**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.