Assignment 2

1. Write a program to count word frequencies in a given text.

```
def count_word_frequencies(text):

      words = text.lower().split()
      freq = {}
      for word in words:
            word = word.strip('.,!?";:')
            freq[word] = freq.get(word, 0) + 1
      return freq

text ="How are you,what are you doing? I hope you are doing
       well."

frequencies = count_word_frequencies(text)
print(frequencies)
```

Output:

```
{'how': 1, 'are': 3, 'you,what': 1, 'you': 2, 'doing': 2, 'i': 1,
'hope': 1, 'well': 1}
```

2. Palindrome Checker Write a program that checks if a given word is a palindrome.

```
def is_palindrome(word):
    if word == word[::-1]:
        return True
    else:
        return False
# Example usage
word = "madam"
if is_palindrome(word)==True:
    print(f"{word} is a palindrome")
else:
    print(f"{word} is not a palindrome")
```

Output:

madam is a palindrome

3. List Manipulation Create a list of numbers, then write a program that prints the square of each number in the list.

```
# List Manipulation – Square Each Number
def square_list(numbers):
    return [x ** 2 for x in numbers]

# Example usage
nums = [1, 2, 3, 4, 5]
squared = square_list(nums)
print("Original list:", nums)
print("Squared list:", squared)
```

Output:

Original list: [1, 2, 3, 4, 5]

Squared list: [1, 4, 9, 16, 25]