

## Metricstics Application Test Cases

### Purpose

The purpose of these test cases is to validate the functionality of the Metricstics application, ensuring that statistical calculations are performed correctly and that the application handles various data scenarios properly.

### Test Environment

Python version: 3.x

### Precondition

The Metricstics application is properly installed.

The Tkinter library is installed and working.

The user has access to the application files and test datasets.

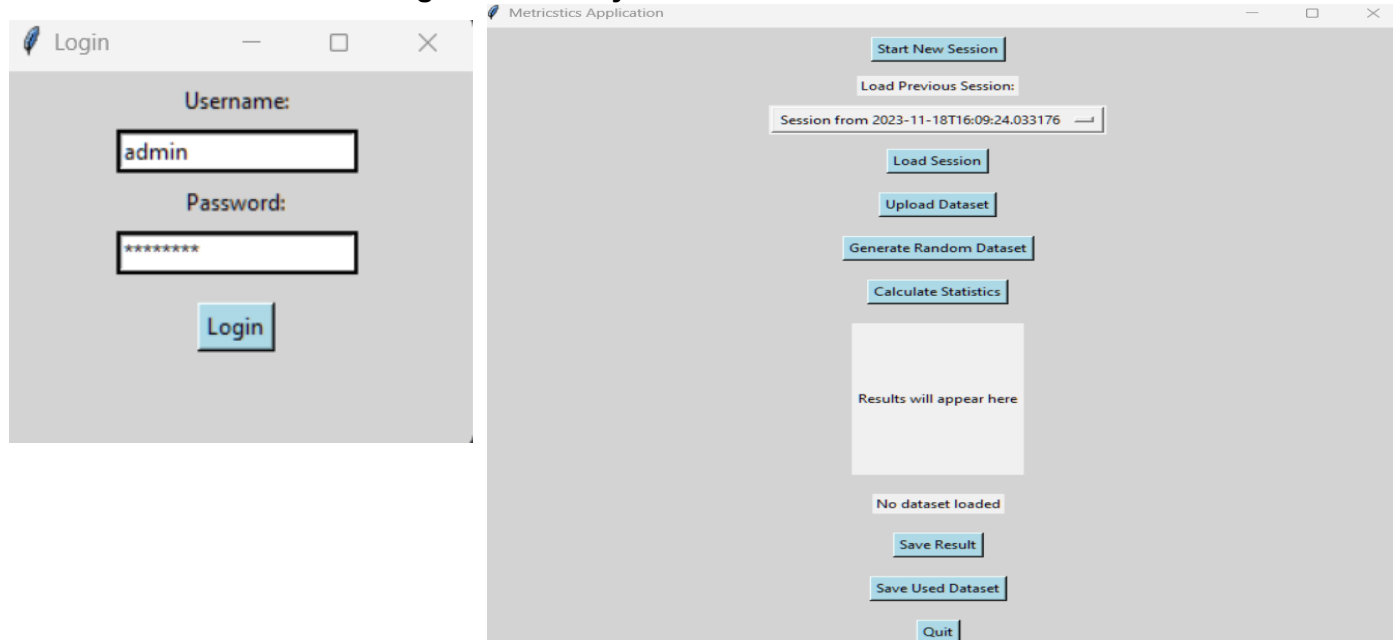
### Test Cases

#### Test Case 1: User Login

**Objective:** To verify that the user can log in with valid credentials.

**Expected Result:** The user is successfully logged in, and the main application window opens.

**Actual Result:** User able to login successfully



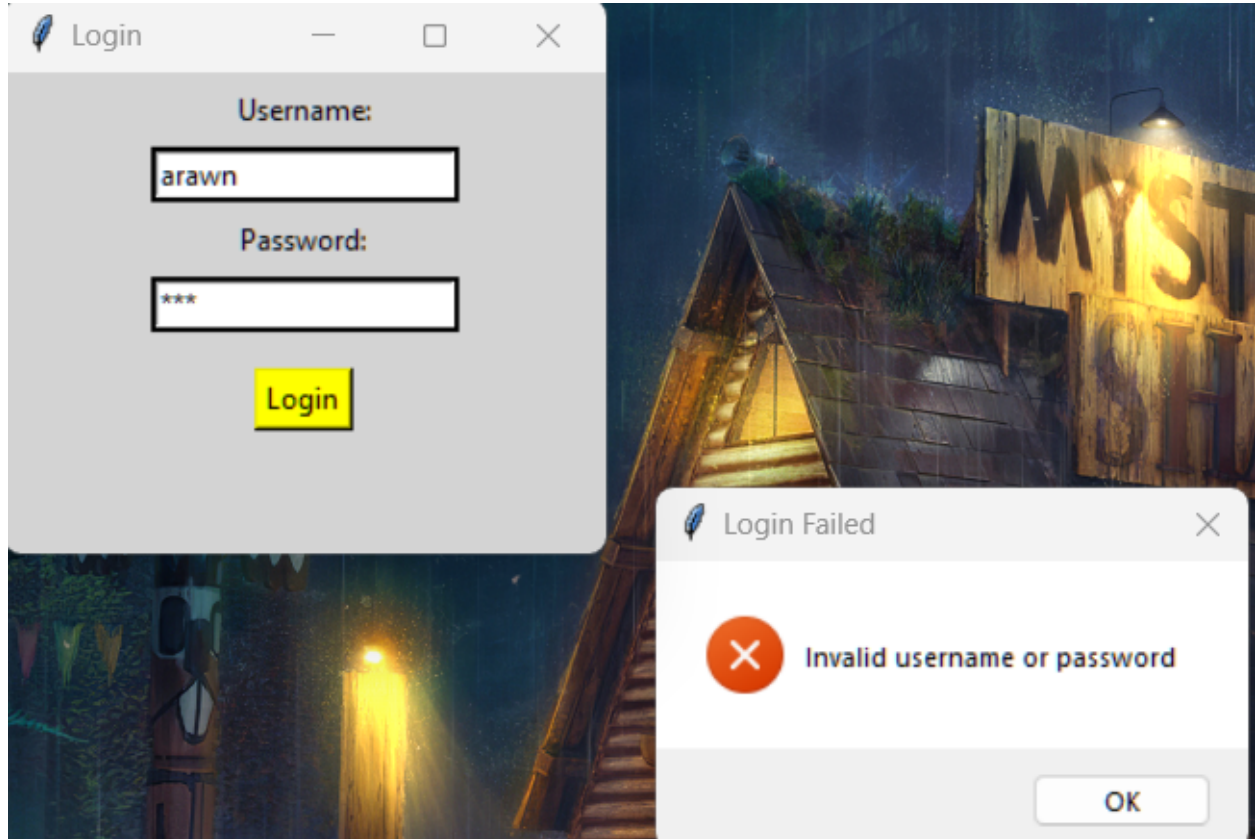
**Status:** PASS

### Test Case 2: Handling Incorrect Login Credentials

**Objective:** To verify that the application handles incorrect login credentials.

**Expected Result:** An error message appears indicating invalid credentials.

**Actual Result:** When invalid credential provided it throws error



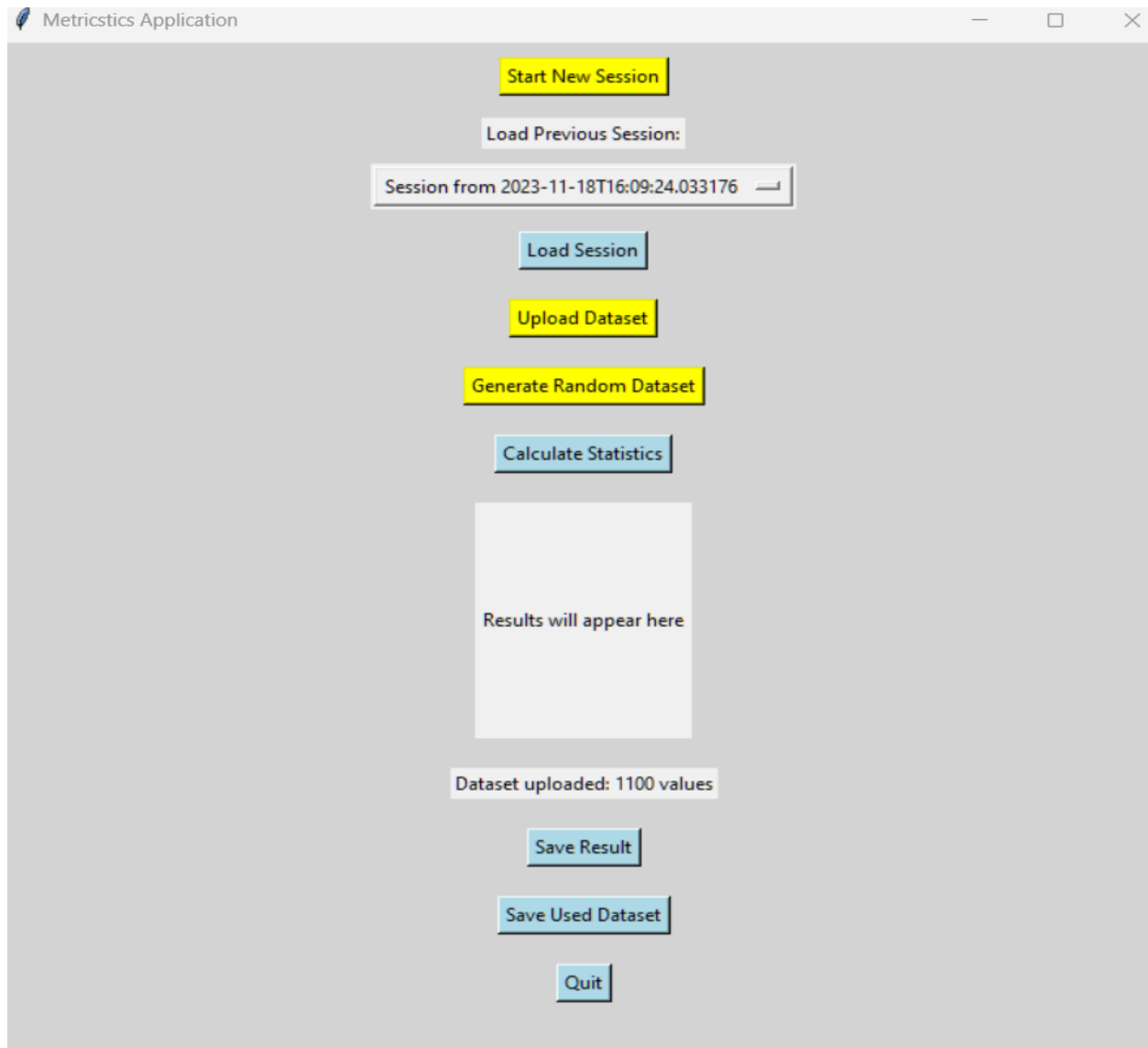
**Status:** Pass

### Test Case 3: Upload Valid Dataset

**Objective:** To verify that the user can upload a valid dataset.

**Expected Result:** The dataset is successfully uploaded, and the dataset size is displayed.

**Actual Result:** Successfully showed dataset count correctly



**Status:** Pass

#### Test Case 4: Calculate the Mean,Median,Mode,Maximum Value,Minimum Value of a Dataset

Objective: Verify that the application calculates the correct result for the dataset.

Input Data: Valid dataset Having less than 10 mean

#### Expected Result:

Mean: 30

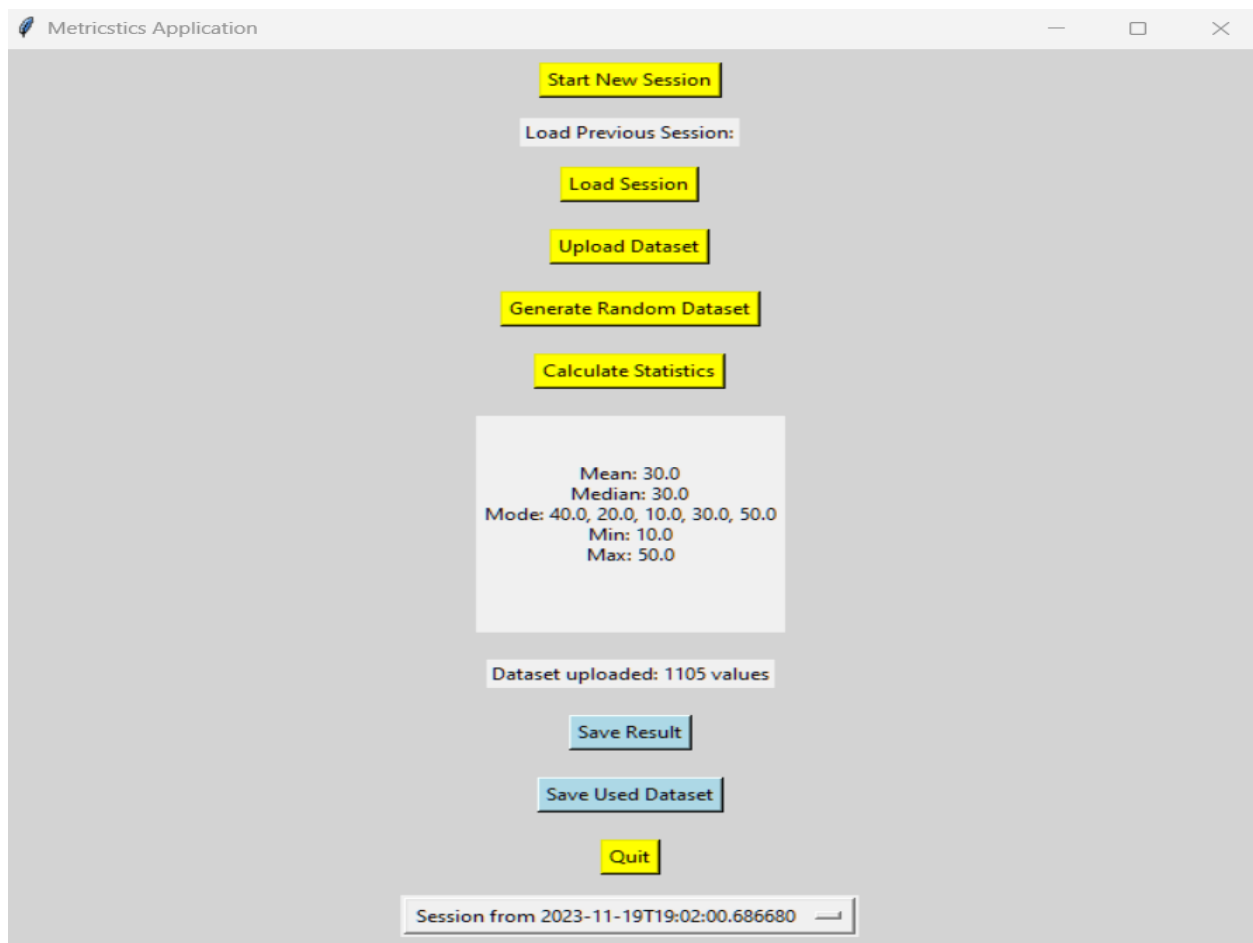
Median: 30

Maximum Value: 50

Minimum Value: 10

Mode: 40.0,20.0,10.0,30.0,50.0

#### Actual Result: Result as expected



Status: Pass

### Test Case 5: Display show mode when modes are more than 10 values

**Objective:** Verify that the application calculates the correct result and display show mode button .

**Input Data:** Valid dataset Having more than 10 mean

#### Expected Result:

**Mean:** 360

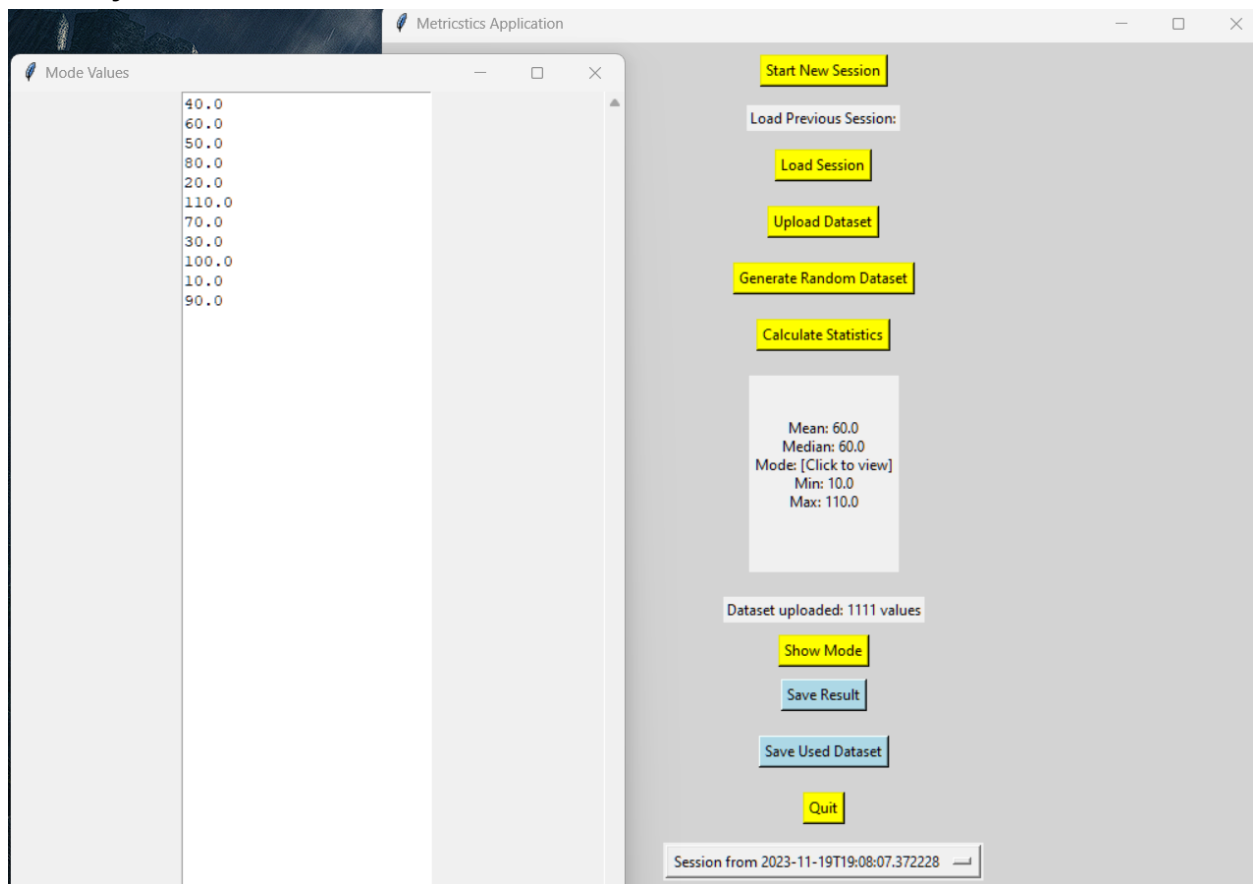
**Median:** 60

**Maximum Value:** 110

**Minimum Value:** 10

**Mode:** 40.0,60.0,50.0,80.0,20.0,110.0,70.0,30.0,100.0,10.0,90.0

**Actual Result:** Show mode button is displayed and if clicked on button modes are shown correctly



**Status:** Pass

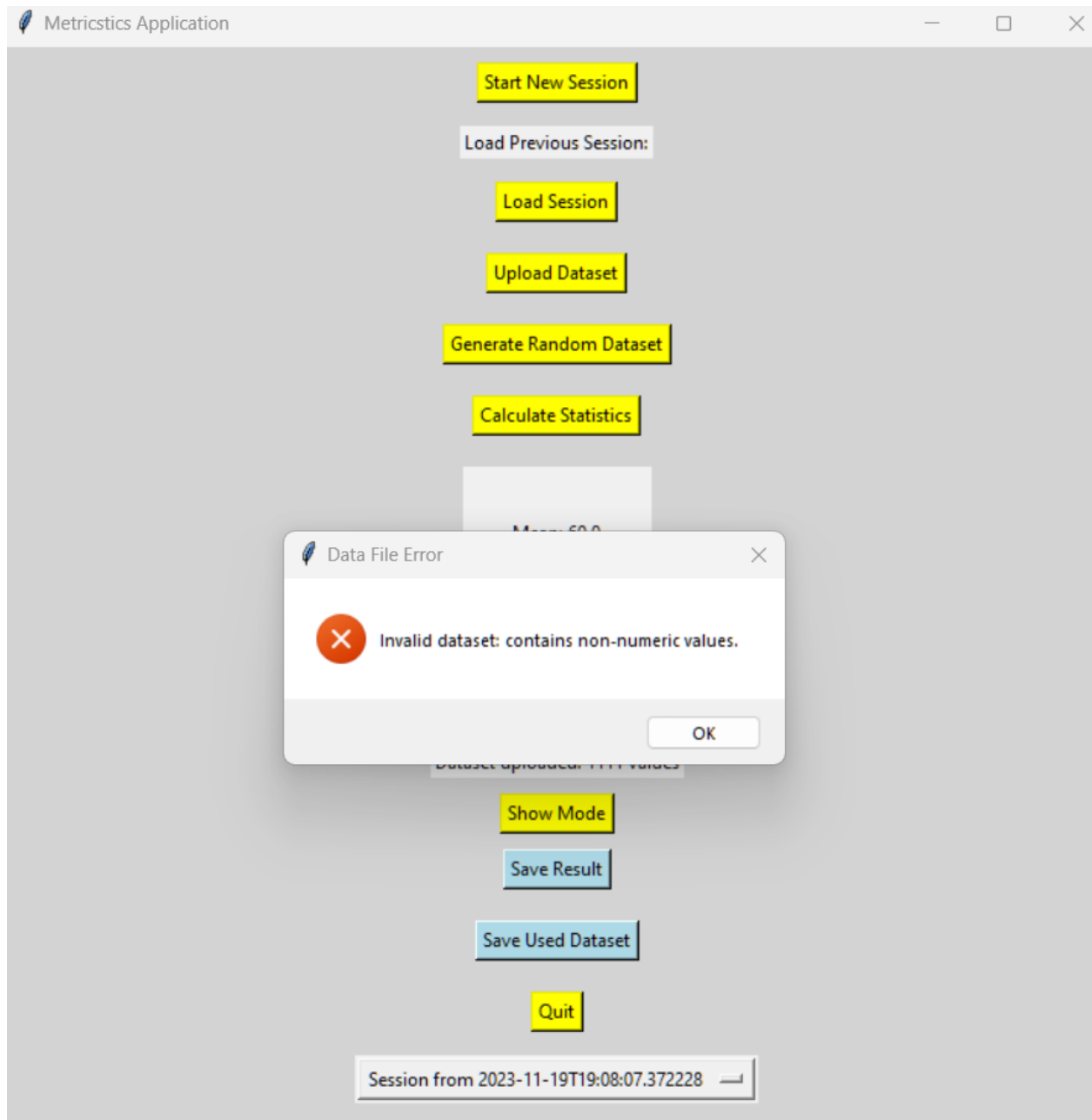
**Test case 6:** Handle Non-Numeric Data

**Objective:** Verify that the application correctly handles non-numeric dataset.

**Input Data:** Invalid dataset contain non numeric character

**Expected Result:** Error message indicating non-numeric values

**Actual Result:** Error displayed as expected



**Status:** Pass

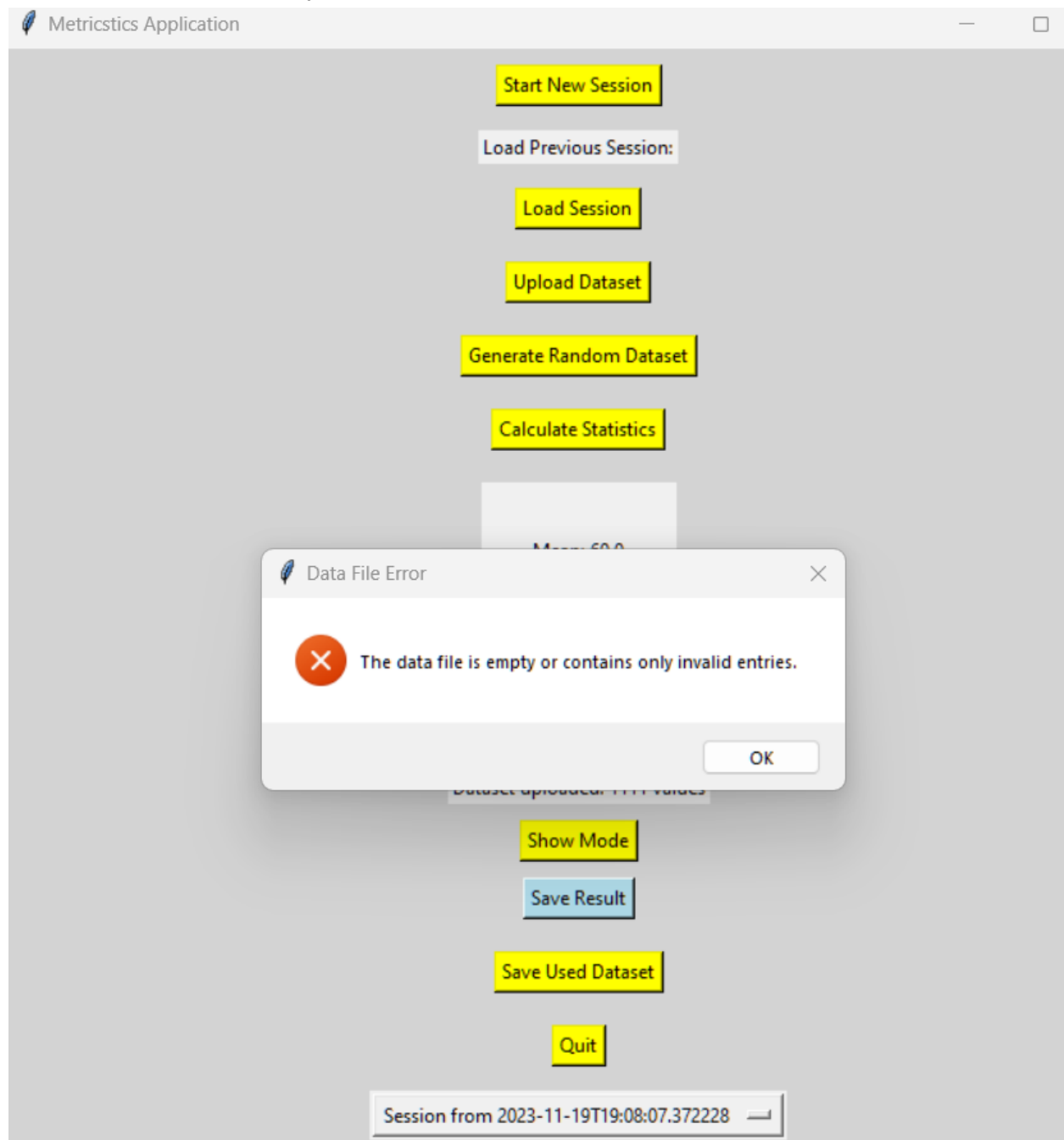
### Test Case 7: Handle Empty Dataset

**Objective:** Verify that the application correctly handles an empty dataset.

Input Data: []

**Expected Result:** Error message indicating the dataset is empty

**Actual Result:** Error displayed



**Status:** Pass

**Test Case 8:** Save Statistical Results by clicking Save Result

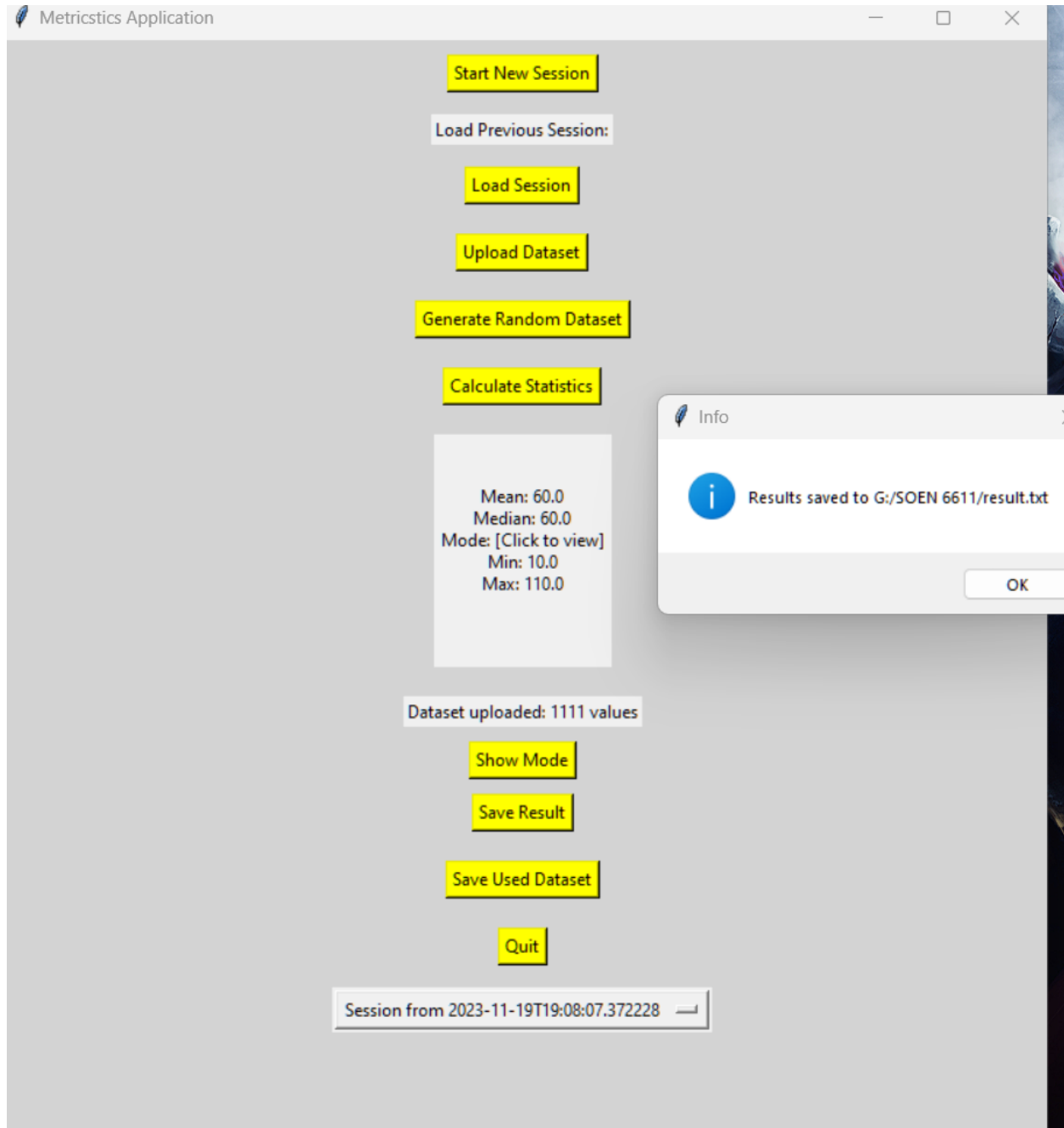
**Objective:** To verify that the application correctly saves the calculated statistical results

**Expected Result:**

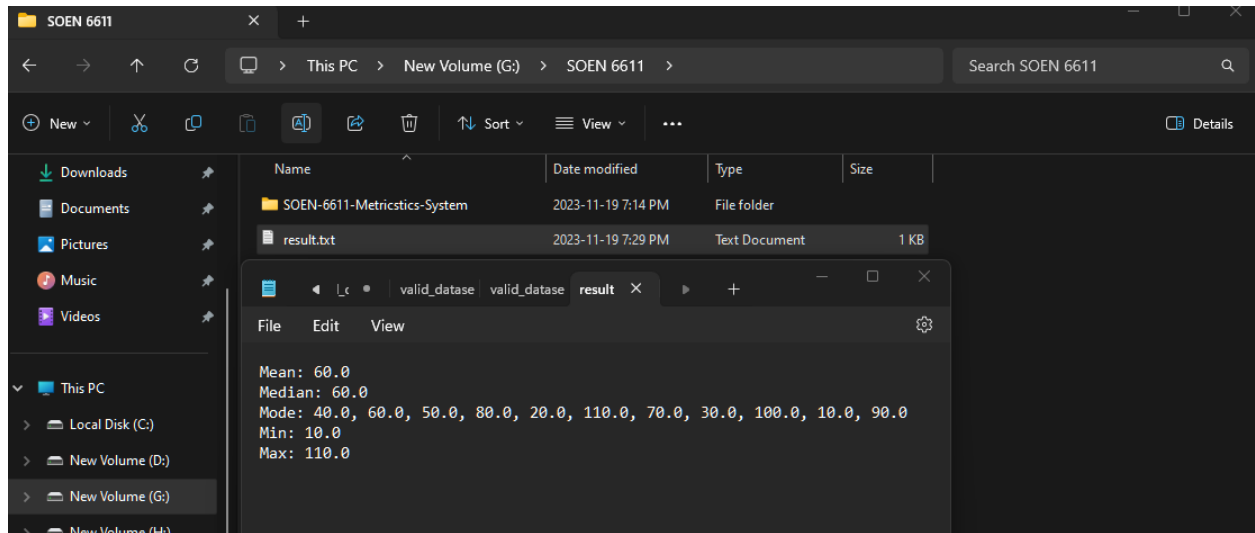
A file is created at the specified location.

The file contains the calculated statistical results (mean, median, mode, min, max).

**Actual Result:** File saved successfully







**Status:** Pass

### Test Case 9: Save Dataset

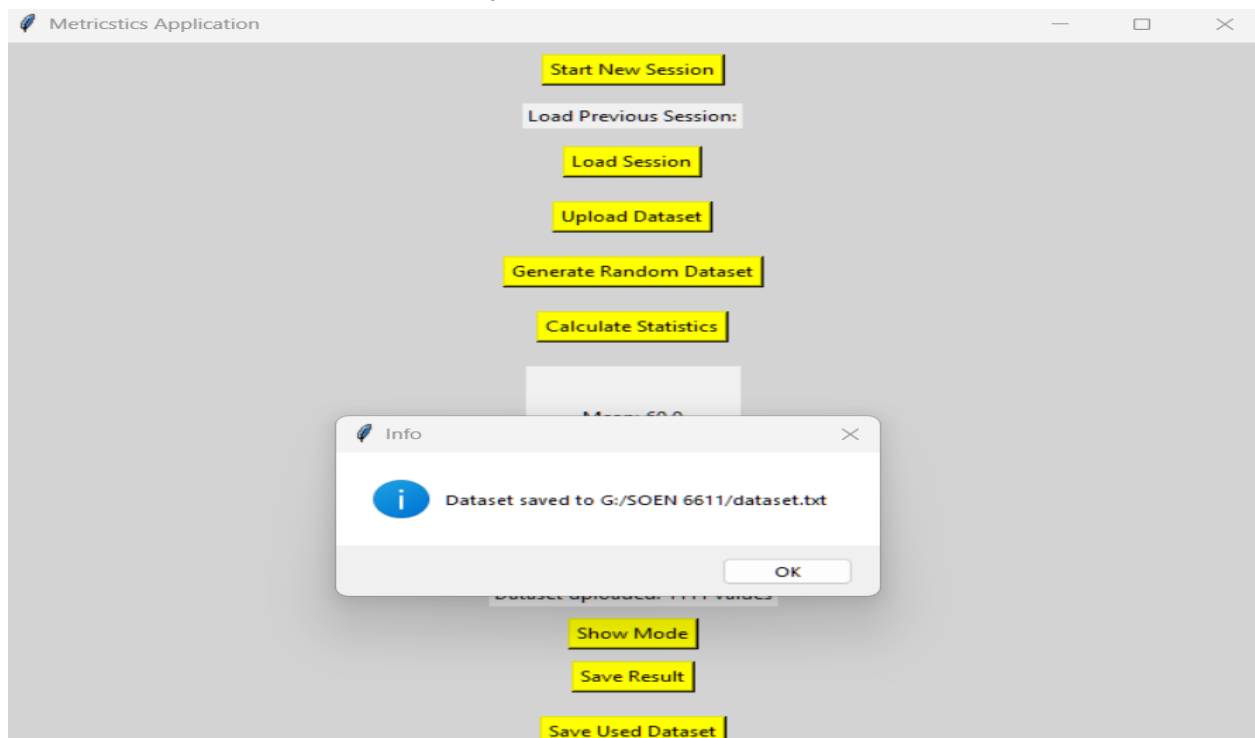
**Objective:** To verify that the application can save the currently loaded/generated dataset to a file.

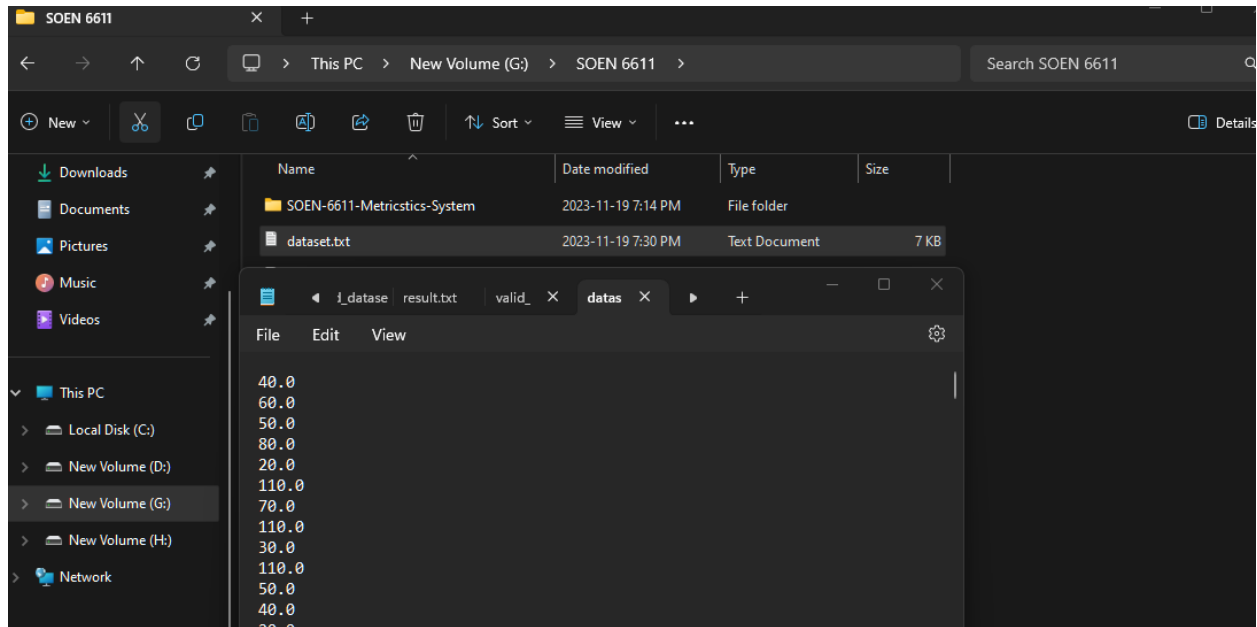
**Expected Result:**

A file is created at the specified location.

The file contains the dataset (each data point on a new line).

**Actual Result:** File Saved Successfully





**Status:** Pass

**Test Case 10:** Successful Session Generation upon Clicking 'Calculate Statistics'

**Objective:** To validate that a new session is successfully generated each time the 'Calculate Statistics' button is clicked.

**Expected Result:** Upon clicking the 'Calculate Statistics' button, the application should successfully generate and save a new session. This session should encapsulate the current dataset and its corresponding statistical calculations (mean, median, mode, min, max).

**Verification:**

Check if the new session is listed in the 'Load Previous Session' dropdown.

Verify that the session details correspond to the recently calculated statistics and the dataset used.

**Actual Result:** Previous session load successfully

Start New Session

Load Previous Session:

No previous sessions

Load Session

Upload Dataset

Generate Random Dataset

Calculate Statistics

Results will appear here

No dataset loaded

Save Result

Save Used Dataset

Quit

Start New Session

Load Previous Session:

Load Session

Upload Dataset

Generate Random Dataset

Calculate Statistics

Mean: 481.73911908063496  
Median: 467.556434833036  
Mode: [Click to view]  
Min: 0.06334264577012583  
Max: 999.9420972104732

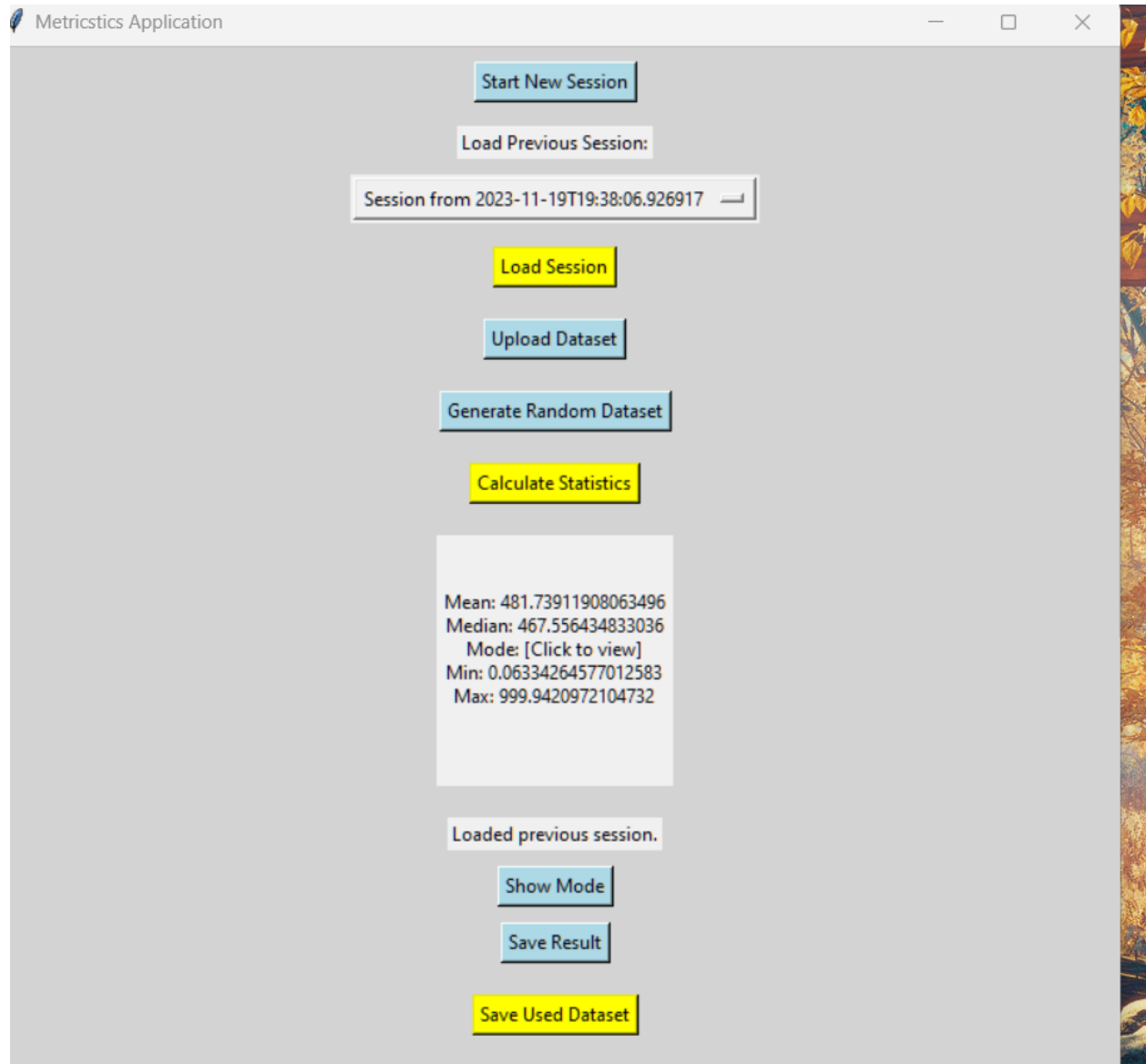
Random dataset generated: 1000 values

Show Mode

Save Result

Save Used Dataset

Quit



### Test Execution Summary

**Total Test Cases:** 10

**Total Passed:** 10

**Total Failed:** 10