

# Assignment No. 4

## Numbers / Loops

1. Write a function to print all prime numbers between two numbers.
2. Write a program to check whether a number is a **perfect number** (sum of its divisors = number).
3. Find all **Armstrong numbers** between 1 and 1000.
4. Write a program to check whether a number is a **strong number** (sum of factorial of digits = number).
5. Write a function to generate the first  $n$  **prime numbers**.
6. Write a program to find the **LCM (Least Common Multiple)** of two numbers.
7. Write a function that returns the **HCF (GCD)** of a list of numbers.
8. Write a function to print all **factors** of a number.
9. Write a function to check whether a number is **Harshad (Niven) number** (divisible by sum of its digits).
10. Write a function to find the **sum of squares of digits** of a number.

## Strings

11. Write a function to remove all vowels from a string.
12. Write a program to check whether two strings are **anagrams** of each other.
13. Write a function to count the frequency of each character in a string (dictionary output).
14. Write a program to find the longest word in a given sentence.
15. Write a function to count **uppercase and lowercase letters** in a string.

## Patterns / Logic

16. Write a program to print a **right-angled triangle** pattern with \*.
17. Write a program to print a **pyramid** of numbers.
18. Write a function to print the first  $n$  rows of **Pascal's Triangle**.
19. Write a function to generate a multiplication table of size  $n \times n$  (nested loop).
20. Write a function to print the following pattern:

```
1
22
333
4444
```