Question 1: Code Along Problem: Write a Python program that takes a string as input and prints out the following:

1. The string in reverse order.
2. The number of vowels in the string.

```
user_input = input("Enter a string: ")
reversed_string = user_input[::-1]

vowels = "aeiouAEIOU"
vowel_count = 0

for char in user_input:
    if char in vowels:
        vowel_count += 1
print("Reversed string: ", reversed_string)
print("Number of vowels: ", vowel_count)
```

```
Reversed string:  zizA neefhsaT
Number of vowels:  5
```

Question 2: Hands-on Coding Project Problem: Create a Python program that: ● Takes an input number from the user. ● Checks whether the number is even or odd. ● Prints the result.

```
num = int(input("Enter a number: "))
if num % 2 == 0:
    print(f"The number {num} is Even.")
else:
    print(f"The number {num} is Odd.")
```

```
The number 5 is Odd.
```

Question 3: Virtual Environment Application Problem: Create a Python program that:

1. Takes a list of integers as input.
2. Creates a new virtual environment called sortenv.
3. Installs a package (such as numpy) in the virtual environment.
4. Sorts the list using a numpy method (numpy.sort()).
5. Prints the sorted list.

```
print("To create a virtual environment, run the following command in
the terminal:")
print("  python -m venv sortenv")

print("\nTo activate the virtual environment:")
print("  On Windows: sortenv\\Scripts\\activate")
print("\nTo install numpy in the virtual environment, use:")
print("  pip install numpy\n")

import numpy as np
```

```
user_input = input("Enter a list of numbers separated by spaces: ")
num_list = list(map(int, user_input.split()))

sorted_list = np.sort(num_list)

print("Sorted list:", sorted_list.tolist())

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Sorted list: [1, 3, 4, 5, 6, 7, 89]
```