Coding Assignments:

1. Calculate the Sum:
   Write a Python function to calculate the sum of all elements in a list.

   Sample Input:
   ```
   [1, 2, 3, 4, 5]
   ```

   Sample Output:
   ```
   15
   ```

2. Factorial Calculation:
   Implement a Python function to calculate the factorial of a given number.

   Sample Input:
   ```
   5
   ```

   Sample Output:
   ```
   120
   ```

3. Palindrome Check:
   Write a Python function to check if a given string is a palindrome.

   Sample Input:
   ```
   "radar"
   ```

   Sample Output:
   ```
   True
   ```

4. List Reversal:
   Implement a Python function to reverse a list.

   Sample Input:
   ```
   [1, 2, 3, 4, 5]
   ```

Sample Output:
```
[5, 4, 3, 2, 1]
```

5. Count Vowels:
Write a Python function to count the number of vowels in a given string.

Sample Input:
```
"hello world"
```

Sample Output:
```
3
```

6. Fibonacci Sequence:
Implement a Python function to generate the Fibonacci sequence up to a specified term.

Sample Input:
```
8
```

Sample Output:
```
[0, 1, 1, 2, 3, 5, 8, 13]
```

7. Maximum Element:
Write a Python function to find the maximum element in a list.

Sample Input:
```
[4, 9, 2, 7, 5]
```

Sample Output:
```
9
```

8. Unique Elements:
Implement a Python function to return the unique elements from a list.

Sample Input:
```
```

[1, 2, 2, 3, 4, 4, 5]
```

Sample Output:
```
[1, 2, 3, 4, 5]
```

9. String Reversal:
   Write a Python function to reverse a given string.

   Sample Input:
   ```
   "python"
   ```

   Sample Output:
   ```
   "nohtyp"
   ```

10. Sum of Squares:
    Implement a Python function to calculate the sum of squares of numbers in a list.

    Sample Input:
    ```
    [1, 2, 3, 4]
    ```

    Sample Output:
    ```
    30
    ```

11. Prime Number Check:
    Write a Python function to check if a given number is a prime number.

    Sample Input:
    ```
    7
    ```

    Sample Output:
    ```
    True
    ```

12. List Intersection:
    Implement a Python function to find the intersection of two lists.
    ```

Sample Input:
```
[1, 2, 3, 4], [3, 4, 5, 6]
```

Sample Output:
```
[3, 4]
```

13. Odd and Even Lists:
Write a Python function to separate odd and even numbers into two lists.

Sample Input:
```
[1, 2, 3, 4, 5, 6]
```

Sample Output:
```
Odds: [1, 3, 5]
Evens: [2, 4, 6]
```

14. String Uppercase Check:
Implement a Python function to check if a given string contains only uppercase letters.

Sample Input:
```
"HELLO"
```

Sample Output:
```
True
```

15. Remove Duplicates:
Write a Python function to remove duplicates from a list.

Sample Input:
```
[1, 2, 2, 3, 4, 4, 5]
```

Sample Output:
```
[1, 2, 3, 4, 5]
```

```

16. Matrix Addition:
    Implement a Python function to add two matrices.

    Sample Input:
    ```
    [[1, 2], [3, 4]], [[5, 6], [7, 8]]
    ```

    Sample Output:
    ```
    [[6, 8], [10, 12]]
    ```

17. Count Occurrences:
    Write a Python function to count the occurrences of each element in a list.

    Sample Input:
    ```
    [1, 2, 2, 3, 4, 4, 5]
    ```

    Sample Output:
    ```
    {1: 1, 2: 2, 3: 1, 4: 2, 5: 1}
    ```

18. Check Anagrams:
    Implement a Python function to check if two strings are anagrams.

    Sample Input:
    ```
    "listen", "silent"
    ```

    Sample Output:
    ```
    True
    ```

19. Matrix Transposition:
    Write a Python function to transpose a matrix.

    Sample Input:
    ```
    [[1, 2, 3], [4, 5, 6]]
    ```
    ```

Sample Output:
```
[[1, 4], [2, 5], [3, 6]]
```

20. Binary to Decimal Conversion:
Implement a Python function to convert a binary number to decimal.

Sample Input:
```
"10101"
```

Sample Output:
```
21
```