## Develop a Command-Line Application

### **Exercise Description**

Create a console application that allows users to insert commands of various operations. The application should provide a menu for users to select from different operations, execute the chosen operation on user-provided input, and display the results. The application should continue running until the user chooses to exit.

**Requirements:**

1. **User Interaction:**
   * Display a menu with a list of operations.
   * Prompt the user to select an operation by entering the corresponding number.
   * Prompt the user to enter an input to be analyzed.
2. **Operations:**
   * **Palindrome Check:** Determine if the input is a palindrome (reads the same forwards and backwards).
   * **Lowercase Check:** Check if all characters in the input string are lowercase.
   * **Digit Check:** Verify if all characters in the input are digits.
   * **Length Check:** Check if the length of the input exceeds a predefined threshold.
   * **Empty Check:** Check if the input string is empty.
   * **Exit Program:** Provide an option to exit the application gracefully.
3. **Execution:**
   * Based on the user's selection, execute the corresponding operation.
   * Display the result of the operation to the user.
   * If the selected operation is not valid, inform the user and allow them to try again.
   * Continue to display the menu and prompt for input until the user selects the exit option.
4. **Error Handling:**
   * Add at least one error handling to your code.
5. **Guidelines:**
   * Try to make your code maintainable and generic.
   * Keep your code clean.

**Example Scenario:**

1. The application displays a menu with the available operations.
2. The user selects the option to check if a string is a palindrome.
3. The user enters the string "racecar".
4. The application checks and confirms that "racecar" is a palindrome.
5. The user then selects the option to check if a string is empty.
6. The user enters an empty string.
7. The application confirms that the string is empty.
8. The user continues to perform various operations until they choose to exit the application.

Example for the program output:



