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

**Sol: from collections import Counter**

**def count\_word\_frequencies(text):**

**# Split the text into words**

**words = text.split()**

**# Use Counter to count word frequencies**

**word\_count = Counter(words)**

**return word\_count**

**def main():**

**user\_input = input("Enter the text: ")**

**word\_frequencies = count\_word\_frequencies(user\_input)**

**# Print word frequencies**

**print("Word Frequencies:")**

**for word, count in word\_frequencies.items():**

**print(f"{word}: {count}")**

**if \_\_name\_\_ == "\_\_main\_\_":**

**main()**

2)Mini Project: Develop a basic to-do list program using functions and data structures

add features like adding tasks in the to-do list, display the tasks and quitting the loop

**Sol: # Define the display\_list function**

**def display\_list(todo\_list):**

**if not todo\_list:**

**print("Your to-do list is empty.")**

**else:**

**print("To-Do List:")**

**for index, task in enumerate(todo\_list, start=1):**

**print(f"{index}. {task}")**

**# Define the add\_task function**

**def add\_task(todo\_list, task):**

**todo\_list.append(task)**

**print(f"Task '{task}' added to the to-do list.")**

**# Define the remove\_task function**

**def remove\_task(todo\_list, task\_index):**

**if 1 <= task\_index <= len(todo\_list):**

**removed\_task = todo\_list.pop(task\_index - 1)**

**print(f"Task '{removed\_task}' removed from the to-do list.")**

**else:**

**print("Invalid task index. Please enter a valid index.")**

**# Implement the main function**

**def main():**

**todo\_list = []**

**while True:**

**print("\nMenu:")**

**print("1. Display To-Do List")**

**print("2. Add Task")**

**print("3. Remove Task")**

**print("4. Quit")**

**choice = input("Enter your choice: ")**

**if choice == "1":**

**display\_list(todo\_list)**

**elif choice == "2":**

**task = input("Enter the task: ")**

**add\_task(todo\_list, task)**

**elif choice == "3":**

**try:**

**task\_index = int(input("Enter the index of the task to remove: "))**

**remove\_task(todo\_list, task\_index)**

**except ValueError:**

**print("Invalid input. Please enter a valid index.")**

**elif choice == "4":**

**print("Goodbye!")**

**break**

**else:**

**print("Invalid choice. Please enter a valid option (1-4).")**

**if \_\_name\_\_ == "\_\_main\_\_":**

**main()**