Python Assignment 1
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def swap_numbers(a, b):
    a, b = b, a
    return a, b

def sum_digits(num):
    if 100 <= num <= 999:
        digit1 = num // 100
        digit2 = (num % 100) // 10
        digit3 = num % 10
        return digit1 + digit2 + digit3
    else:
        return "Not a three-digit number"

def even_odd(num):
    if num % 2 == 0:
        return "Even"
    else:
        return "Odd"

def grade(marks):
    if 75 <= marks <= 100:
        return "DISTINCTION"
    elif 60 <= marks < 75:
        return "FIRST CLASS"
    elif 50 <= marks < 60:
        return "SECOND CLASS"
    elif 35 <= marks < 50:
        return "PASS CLASS"
    elif 0 <= marks < 35:
        return "FAIL"
    else:
        return "Invalid Marks"
```

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def factorial(num):
    if num < 0:
        return "Factorial not defined for negative numbers"
    elif num == 0:
        return 1
    else:
        result = 1
        for i in range(1, num + 1):
            result *= i
        return result

def is_prime(num):
    if num <= 1:
        return False
    for i in range(2, int(num**0.5) + 1):
        if num % i == 0:
            return False
    return True

def reverse_list(lst):
    return lst[::-1]

def sum_even_1_to_100():
    return sum(i for i in range(2, 101, 2))

def print_odd_numbers(lst):
    for num in lst:
        if num % 2 != 0:
            print(num)

def prime_numbers_2_to_100():
    primes = []
    for num in range(2, 101):
        if is_prime(num):
            primes.append(num)
    return primes
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def remove_duplicates(lst):
    return list(set(lst))

def strings_with_2_vowels(lst):
    vowels = "aeiouAEIOU"
    result = []
    for s in lst:
        vowel_count = sum(1 for char in s if char in vowels)
        if vowel_count >= 2:
            result.append(s)
    return result

def count_prime_odd(tup):
    prime_count = 0
    odd_count = 0
    for num in tup:
        if is_prime(num):
            prime_count += 1
        if num % 2 != 0:
            odd_count += 1
    return prime_count, odd_count

def reverse_string(s):
    return s[::-1]

def is_pangram(s):
    alphabet = set(string.ascii_lowercase)
    return set(s.lower()) >= alphabet

def is_anagram(s1, s2):
    return sorted(s1.lower()) == sorted(s2.lower())

def change_vowel_case(s):
    vowels = "aeiouAEIOU"
    result = ""
    for char in s:
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        if char in vowels:
            if char.islower():
                result += char.upper()
            else:
                result += char.lower()
        else:
            result += char
    return result

def reverse_words(sentence):
    words = sentence.split()
    reversed_words = [word[::-1] for word in words]
    return " ".join(reversed_words)

lower_encrypt = {}
upper_encrypt = {}
lower_encrypt[' '] = '0'
upper_encrypt[' '] = '0'
lower_encrypt['0'] = ' '
upper_encrypt['0'] = ' '
i = 'a'

while i <= 'z':
    if i <= 'm':
        lower_encrypt[i] = chr(ord(i) + 13)
        i = chr(ord(i) + 1)
    else:
        lower_encrypt[i] = chr(ord(i) - 13)
        i = chr(ord(i) + 1)

i = 'A'
while i <= 'Z':
    if i <= 'M':
        upper_encrypt[i] = chr(ord(i) + 13)
        i = chr(ord(i) + 1)
    else:
        upper_encrypt[i] = chr(ord(i) - 13)
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        i = chr(ord(i) + 1)

def rot13(message):
    encrypted = []
    for i in message:
        if i.isupper():
            encrypted.append(upper_encrypt.get(i,i))
        else:
            encrypted.append(lower_encrypt.get(i,i))
    return "".join(encrypted)

print(swap_numbers(5, 10))
print(sum_digits(123))
print(even_odd(7))
print(grade(76))
print(factorial(5))
print(is_prime(17))
print(reverse_list([1, 2, 3, 4, 5]))
print(sum_even_1_to_100())
print_odd_numbers([1, 2, 3, 4, 5, 6, 7])
print(prime_numbers_2_to_100())
print(remove_duplicates([1, 2, 2, 3, 4, 4, 5]))
print(strings_with_2_vowels(["hello", "world", "aeiou", "python"]))
print(count_prime_odd((1, 2, 3, 4, 5, 6, 7)))
print(reverse_string("hello"))
print(is_pangram("The quick brown fox jumps over the lazy dog"))
print(is_anagram("listen", "silent"))
print(change_vowel_case("hEllo"))
print(reverse_words("hello world how are you"))
print(rot13("Pnrfne pvcure? V zhpu cersre Pnrfne fnynq!"))
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