

Homework Assignment: Exploring Built-in Modules and External Libraries in Python

Objective: This assignment is designed to introduce students to the utilization of built-in modules and external libraries in Python, expanding the functionality and capabilities of their programs.

Problem 1: Built-in Modules Exploration

1. Write a Python script that uses the ``datetime`` module to print the current date and time. Include the formatted date and time in the output.
2. Explore the ``random`` module to generate a random number between 1 and 10. Print the generated random number.
3. Utilize the ``math`` module to calculate the square root of a given number. Print the result.

Problem 3: Data Visualization with Matplotlib

6. Install the ``matplotlib`` library using ``pip`` (e.g., ``pip install matplotlib``). This library is widely used for data visualization.
7. Create a program that generates a simple plot using ``matplotlib``. You can plot a mathematical function, or if you have external data, visualize that.

Additional Tips:

- Utilize online resources, library documentation, and course materials to reinforce your understanding.
- Collaborate with classmates to discuss concepts and problem-solving.