LU05.L07 - Vigenère-Verschlüsselung programmieren

Version 1

```python
def vigenere_encrypt(text, key):
    result = ""
    key = key.lower()
    key_index = 0

    for char in text:
        if char.isalpha():
            start = ord('A') if char.isupper() else ord('a')
            shift = ord(key[key_index % len(key)]) - ord('a')
            result += chr((ord(char) - start + shift) % 26 + start)
            key_index += 1
        else:
            result += char
    return result


def vigenere_decrypt(text, key):
    result = ""
    key = key.lower()
    key_index = 0

    for char in text:
        if char.isalpha():
            start = ord('A') if char.isupper() else ord('a')
            shift = ord(key[key_index % len(key)]) - ord('a')
            result += chr((ord(char) - start - shift) % 26 + start)
            key_index += 1
        else:
            result += char
    return result

# Hauptprogramm
if __name__ == "__main__":
    eingabetext = input("Geben Sie den Text ein: ")
    schluessel = input("Geben Sie den Schlüssel ein: ")

    verschluesselt = vigenere_encrypt(eingabetext, schluessel)
    entschluesselt = vigenere_decrypt(verschluesselt, schluessel)

    print("\nVerschlüsselt:", verschluesselt)
    print("Entschlüsselt:", entschluesselt)
```

Version 2

```python
def vigenere_encrypt(text, key):
    result = ""
    key = key.lower()
    key_index = 0

    for char in text:
        if char.isalpha():
            shift = ord(key[key_index % len(key)]) - ord('a')
            start = ord('A') if char.isupper() else ord('a')
            result += chr((ord(char) - start + shift) % 26 + start)
            key_index += 1
        else:
            result += char
    return result


def vigenere_decrypt(text, key):
    result = ""
    key = key.lower()
    key_index = 0

    for char in text:
        if char.isalpha():
            shift = ord(key[key_index % len(key)]) - ord('a')
            start = ord('A') if char.isupper() else ord('a')
            result += chr((ord(char) - start - shift) % 26 + start)
            key_index += 1
        else:
            result += char
    return result


# Hauptprogramm
if __name__ == "__main__":
    eingabetext = input("Geben Sie den Text ein: ")
    schluessel = input("Geben Sie das Schlüsselwort ein: ")

    verschluesselt = vigenere_encrypt(eingabetext, schluessel)
    entschluesselt = vigenere_decrypt(verschluesselt, schluessel)

    print("\nVerschlüsselt:", verschluesselt)
```
