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**Assignment - 1.2**

# Task Description#1

Write a comment: # Function to check if a string is a valid palindrome (ignoring spaces and case) and allow Copilot to complete it. **CODE**

def is\_palindrome(s: str) -> bool: cleaned = ''.join(s.split()).lower() return cleaned == cleaned[::-1] print(is\_palindrome("A man a plan a canal Panama")) # True print(is\_palindrome("Hello World")) # False

## OUTPUT

True

False

# Task Description#2

Generate a Python function that returns the Fibonacci sequence up to n terms. Prompt with only a function header and docstring. **CODE**

def fibonacci(n: int) -> list:

seq = [] a, b = 0, 1 for \_ in range(n): seq.append(a) a, b = b, a + b return seq print(fibonacci(5)) print(fibonacci(10))

# Task Description#3

Write a comment like # Function to reverse a string and use Copilot to generate the function.

## CODE

# Function to reverse a string def reverse\_string(s: str) -> str:

return s[::-1] # Example usage print(reverse\_string("hello")) print(reverse\_string("Python"))

## OUTPUT

olleh nohtyP

# Task Description#4

Generate a program that simulates a basic calculator (add, subtract, multiply, divide). Write the comment: # Simple calculator with 4 operations and let AI complete it **CODE**

def calculator():

print("Basic Calculator") print("Select operation:") print("1. Add") print("2. Subtract") print("3. Multiply") print("4. Divide") choice = input("Enter choice (1/2/3/4): ") num1 = float(input("Enter first number: ")) num2 = float(input("Enter second number: "))

if choice == '1':

print(f"Result: {num1} + {num2} = {num1 + num2}")

elif choice == '2': print(f"Result: {num1} - {num2} = {num1 - num2}") elif choice == '3': print(f"Result: {num1} \* {num2} = {num1 \* num2}") elif choice == '4': if num2 != 0:

print(f"Result: {num1} / {num2} = {num1 / num2}")

else: print("Error: Division by zero is not allowed.") else: print("Invalid input") calculator()

## OUTPUT

Basic Calculator

Select operation:

1. Add
2. Subtract
3. Multiply
4. Divide

Enter choice (1/2/3/4): 1

Enter first number: 10

Enter second number: 5

Result: 10.0 + 5.0 = 15.0

Enter choice (1/2/3/4): 4

Enter first number: 7

Enter second number: 0

Error: Division by zero is not allowed.

# Task Description#5

Use a comment to instruct AI to write a function that reads a file and returns the number of lines.

## CODE

# Function to read a file and return the number of lines def count\_lines(filename: str) -> int: with open(filename, "r") as f:

lines = f.readlines() return len(lines)

# Example usage

# Let's create a sample file first with open("sample.txt", "w") as f:

f.write("First line\n")

f.write("Second line\n")

f.write("Third line\n") print("Number of lines:", count\_lines("sample.txt"))

## OUTPUT

Number of lines: 3