

Python Exam

Question 1: Reverse String

Write a Python program that prompts the user to enter a string and then prints the reversed version of that string. For example, if the user enters "Hello, World!", the program should output "!dlroW ,olleH". Ensure that your program handles the user's

Question 2: Missing Number

You are given a list containing n distinct numbers taken from the range 0 to n . The list has one number missing. Write a Python function to find and return the missing number.

For example:

```
missing_number([3, 0, 1])  
# Output: [2]  
  
missing_number([9, 6, 4, 2, 3, 12, 5, 7, 0, 1])  
# Output: [8, 10, 11]
```

Rules:

1. The list will contain distinct integers.
2. The missing number is guaranteed to be in the range 0 to n .
3. The list can be of any length.

Question 3: Count vowels

Write a Python function `count_vowels_in_sentence(sentence)` that uses a loop to count the number of vowels in a sentence.

Question 4: Prime Number Generator

Write a Python program that generates prime numbers up to a given.

Your program should:

1. Prompt the user to enter a positive integer as the upper limit.
2. Implement algorithm to find all prime numbers up to the specified limit.
3. Display the list of prime numbers.

For example, if the user enters the limit as 20, the program should output the prime numbers less than or equal to 20: [2, 3, 5, 7, 11, 13, 17, 19].