Embedded Systems Internship 2024

Assignment 1: Embedia Power Matrix

You are required to write a C program to work with Embedia Power Matrix, which is a matrix with at least 3 rows by 3 columns. In this matrix, each element (except for elements of the first and last rows) should equal the number below it raised to the power of the number above it. The numbers in the matrix are represented as characters enclosed in single quotation marks.

Your program should include the following functionalities:

1. A function to calculate the power given a base and an exponent.
2. A function to convert a character representing a digit to its corresponding numerical value.
3. A function to determine if a given matrix is an Embedia Power Matrix.
4. Test cases to verify the correctness of your functions.

Please ensure that you do not use any built-in functions for these tasks.

Instructions:

1. Implement each function as described below.
2. Write a main function to test your functions.
3. Provide examples of test cases to demonstrate the correctness of your program.

Test Cases:

- Test Case 1:
  Matrix:
  ```
  '3' '2' '2'
  '8' '9' '25'
  '2' '3' '5'
  ```
  Expected Output: Embedia Power Matrix

- Test Case 2:
  Matrix:

```
'1' '3' '5'
'3' '7' '11'
'5' '11' '17'
```
Expected Output: Not an Embedia Power Matrix

- Test Case 3:
  Matrix:
```
'3' '4' '2'
'512' '256' '49'
'8' '4' '7'
```
Expected Output: Embedia Power Matrix

For the completion of the Embedia Power Matrix assignment, you are required to submit your C program file along with test cases and expected outputs. The deadline for submission is the **next Thursday, March 14th, 2024, at 11:59 PM.**

Please ensure that you submit your file.c using one of the following methods:

1. **Drive Link**: Upload your file.c to Google Drive or any other cloud storage platform and generate a shareable link. Make sure the link is set to "Anyone with the link can view/download."
2. **GitHub Link**: Create a GitHub repository for your assignment and push your file.c to the repository. Provide the link to the repository.

* Indicates required question

Email *

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Name (In English) *

Your answer

Phone Number *

Your answer

Write your link of this assignment as a drive link or GitHub link *

Your answer

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