CosmiCode

Educating the Next Wave of Tech Pioneers.

Week 2 Tasks

- **Task 1:** Write a program to check if a number is prime, and also list all prime numbers up to that number.

- **Task 2:** Create a program that generates the first 30 Fibonacci numbers using both iterative and recursive approaches.

- **Task 3:** Write a function to calculate the greatest common divisor (GCD) and least common multiple (LCM) of two numbers.

- **Task 4:** Implement a program to find all the prime factors of a given number.

- **Task 5:** Write a program that takes a list of numbers and finds the subarray with the maximum sum (Kadane's Algorithm).

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Week 2 Guide

Objective: Learn to use control structures, loops, and functions in Python.

- Task 1: Use if-else statements and loops to check for prime numbers and list all primes up to a given number. Refer to W3Schools Python Loops.
- Task 2: Implement iterative and recursive approaches to generate Fibonacci numbers. Refer to Programiz Fibonacci.
- Task 3: Create GCD and LCM functions using Euclidean algorithm.
- Task 4: Understand prime factorization and implement the algorithm in Python.
- Task 5: Learn Kadane's Algorithm for finding the maximum sum subarray. Refer to GeeksforGeeks Kadane's Algorithm.

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