Task: MATLAB Numeric Types and Array Manipulation

Objective: In this task, you will create a MATLAB program that covers various aspects of MATLAB numeric types, creating numeric arrays, using specialized matrix functions, and matrix concatenation.

Task Description:

You are required to write a MATLAB program that performs the following tasks:

Numeric Types:

Define and initialize a variable intVar with an integer value of your choice.
Define and initialize a variable doubleVar with a double-precision floating-point value.
Display the data type of both intVar and doubleVar using the class function.

Creating Numeric Arrays:

Create a row vector evenNumbers containing the first 5 even numbers (2, 4, 6, 8, 10).
Create a column vector primeNumbers containing the first 5 prime numbers (2, 3, 5, 7, 11).
Display both evenNumbers and primeNumbers.

Specialized Matrix Functions:

Create a 3x3 identity matrix identityMatrix using a specialized matrix function.
Create a 2x2 magic square magicSquare using another specialized matrix function.
Display both identityMatrix and magicSquare.

Matrix Concatenation:

Concatenate the evenNumbers vector horizontally with the primeNumbers vector to create a new row vector combinedVector.
Display the combinedVector.
Create a new matrix combinedMatrix by vertically concatenating identityMatrix and magicSquare.
Display the combinedMatrix.

Note:

Ensure that your program is well-commented to explain each step.
Test your code to verify its correctness.
Submission:

Create a MATLAB script (.m file) that contains your code for the tasks described.
Include comments to explain the purpose of each section of code.
Test your script to ensure it functions correctly.
Submit your MATLAB script for evaluation.

This task will assess your understanding of MATLAB numeric types, array creation, the use of specialized matrix functions, and matrix concatenation. Good luck!