Assignment: Working with Libraries and Modules

Objective:

Learn how to import and use libraries and custom modules in Python.

Part 1: Using Built-in Libraries

1. Write a function named `generate_random_number` that:
    - Imports the `random` module.
    - Returns a random integer between 1 and 100.

Example:

python
Copy code
```
# Sample output
75
```

2. Write a function named `get_current_date` that:
    - Imports the `datetime` module.
    - Returns the current date in the format `YYYY-MM-DD`.

Example:

python
Copy code
```
# Sample output
2024-10-14
```

Part 2: Creating and Importing a Custom Module

1. Create a new file named `math_operations.py` and define the following functions:
    - `add(a, b)` – returns the sum of two numbers.
    - `subtract(a, b)` – returns the difference between two numbers.
    - `multiply(a, b)` – returns the product of two numbers.
    - `divide(a, b)` – returns the quotient of two numbers.

2. In your main Python script:
    - Import the `math_operations` module.
    - Call each of the functions in the module with different inputs and print the results.

Example:

python
Copy code
```
# Sample output
Sum: 15
Difference: 5
Product: 50
Quotient: 2
```

Part 3: Using External Libraries

1. Install the **requests** library (or explain how to install it) and write a function named `get_status_code` that:
    - Imports the `requests` module.
    - Sends a GET request to `https://httpbin.org/get`.
    - Returns the status code of the response.

Example:

python
Copy code
```
# Sample output
200
```

Part 4: Using Aliases and Selective Imports

1. Write a function named `calculate_square_root` that:
    - Imports only the `sqrt` function from the `math` module.
    - Takes a number as input and returns its square root.

Example:

python
Copy code

```
# Sample input
calculate_square_root(16)

# Expected output
4.0
```

2. Write a function named `get_random_float` that:
    - Imports the `random` module with an alias `rnd`.
    - Returns a random floating-point number between 0 and 1 using `rnd`.

Example:

python
Copy code

```
# Sample output
0.74325
```

Submission Guidelines:

- Submit a Python file with all function definitions and import statements.
- Make sure your custom module (`math_operations.py`) is also included.