrementor
    - Your condition for while must be - check if the last generated prime number is less than 100
    - You can list all the prime numbers before hand — your code needs to test
    - Your loop needs to run atleast 100 times

17. Use loop to calculate the sum of your first name .
    eg : SAM - 19 + 1 + 13 = 33

    The loop must stop once the last letter of your first name is reached.

18. A new system policy has been put in place that requires all accounts to use a passphrase instead of simply a password. A passphrase consists of a series of words (lowercase letters) separated by spaces.

    To ensure security, a valid passphrase must contain no duplicate words.

    For example:

    aa bb cc dd ee is valid.
    aa bb cc dd aa is not valid - the word aa appears more than once.
    aa bb cc dd aaa is valid - aa and aaa count as different words.

    The system's full passphrase list is available as your puzzle input. How many passphrases are valid?

    You will receive a long list of passphrases.

19. You have to solve a captcha to prove that you are a computer.

    The captcha requires you to review a sequence of digits based on your puzzle input and find the sum of all digits that match the next digit in the list. The list is circular, so the digit after the last digit is the first digit in the list.

For example:

1122 produces a sum of 3 (1 + 2) because the first digit (1) matches the second digit and the third digit (2) matches the fourth digit.
1111 produces 4 because each digit (all 1) matches the next.
1234 produces 0 because no digit matches the next.
91212129 produces 9 because the only digit that matches the next one is the last digit, 9.

Your question will be one long stream of numbers.

20. There is a spread sheet with apparently random numbers. You need to calculate the checksum of the spreadsheet. Here is the method to calculate the checksum

For each row, determine the difference between the largest value and the smallest value; the checksum is the sum of all of these differences.

For example, given the following spreadsheet:

5 1 9 5
7 5 3
2 4 6 8

The first row's largest and smallest values are 9 and 1, and their difference is 8.

The second row's largest and smallest values are 7 and 3, and their difference is 4.

The third row's difference is 6.

In this example, the spreadsheet's checksum would be 8 + 4 + 6 = 18.

Each of you will receive a separate input for which you need to calculate the checksum.

Your input will look similar in structure to what is provided above each line separated by a newline(\n) and between each character by a tab(\t)