Python Learning Questions (Beginner to Intermediate)

1. Hello, World!

Write a program that prints "Hello, World!" to the console.

2. Personalized Greeting

Read a name as input and print a greeting message: "Hello, [name]!".

Example:

Input: Alice

Output: "Hello, Alice!"

3. Basic Arithmetic

Read two integers from the user and print their sum, difference, product, and quotient.

Example:

Input: 6 3

Output:

Sum: 9

Difference: 3

Product: 18

Quotient: 2

4. Odd or Even

Determine if an input number is odd or even.

Example:

Input: 4

Output: "Even"

5. Age Category

Given an age as input, categorize it as 'Child' (0-12), 'Teenager' (13-19), 'Adult' (20-59), or 'Senior' (60 and above).

Example:

Input: 15

Output: "Teenager"

6. List Sum

Given a list of numbers, calculate and print their sum.

Example:

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

Output: 15

7. Count Vowels

Write a function that takes a string as input and returns the count of vowels in the string.

Example:

Input: "education"

Output: 5

8. List Multiplication

Given a list of numbers and a single multiplier value, return a new list where each element is multiplied by the given multiplier.

Example:

Input: [1, 2, 3], 3

Output: [3, 6, 9]

9. Fibonacci Sequence

Write a function that prints the first `n` numbers of the Fibonacci sequence.

Example:

Input: 5

Output: [0, 1, 1, 2, 3]

10. String Reversal

Given a string, reverse it using a loop (don't use Python's built-in reverse function).

Example:

Input: "python"

Output: "nohtyp"

11. Find Maximum

Given a list of numbers, write a program to find the largest number in the list without using the built-in `max` function.

Example:

Input: [3, 8, 2, 5, 7]

Output: 8

12. String Palindrome

Write a program to check if a given string is a palindrome. A palindrome is a word that reads the same backward as forward.

Example:

Input: "radar"

Output: "Yes"

13. List Sorting

Given a list of numbers, sort the list in ascending order without using Python's built-in `sort` function.

Example:

Input: [3, 1, 4, 1, 5, 9, 2, 6]

Output: [1, 1, 2, 3, 4, 5, 6, 9]

14. Factorial Calculation

Write a program to compute the factorial of a number. The factorial of a number `n` is the product of all positive integers less than or equal to `n`.

Example:

Input: 5

Output: 120 (because 5! = 5 x 4 x 3 x 2 x 1 = 120)

15. Unique Elements

Given a list of numbers, write a program to print the numbers that appear only once in the list.

Example:

Input: [4, 3, 2, 4, 9, 2, 3]

Output: [9]

16. Prime Numbers

Write a program to print all prime numbers less than a given number `n`.

Example:

Input: 10

Output: [2, 3, 5, 7]

17. List Intersection

Given two lists, write a program to find and print the common elements between them.

Example:

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

Output: [4, 5]

18. Count Words

Write a program that reads a sentence from the user and counts the number of words in the sentence.

Example:

Input: "Python is an amazing language"

Output: 5

19. Remove Duplicates

Given a list of numbers, remove all duplicate numbers and return the new list.

Example:

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

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

20. Number Pattern

Write a program to print the following pattern for a given `n`.

For n = 5:

```

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

```