AI ASSISTED CODING

LAB TEST-1

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Question 1:

write a python code to calculate the sum of odd and even numbersin a given list.using zero shot promt.

Prompt:

Write a Python function that calculates and prints the sum of odd and even numbers in a given list.

test1_1.py > main

```python
def calculate_odd_even_sums(numbers):
    """
    Calculate the sum of odd and even numbers in a given list.

    Args:
        numbers (list): A list of integers

    Returns:
        tuple: (sum_of_odd, sum_of_even)
    """
    sum_odd = 0
    sum_even = 0

    for num in numbers:
        if num % 2 == 0:  # Even number
            sum_even += num
        else:  # Odd number
            sum_odd += num

    return sum_odd, sum_even

def main():
    # Example usage with a sample list
    sample_list = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

    print("Sample list:", sample_list)

    # Calculate sums
    odd_sum, even_sum = calculate_odd_even_sums(sample_list)

    # Display results
    print(f"Sum of odd numbers: {odd_sum}")
    print(f"Sum of even numbers: {even_sum}")
    print(f"Total sum: {odd_sum + even_sum}")

    # Interactive mode - allow user to input their own list
    print("\n" + "="*50)
```

```python
def main():

    # Calculate sums
    odd_sum, even_sum = calculate_odd_even_sums(sample_list)

    # Display results
    print(f"Sum of odd numbers: {odd_sum}")
    print(f"Sum of even numbers: {even_sum}")
    print(f"Total sum: {odd_sum + even_sum}")

    # Interactive mode - allow user to input their own list
    print("\n" + "="*50)
    print("Interactive Mode:")

    try:
        user_input = input("Enter numbers separated by spaces: ")
        user_list = [int(x) for x in user_input.split()]

        if user_list:
            user_odd_sum, user_even_sum = calculate_odd_even_sums(user_list)
            print(f"\nYour list: {user_list}")
            print(f"Sum of odd numbers: {user_odd_sum}")
            print(f"Sum of even numbers: {user_even_sum}")
            print(f"Total sum: {user_odd_sum + user_even_sum}")
        else:
            print("No numbers entered.")

    except ValueError:
        print("Invalid input. Please enter only integers separated by spaces.")
    except KeyboardInterrupt:
        print("\nProgram terminated by user.")

if __name__ == "__main__":
    main()
```

OUTPUT:

```
Sample list: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
Sum of odd numbers: 25
Sum of even numbers: 30
Total sum: 55

==================================================
Interactive Mode:
Enter numbers separated by spaces: 2 4 2 5 7 9 7 5 6 4 3 2 9 7 1 9 2 6 4

Your list: [2, 4, 2, 5, 7, 9, 7, 5, 6, 4, 3, 2, 9, 7, 1, 9, 2, 6, 4]
Sum of odd numbers: 62
Sum of even numbers: 32
Total sum: 94
PS C:\Users\preksha\ai assistent>
```

Question 2:

write a python code for a given list of integers,remove duplicates and print the sorted result.use one shot promting.

Promt: Given a list of integers, remove duplicates and print the sorted result.

test1_2.py > main

```python
def remove_duplicates_and_sort(numbers):
    """
    Remove duplicates from a list of integers and return sorted result using set method.

    Args:
        numbers (list): A list of integers

    Returns:
        list: A sorted list with duplicates removed
    """
    # Using set to remove duplicates, then sort
    unique_numbers = list(set(numbers))
    unique_numbers.sort()
    return unique_numbers

def main():
    # Example usage with a sample list containing duplicates
    sample_list = [5, 2, 8, 2, 9, 1, 5, 3, 7, 1, 4, 6, 3, 8]

    print("Original list:", sample_list)
    print(f"Length of original list: {len(sample_list)}")

    result1 = remove_duplicates_and_sort(sample_list)
    print(f"\nUsing set method: {result1}")
    print(f"Length after removing duplicates: {len(result1)}")

    # Interactive mode - allow user to input their own list
    print("\n" + "="*60)
    print("Interactive Mode:")

    try:
        user_input = input("Enter integers separated by spaces: ")
        user_list = [int(x) for x in user_input.split()]

        if user_list:
            print(f"\nYour original list: {user_list}")
            print(f"Length of original list: {len(user_list)}")
```

```python
test1_2.py > main
def main():
        user_input = input("Enter integers separated by spaces: ")
        user_list = [int(x) for x in user_input.split()]

        if user_list:
            print(f"\nYour original list: {user_list}")
            print(f"Length of original list: {len(user_list)}")

            # Process the user's list
            processed_list = remove_duplicates_and_sort(user_list)
            print(f"List after removing duplicates and sorting: {processed_list}")
            print(f"Length after processing: {len(processed_list)}")

            # Show which numbers were duplicates
            original_set = set(user_list)
            if len(original_set) < len(user_list):
                duplicates = []
                for num in original_set:
                    if user_list.count(num) > 1:
                        duplicates.append(num)
                print(f"Duplicate numbers found: {sorted(duplicates)}")
            else:
                print("No duplicates found in your list.")

        else:
            print("No numbers entered.")

    except ValueError:
        print("Invalid input. Please enter only integers separated by spaces.")
    except KeyboardInterrupt:
        print("\nProgram terminated by user.")

if __name__ == "__main__":
    main()
```

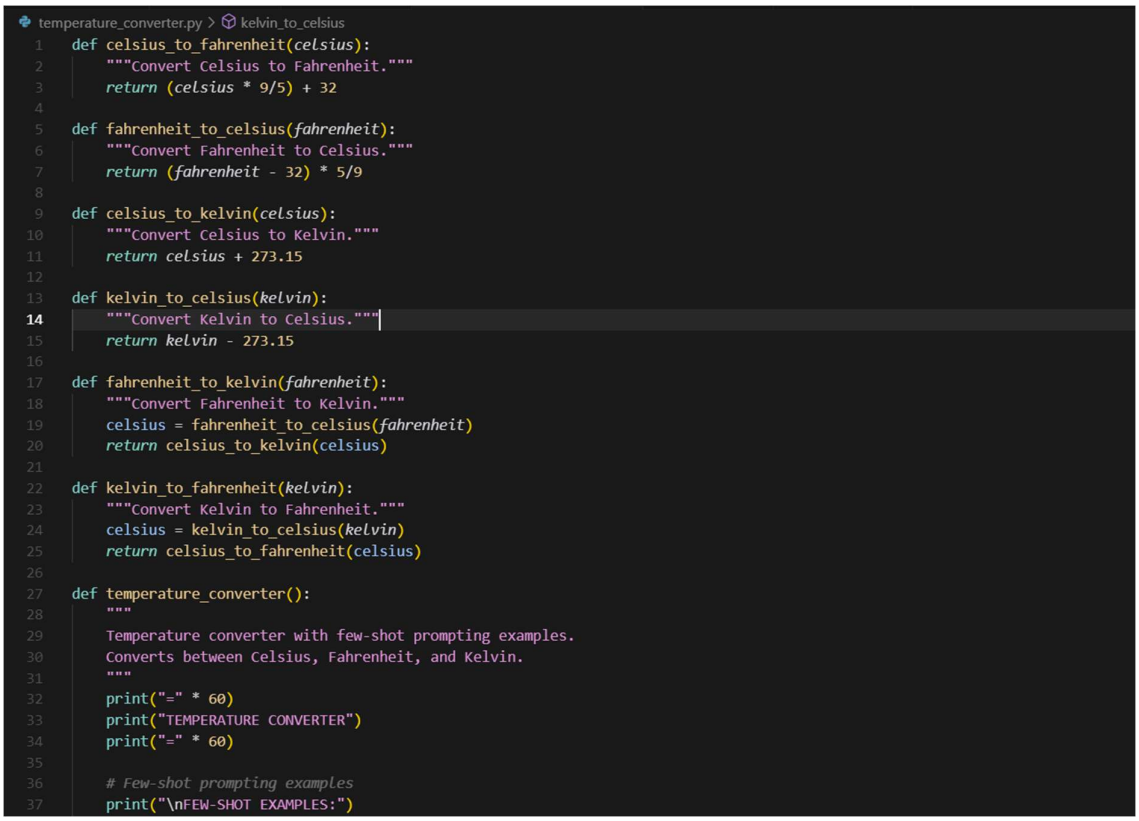
Output:

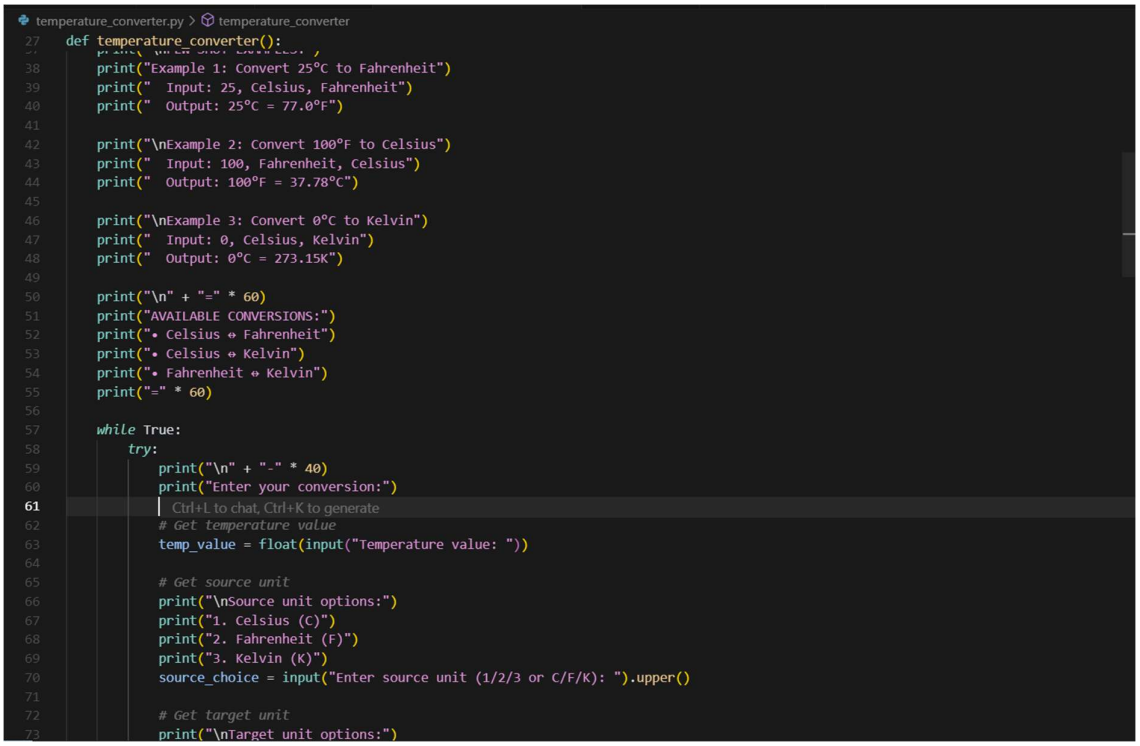
```
Original list: [5, 2, 8, 2, 9, 1, 5, 3, 7, 1, 4, 6, 3, 8]
Length of original list: 14

Using set method: [1, 2, 3, 4, 5, 6, 7, 8, 9]
Length after removing duplicates: 9

============================================================
Interactive Mode:
Enter integers separated by spaces: 5 4 3 6 2 3 6 5 8 2 5 6

Your original list: [5, 4, 3, 6, 2, 3, 6, 5, 8, 2, 5, 6]
Length of original list: 12
List after removing duplicates and sorting: [2, 3, 4, 5, 6, 8]
Length after processing: 6
Duplicate numbers found: [2, 3, 5, 6]
PS C:\Users\preksha\ai assistent>
```

Question 3:

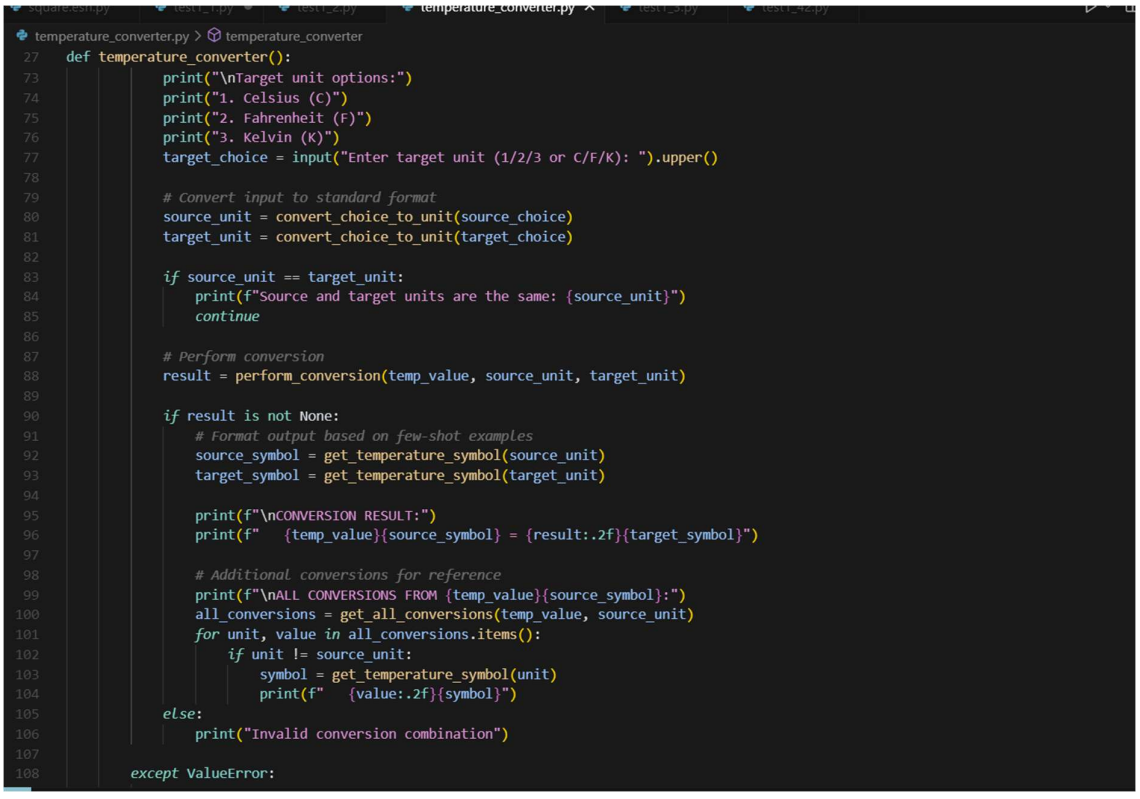
write a python function that converts the temperture between celsius,fahrenheit and kalvin based on user choice.Use few shot promiting**.**

Prompt: Write a Python function that converts temperature between Celsius, Fahrenheit, and Kelvin based on user choice.





```
temperature_converter.py > temperature_converter
def temperature_converter():
    print("Example 1: Convert 25°C to Fahrenheit")
    print("  Input: 25, Celsius, Fahrenheit")
    print("  Output: 25°C = 77.0°F")

    print("\nExample 2: Convert 100°F to Celsius")
    print("  Input: 100, Fahrenheit, Celsius")
    print("  Output: 100°F = 37.78°C")

    print("\nExample 3: Convert 0°C to Kelvin")
    print("  Input: 0, Celsius, Kelvin")
    print("  Output: 0°C = 273.15K")

    print("\n" + "=" * 60)
    print("AVAILABLE CONVERSIONS:")
    print("• Celsius ↔ Fahrenheit")
    print("• Celsius ↔ Kelvin")
    print("• Fahrenheit ↔ Kelvin")
    print("=" * 60)

    while True:
        try:
            print("\n" + "-" * 40)
            print("Enter your conversion:")
            Ctrl+L to chat, Ctrl+K to generate
            # Get temperature value
            temp_value = float(input("Temperature value: "))

            # Get source unit
            print("\nSource unit options:")
            print("1. Celsius (C)")
            print("2. Fahrenheit (F)")
            print("3. Kelvin (K)")
            source_choice = input("Enter source unit (1/2/3 or C/F/K): ").upper()

            # Get target unit
            print("\nTarget unit options:")
```



```
temperature_converter.py > temperature_converter
def temperature_converter():
            print("\nTarget unit options:")
            print("1. Celsius (C)")
            print("2. Fahrenheit (F)")
            print("3. Kelvin (K)")
            target_choice = input("Enter target unit (1/2/3 or C/F/K): ").upper()

            # Convert input to standard format
            source_unit = convert_choice_to_unit(source_choice)
            target_unit = convert_choice_to_unit(target_choice)

            if source_unit == target_unit:
                print(f"Source and target units are the same: {source_unit}")
                continue

            # Perform conversion
            result = perform_conversion(temp_value, source_unit, target_unit)

            if result is not None:
                # Format output based on few-shot examples
                source_symbol = get_temperature_symbol(source_unit)
                target_symbol = get_temperature_symbol(target_unit)

                print(f"\nCONVERSION RESULT:")
                print(f"   {temp_value}{source_symbol} = {result:.2f}{target_symbol}")

                # Additional conversions for reference
                print(f"\nALL CONVERSIONS FROM {temp_value}{source_symbol}:")
                all_conversions = get_all_conversions(temp_value, source_unit)
                for unit, value in all_conversions.items():
                    if unit != source_unit:
                        symbol = get_temperature_symbol(unit)
                        print(f"   {value:.2f}{symbol}")
            else:
                print("Invalid conversion combination")

        except ValueError:
```

temperature_converter.py > temperature_converter

```
def temperature_converter():
                print("Invalid input. Please enter a valid number.")
            except KeyboardInterrupt:
                print("\n\nGoodbye! Thanks for using the temperature converter!")
                break

            # Ask if user wants to continue
            continue_choice = input("\nConvert another temperature? (y/n): ").lower()
            if continue_choice not in ['y', 'yes']:
                print("\nGoodbye! Thanks for using the temperature converter!")
                break

def convert_choice_to_unit(choice):
    """Convert user choice to standard unit name."""
    if choice in ['1', 'C', 'CELSIUS']:
        return 'Celsius'
    elif choice in ['2', 'F', 'FAHRENHEIT']:
        return 'Fahrenheit'
    elif choice in ['3', 'K', 'KELVIN']:
        return 'Kelvin'
    else:
        return None

def get_temperature_symbol(unit):
    """Get the symbol for temperature unit."""
    symbols = {
        'Celsius': '°C',
        'Fahrenheit': '°F',
        'Kelvin': 'K'
    }
    return symbols.get(unit, '')

def perform_conversion(value, source_unit, target_unit):
    """Perform the actual temperature conversion."""
    conversions = {
        ('Celsius', 'Fahrenheit'): celsius_to_fahrenheit,
        ('Fahrenheit', 'Celsius'): fahrenheit_to_celsius,
```

temperature_converter.py > temperature_converter

```
    return symbols.get(unit, '')

def perform_conversion(value, source_unit, target_unit):
    """Perform the actual temperature conversion."""
    conversions = {
        ('Celsius', 'Fahrenheit'): celsius_to_fahrenheit,
        ('Fahrenheit', 'Celsius'): fahrenheit_to_celsius,
        ('Celsius', 'Kelvin'): celsius_to_kelvin,
        ('Kelvin', 'Celsius'): kelvin_to_celsius,
        ('Fahrenheit', 'Kelvin'): fahrenheit_to_kelvin,
        ('Kelvin', 'Fahrenheit'): kelvin_to_fahrenheit
    }

    conversion_func = conversions.get((source_unit, target_unit))
    if conversion_func:
        return conversion_func(value)
    return None

def get_all_conversions(value, source_unit):
    """Get all possible conversions from a given temperature."""
    all_units = ['Celsius', 'Fahrenheit', 'Kelvin']
    conversions = {}

    for unit in all_units:
        result = perform_conversion(value, source_unit, unit)
        if result is not None:
            conversions[unit] = result

    return conversions

def main():
    """Main function to run the temperature converter."""
    temperature_converter()

if __name__ == "__main__":
    main()
```

OUTPUT:

```
============================================================
TEMPERATURE CONVERTER
============================================================

FEW-SHOT EXAMPLES:
Example 1: Convert 25°C to Fahrenheit
  Input: 25, Celsius, Fahrenheit
  Output: 25°C = 77.0°F

Example 2: Convert 100°F to Celsius
  Input: 100, Fahrenheit, Celsius
  Output: 100°F = 37.78°C

Example 3: Convert 0°C to Kelvin
  Input: 0, Celsius, Kelvin
  Output: 0°C = 273.15K

============================================================
AVAILABLE CONVERSIONS:
• Celsius ↔ Fahrenheit
• Celsius ↔ Kelvin
• Fahrenheit ↔ Kelvin
============================================================
```

```
----------------------------------------
Enter your conversion:
Temperature value: 76

Source unit options:
1. Celsius (C)
2. Fahrenheit (F)
3. Kelvin (K)
Enter source unit (1/2/3 or C/F/K): C

Target unit options:
1. Celsius (C)
2. Fahrenheit (F)
3. Kelvin (K)
Enter target unit (1/2/3 or C/F/K): F

CONVERSION RESULT:
   76.0°C = 168.80°F

ALL CONVERSIONS FROM 76.0°C:
   168.80°F
   349.15K

Convert another temperature? (y/n): 98

Goodbye! Thanks for using the temperature converter!
PS C:\Users\preksha\ai assistent>
```

Question 4:

Write a python function to remove the punctuaion,convert to lowercase, and remove stop words from a given text.use zero shot promting.

Prompt: Write a Python function that takes a string, removes punctuation, converts it to lowercase, and removes stop words.

test1_42.py > main

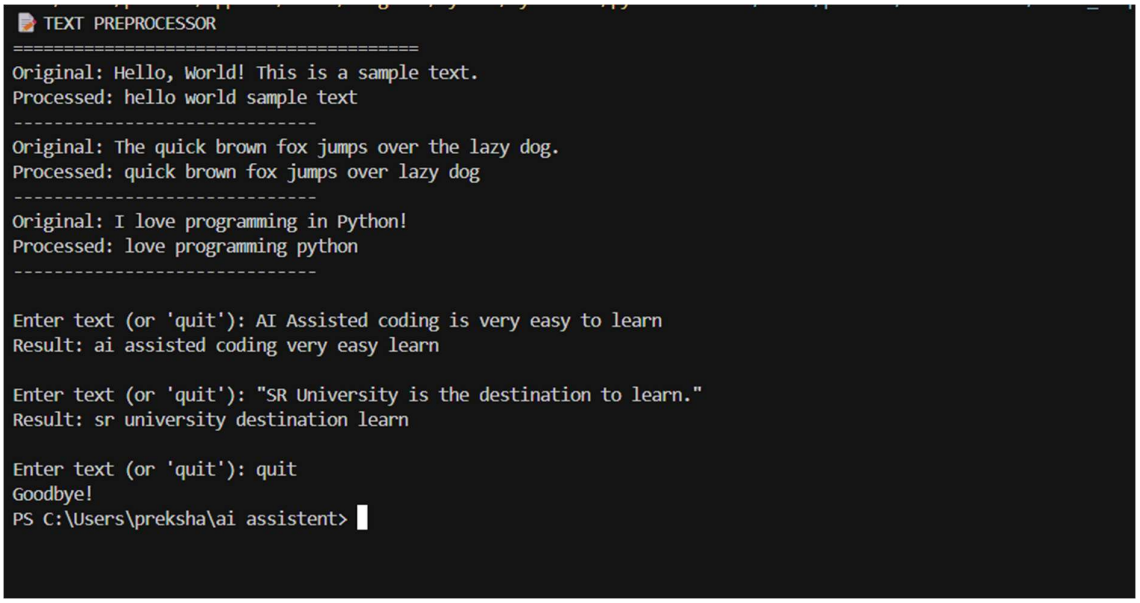
```python
import string

def preprocess_text(text):
    """Remove punctuation, convert to lowercase, and remove stop words."""

    # Convert to lowercase
    text = text.lower()

    # Remove punctuation
    text = text.translate(str.maketrans('', '', string.punctuation))

    # Split into words
    words = text.split()

    # Common stop words
    stop_words = {'a', 'an', 'and', 'are', 'as', 'at', 'be', 'by', 'for', 'from',
                  'has', 'he', 'in', 'is', 'it', 'its', 'of', 'on', 'that', 'the',
                  'to', 'was', 'will', 'with', 'i', 'you', 'we', 'they', 'this',
                  'these', 'those', 'have', 'had', 'do', 'does', 'did'}

    # Remove stop words
    filtered_words = [word for word in words if word not in stop_words]

    return ' '.join(filtered_words)

def main():
    """Demo the text preprocessor."""
    print("📝 TEXT PREPROCESSOR")
    print("=" * 40)

    # Examples
    examples = [
        "Hello, World! This is a sample text.",
        "The quick brown fox jumps over the lazy dog.",
        "I love programming in Python!"
    ]
```


square.esh.py | test1_1.py | test1_2.py | temperature_converter.py | test1_3.py | test1_42.py

test1_42.py > main

```python
def main():
    """Demo the text preprocessor."""
    print("📝 TEXT PREPROCESSOR")
    print("=" * 40)

    # Examples
    examples = [
        "Hello, World! This is a sample text.",
        "The quick brown fox jumps over the lazy dog.",
        "I love programming in Python!"
    ]

    for text in examples:
        print(f"Original: {text}")
        print(f"Processed: {preprocess_text(text)}")
        print("-" * 30)

    # Interactive
    while True:
        user_input = input("\nEnter text (or 'quit'): ")
        if user_input.lower() == 'quit':
            break
        print(f"Result: {preprocess_text(user_input)}")

    print("Goodbye!")

if __name__ == "__main__":
    main()
```


OUTPUT:


TEXT PREPROCESSOR
==========
Original: Hello, World! This is a sample text.
Processed: hello world sample text

Original: The quick brown fox jumps over the lazy dog.
Processed: quick brown fox jumps over lazy dog

Original: I love programming in Python!
Processed: love programming python

Enter text (or 'quit'): AI Assisted coding is very easy to learn
Result: ai assisted coding very easy learn
Enter text (or 'quit'): "SR University is the destination to learn."
Result: sr university destination learn
Enter text (or 'quit'): quit
Goodbye!
PS C:\Users\preksha\ai assistent>