Test Plan

1. Application Overview

- **Purpose**: Simulate a packet generator where users can enter packet details, save them, and send them.
- **Main Features**:
    - Enter packet details (Name, Address, Port, Type, ASCII, Hex).
    - Save packets to a saved packets table.
    - Send packets, which appear in the sent packets table.
    - Clear contents and logs.
    - Search and delete saved packets.

2. Testing Objectives

- Ensure all GUI elements are functional and correctly mapped.
- Validate that packet details are correctly saved and sent.
- Verify that the saved packets table and sent packets table update correctly.
- Validate the search and delete functionality for saved packets.

3. Test Scenarios

3.1. GUI Validation

- Verify all buttons (Save, Send, Clear Contents, Clear Log, Search, Delete Saved Packet) are present and clickable.
- Validate input fields (Name, Address, Port, Type, ASCII, Hex) accept and display correct data.

3.2. Packet Saving

- Enter packet details and click Save.
- Verify the packet appears in the saved packets table with correct details.

3.3. Packet Sending

- Enter packet details and click Send.
- Verify the packet appears in the sent packets table with correct details.

3.4. Clear Functionality

- Enter packet details, then click Clear Contents.
- Verify all input fields are cleared.
- Click Clear Log and verify the sent packets table is cleared.

3.5. Search and Delete

- Save multiple packets.
- Use the search functionality to find a specific packet.
- Delete a saved packet and verify it is removed from the table.

3.6. Error Handling

- Attempt to save or send a packet with missing or invalid details.
- Verify appropriate error messages are displayed.

4. Squish Testing Concepts

4.1. Virtual Presence Sensors (VPS)

- Use VPS to simulate user interactions with the GUI elements.
- Example: Simulate clicking the Save button and verify the packet is saved.

4.2. Data-Driven Testing (DTT)

- Create a dataset with various packet details (valid and invalid).
- Use DTT to automate the testing of different packet scenarios.
- Example: Test saving and sending packets with different combinations of Name, Address, Port, etc.
  tst.Data_Driven_savetst

4.3. Behavior-Driven Development (BDD)

- Write test cases in a human-readable format using Gherkin syntax.

Feature: Search Packets in Saved Table
Scenario: Search for packets in the saved table
Given I have started the PackGen application
And I have saved the following packets:
Name	ASCII	HEX	Address	Port	Type
Packet1	HelloWorld	48656C6C6F	192.168.1.1	8080	TCP
Packet2	TestPacket	5465737450616B6574	192.168.1.2	8081	UDP
Packet3	DataPacket	4461746150616B6574	192.168.1.3	8082	SSL
When I type *"Packet"* in the search field
Then the saved table should show 3 packets
When I type *"Packet1"* in the search field
Then the saved table should show 1 packet
When I type *"Hello"* in the search field
Then the saved table should show 1 packet
When I clear the search field
Then the saved table should show 3 packets

5. Test cases Breakdown

- **Overall Success Rate**: The tests have a mixed success rate, with some achieving 100% and others failing.
- **Failed Test Cases**:
  - suite_PackgenSuite: 2 out of 20 test cases failed.
  - txt_Saventable_emptyatMsg: 1 verification failed.
  - txt_Detendsaved: 3 out of 8 verifications failed.
- **Successful Verifications**:
  - Multiple verifications
    like txt_SaveButtons_exist, txt_Observ_contents_exist, txt_comboBox_exist, and others have achieved 100% success.
  - Features like txt_Clear_logs and txt_SearchPacket also completed successfully.
- **Execution Time**:
  - Most verifications and features completed in less than a few seconds, with the longest taking up to 4 seconds.

TESTS

1. suite_PackgenSuite
2. tst_SaveButtons_exist
3. tst_clearcontents_exist
4. tst_comboBox_exist
5. tst_Savedtable_emptyatBeg
6. tst_SendTableEmpty
7. tst_checkingLineEdits
8. tst_CheckingsSendTableCol
9. tst_CheckingsSavedTableCol
10. tst_TypingLineEdits
11. tst_ImageExist
12. tst_saveSignal
13. tst_saveMissingField
14. tst_clearContentFunc
15. tst.sendviasave
16. tst_Deletesaved
17. tst_test_data_tdd
18. tst_Data_Driven_savetst
19. tst_Clear_logs
20. tst_case1
21. tst_SearchPacket