```
# Initialize an empty to-do dictionary
todo_dict = {}

print("To-Do List Manager")

def menu():
    print("1. Add Task")
    print("2. View Tasks")
    print("3. Remove Task")
    print("4. Quit")
    return input("Enter your choice (1/2/3/4): ")

while True:
    choice = menu()

    if choice == '1':
        task = input("Enter the task: ")
        priority = input("Enter the priority (low, medium, high): ")
        todo_dict[len(todo_dict) + 1] = {'task': task, 'priority': priority}
        print(f"Task '{task}' added to the to-do list with priority '{priority}'.")
    elif choice == '2':
        if not todo_dict:
            print("The to-do list is empty.")
        else:
            print("Tasks in the to-do list:")
            for key, value in todo_dict.items():
                print(f"{key}. Task: {value['task']} | Priority: {value['priority']}")
    elif choice == '3':
        if not todo_dict:
            print("The to-do list is empty. No tasks to remove.")
        else:
            index = int(input("Enter the index of the task to remove: "))
            if index in todo_dict:
                removed_task = todo_dict.pop(index)
                print(f"Task '{removed_task['task']}' removed from the to-do list.")
            else:
                print("Invalid task index. Please choose a valid task to remove.")
    elif choice == '4':
        print("Goodbye!")
        break
    else:
        print("Invalid choice. Please choose a valid option (1/2/3/4).")
```