OCTO Coding Challenge 2024 - Week 2

Welcome back to Week 2 of Bentley's OCTO Coding Challenge for 2024!

Just like last week, you'll have until Thursday, December 12th, 11PM EST, to complete 2 coding puzzles.

As always, you can solve the puzzles with any tools/languages you like, including and especially AI!
In fact we'll be giving special recognition to colleagues who submit transcripts of their interactions with CoPilot Chat.

Hi, Tunc. When you submit this form, the owner will see your name and email address.

1. Part 1: Map, Filter and Reduce (20 Points)

Introduction

Big data tasks often involve mapping, filtering and aggregating (reducing) large arrays of data.
Lets practice this in our language of choice!

Problem Statement

Sum the squares of the non-negative integers in this newline-separated text file: https://tinyurl.com/4j26ymax

You don't need to use the map, filter or reduce functions specifically for any language, you can solve it any way you'd like.

Example

In the following example text file (which just contains the integers -3 to 3), the sum of the squares of the non-negative values is 0^2+1^2+2^2+3^2 = **14**: https://tinyurl.com/fdthejxa

The value must be a number

2. Part 1 (Bonus) (2 Points)

Feel free to share your solution source code for Part 1.

Remember, recognition will be given to correct submissions for the following categories:

1. Code golf: Who's got the shortest source?
2. Most elegant solution

3. Best use of AI in writing a solution.

Enter your answer

3. Part 2: Counting Primes (30 Points)

Introduction

Let's try something a step up in difficulty. What if we have to work with more fickle numbers which are harder to filter?

Prime numbers are numbers which are only evenly divisible by themselves and 1. There are many methods for checking if a number is prime, referred to as "primality tests". Prime numbers have important applications in cryptography.

Problem Statement

Sum all the prime numbers in the text file: https://tinyurl.com/3ue7ned7

Remember, 1 does not count as a prime number!

Example

In the following example text file (which just contains the integers 1 to 10), the sum of the prime numbers is 2+3+5+7 = **17**: https://tinyurl.com/2p8hnju7

The value must be a number

4. Part 2 (Bonus) (2 Points)

Feel free to share your solution source code for Part 2.

Remember, recognition will be given to correct submissions for the following categories:

1. Code golf: Who's got the shortest source?
2. Most elegant solution
3. Best use of AI in writing a solution.

Enter your answer

5. AI Bonus (10 Points)

Feel free to share transcripts of any use of CoPilot Chat in solving these puzzles.

Remember, there's a recognition category for best use of AI!

Enter your answer

☐ Send me an email receipt of my responses