

Task 1: Calculate Area with Conditions.

```
Def calculate_area(length, width):
```

```
    If length == width:
```

```
        Return "This is a square!"
```

```
    Else:
```

```
        Return length * width
```

```
# Program to input values and call the calculate_area function
```

```
Length = float(input("Enter the length: "))
```

```
Width = float(input("Enter the width: "))
```

```
Result = calculate_area(length, width)
```

```
Print(result)
```

Task 2: Generate Fibonacci Series

```
Def generate_fibonacci(n):
```

```
    Fibonacci_sequence = [0, 1]
```

```
    While len(fibonacci_sequence) < n:
```

```
        Next_number = fibonacci_sequence[-1] + fibonacci_sequence[-2]
```

```
        Fibonacci_sequence.append(next_number)
```

```
    Return fibonacci_sequence[:n]
```

```
# Prompt user for input
```

```
N = int(input("Enter the number of terms in the Fibonacci sequence: "))
```

```
# Generate and display the Fibonacci sequence
```

```
Result = generate_fibonacci(n)
```

```
Print("Fibonacci sequence up to", n, "terms:", result)
```

### Task 3: MySQL Database Operations with Python

```
Import mysql.connector
```

```
# Connect to the MySQL server (replace 'your_username', 'your_password', and 'your_database' with  
your actual credentials)
```

```
Connection = mysql.connector.connect(
```

```
    Host='localhost',
```

```
    User='your_username',
```

```
    Password='your_password',
```

```
    Database='your_database'
```

```
)
```

```
# Create a cursor object to interact with the database
```

```
Cursor = connection.cursor()
```

```
# Create the "students" table if it doesn't exist
```

```
Cursor.execute("""
```

```
    CREATE TABLE IF NOT EXISTS students (
```

```
        Student_id INT AUTO_INCREMENT PRIMARY KEY,
```

```
        First_name VARCHAR(255),
```

```
        Last_name VARCHAR(255),
```

```
        Age INT,
```

```
        Grade FLOAT
```

```
    )
```

```
""")
```

```
# Insert a new student record
```

```
Cursor.execute("""
```

```
INSERT INTO students (first_name, last_name, age, grade)
VALUES (%s, %s, %s, %s)
'', ('Alice', 'Smith', 18, 95.5))
```

```
# Update the grade of the student with the first name "Alice"
```

```
Cursor.execute("""
    UPDATE students
    SET grade = %s
    WHERE first_name = %s
''', (97.0, 'Alice'))
```

```
# Delete the student with the last name "Smith"
```

```
Cursor.execute("""
    DELETE FROM students
    WHERE last_name = %s
''', ('Smith',))
```

```
# Fetch and display all student records
```

```
Cursor.execute('SELECT * FROM students')
Students = cursor.fetchall()
```

```
For student in students:
```

```
    Print(student)
```

```
# Commit changes and close the connection
```

```
Connection.commit()
Connection.close()
```