Manual Testing Instructions for Server-Client Features

Pre-condition: Ensure central database connectivity

- The central database must be accessible and operational for the tests.

Test Scenarios

1. **User Login - Valid Credentials**

   - **Steps**:

     a. Launch the application.

     b. Enter valid account credentials from the central database.

     c. Click "Login."

   - **Expected Outcome**:

     a. User is logged in successfully and redirected to the main dashboard.

2. **User Login - Invalid Credentials**

   - **Steps**:

     a. Launch the application.

     b. Enter invalid account credentials.

     c. Click "Login."

   - **Expected Outcome**:

     a. An error message appears: *"Invalid credentials. Please try again."*

3. **Account Creation**

   - **Steps**:

     a. Launch the application.

     b. Navigate to the "Create Account" page.

     c. Enter valid account information.

     d. Click "Save."

   - **Expected Outcome**:

a. The account is successfully saved to the central database.

b. The user is redirected to the login page or logged in automatically.

4. **Edit Account Information**

- **Steps**:

  a. Log in with a valid account.

  b. Navigate to the "Edit Account Information" page.

  c. Update account fields (e.g., username, password, team number).

  d. Click "Save."

  e. Log out and log in again with the updated credentials.

- **Expected Outcome**:

  a. The account information is updated in the central database.

  b. Login with the updated credentials is successful.

5. **Edit Raw Data Values**

- **Steps**:

  a. Log in with a valid account.

  b. Navigate to the "Edit Raw Data" page.

  c. Select and modify a raw data value.

  d. Click "Save."

  e. Reopen the data session to verify the changes.

- **Expected Outcome**:

  a. The updated raw data is saved in the central database.

  b. Reopening the session shows the updated value.

6. **Error Handling - Database Unreachable**

- **Steps**:

  a. Simulate a database connectivity error (e.g., disconnect network or stop the database service).

  b. Attempt to log in or perform any operation requiring database access.

- **Expected Outcome**:

  a. An error message appears: *"Unable to connect to the database. Please try again later."*

7. **Concurrent Access - Prevent Simultaneous Login**

- **Steps**:

  a. Log in with user U1 from machine M1.

b. Attempt to log in with user U1 from machine M2.

- **Expected Outcome**:

  a. Login from M2 is denied with an error message: *"User is already logged in from another device."*

  b. The login session from M1 remains active.

8. **Changes Propagate Across Devices**

- **Steps**:

  a. Log in from device D1 and update account or data information.

  b. Log out from D1.

  c. Log in from device D2 using the same account.

  d. Verify that the changes made on D1 are reflected.

- **Expected Outcome**:

  a. The updated account or data information is displayed on D2.