**Instructions:**

* Try to use procedures to solve these problems
* Upload the solutions to these problems into this [folder](https://drive.google.com/drive/folders/1NRuH5wtP1v1al8KtZzURmVZCWkQJ0D4J?usp=sharing) under the folder of your name

**Raptor Problem set to practice (SET-A) :**

1. Design a flowchart to find if a given number is even/odd
2. Design a flowchart to find nth Fibonacci number.
3. Design a flowchart to print all the prime numbers between the given range
4. Design a flowchart to find if a given string is a palindrome or not
5. Design a flowchart to print all the perfect numbers between the given range of numbers.
   1. Perfect number, a positive integer that is equal to the sum of its proper divisors. The smallest perfect number is 6, which is the sum of 1, 2, and 3. Other perfect numbers are 28, 496, and 8,128.
6. Design a flowchart to print the square of ‘*N*’ Numbers in the given array.
7. Design a flowchart to print the absolute value of a given number.
8. Design a flowchart to print if a given number is Special number or not
   1. A special two-digit number is a number such that when the sum of the digits of the number is added to the product of its digits, the result is equal to the original two-digit number.

**Raptor Problem set to practice (SET-B) :**

1. Design a flowchart and print the sum of all natural numbers upto the given Number *‘N’.*
2. Design a flowchart and swap two values without using the third variable.
   1. **Instruction:** *Create a sub procedure to implement the logic for this flowchart.*
3. Design a flowchart to find the frequency of characters in a given string.
   1. **Example:** *“Raptor Flowcharts”*

*R - 1*

*a - 2*

*p - 1*

*t - 2*

*And so on until the last character*

1. Design a flowchart to print all the factorials of numbers between 1 and 7. (***Use Recursive sub procedure or at least a normal sub procedure***)
   1. Print the values in the following format

1! -> 1

2! -> 2

3! -> 6

4! -> 24

5! -> 120

6! -> 720

7! -> 5040

Problem Set:

* + - Function to print all numbers divisible by 6 and not a factor of 100 in a given range(lb, ub) inclusive
    - Function to find the average of cubes of all even numbers in a given range(lb, ub) inclusive
    - Function to generate the list of factors for a given number
    - Function to calculate the factorial of a given number
    - Function to check if a given number is Prime
    - Function to calculate the average first N Prime numbers
    - Function to generate all Perfect numbers in a given range
* Advanced Problem Set( Optional )
  + - Function to calculate the average of all factorials in a given range
    - Function to generate N odd Armstrong numbers
    - Function to generate Multiplication table for a number in a given range
      * + 10 in the range(100, 102) inclusive
        + 10 x 100 = 1000
        + 10 x 101 = 1010
        + 10 x 102 = 1020

**Problems That needs a Try**

1. You are given a string and your task is to swap cases. In other words, convert all lowercase letters to uppercase letters and vice versa. (The String may contain special characters).
2. Given an integer, ’n’ , perform the following conditional actions:
   1. If ‘n’ is odd, print Weird
   2. If ‘n’ is even and in the inclusive range of 2 to 5, print Not Weird
   3. If ‘n’ is even and in the inclusive range of 6 to 20 , print Weird
   4. If ‘n’ is even and greater than 20, print Not Weird
3. Given the participants ‘n’ score sheet for your University Sports Day, you are required to find the runner-up score. You are given scores. Store them in a list and find the score of the runner-up. (there can be multiple winners - if their scores match).