Integration, Regression and Acceptance Testing

Integration Tests:

1. **Login & Task Management:** Ensures users can access and manage tasks post-login without issues.

2. **Task Creation & File Upload:** Checks if files attached during task creation are properly linked and accessible.

3. **Tagging & Search Functionality:** Verifies that tasks tagged upon creation are accurately retrieved via search.

4. **Subtask Integration:** Confirms that subtasks are correctly nested within main tasks and updated in real-time.

5. **Recurring Tasks & Notifications:** Ensures recurring tasks trigger notifications as expected.

6. **Date Search & Task Display:** Validates that tasks are correctly displayed when searched by specific dates.

7. **Password Change & Security Checks:** Tests if password updates are securely processed and effective immediately.

8. **Session Control & Timeout:** Assesses the application's handling of user sessions for security and convenience.

An important note about the following test (Below) is that it meets all of the integration tests (Above) requirements by testing and verifying all feature modules interact properly.

```
       Connected to db!

       at log (index.js:24:11)


Test Suites: 8 passed, 8 total
Tests:       24 passed, 24 total
Snapshots:   0 total
Time:        31.09 s
Ran all test suites matching /__tests__\\BrooksLoginLogout.test.js|__tests__
```

Regression Tests:

1. **Login Process Stability:** Checks if the login process remains reliable after updates.

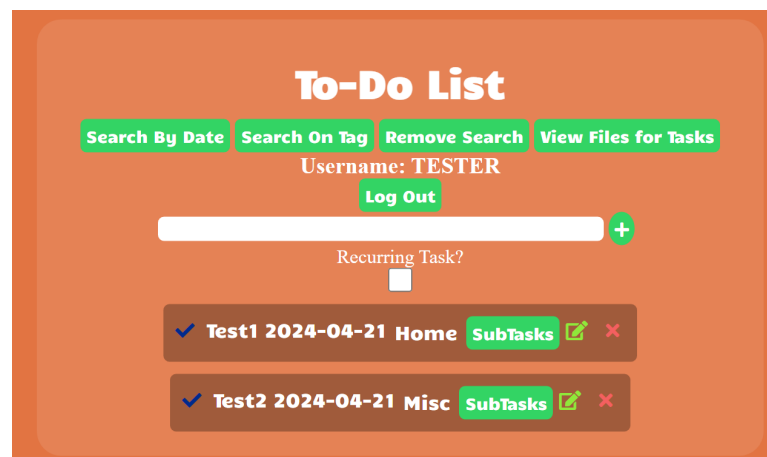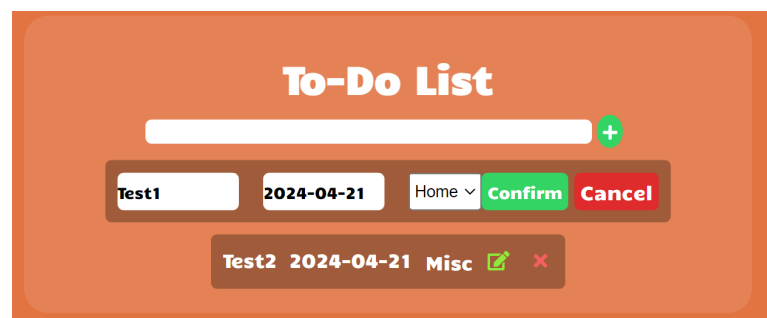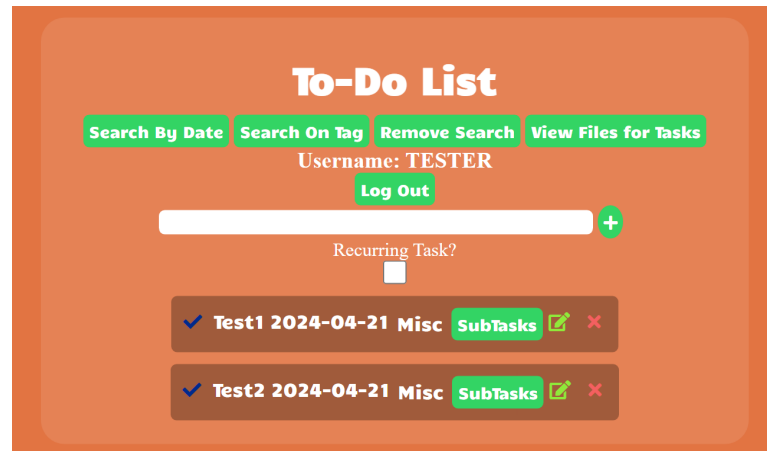   After merging all other features, the login process was tested for regression.

```
PASS  __tests__/BenLoginLogoutRegression.test.js
  User Creation
    √ should start (1188 ms)
    √ should create a new user with correct input (199 ms)
    √ should return error if user already exists (72 ms)
  Login
    √ should start (359 ms)
    √ should allow users to login when given correct credentials (175 ms)
    √ should not allow users to log in with incorrect user information (53 ms)

Test Suites: 1 passed, 1 total
Tests:       6 passed, 6 total
Snapshots:   0 total
Time:        4.387 s
Ran all test suites matching /  tests  \\BenLoginLogoutRegression.test.js/i.
```

   Login feature still works after updates

2. **Task Editing Integrity:** Ensures task edits don't affect unrelated tasks.

   Due to the nature of the requirements of this test, a manual test would best fit.

Task Editing functions still work as expected after updates.

3. **File Upload Consistency:** Verifies that file upload functionality is unaffected by recent changes.

   After merging all other features, the file upload feature was tested for regression.

```
PASS  __tests__/BenFileUpDownRegression.test.js
  Testing of uploading and downloading a file
    √ uplaod and download file (1298 ms)

Test Suites: 1 passed, 1 total
Tests:       1 passed, 1 total
Snapshots:   0 total
Time:        3.097 s
Ran all test suites matching /__tests__\\BenFileUpDownRegression.test.js/i.
```

File Upload still functions as expected after updates.

4. **Search Feature Robustness:** Confirms search functionality remains accurate after updates.

   After merging all other features, the search feature was tested for regression.

```
Test Suites: 2 passed, 2 total
Tests:       3 passed, 3 total
Snapshots:   0 total
Time:        5.01 s
Ran all test suites matching /__tests__\\CodyDateSearch.test.js|__tests__\\QuayTagSearch.test.js/i.
```

Search Feature still functions as expected after updates.

5. **UI Responsiveness:** Ensures the user interface remains responsive.

   Due to the nature of the requirements of this test, a manual test would best fit.

   - No visuals. To test, I tested all of the interactable buttons and features on the web application to ensure the user interface is interactive. Additionally, I made sure the viewport was responsive to different screen sizes.

6. **Data Storage Stability:** Verifies database interactions are stable and data integrity is maintained.

   Due to the nature of the requirements of this test, a manual test would best fit.

Data Storage still functions as expected after updates.

7. **Security Feature Validation:** Confirms security features (e.g., password management) are intact.

   After merging all other features, the security features were tested for regression.


```
Test Suites: 3 passed, 3 total
Tests:       11 passed, 11 total
Snapshots:   0 total
Time:        7.855 s
Ran all test suites matching /__tests__\\
```
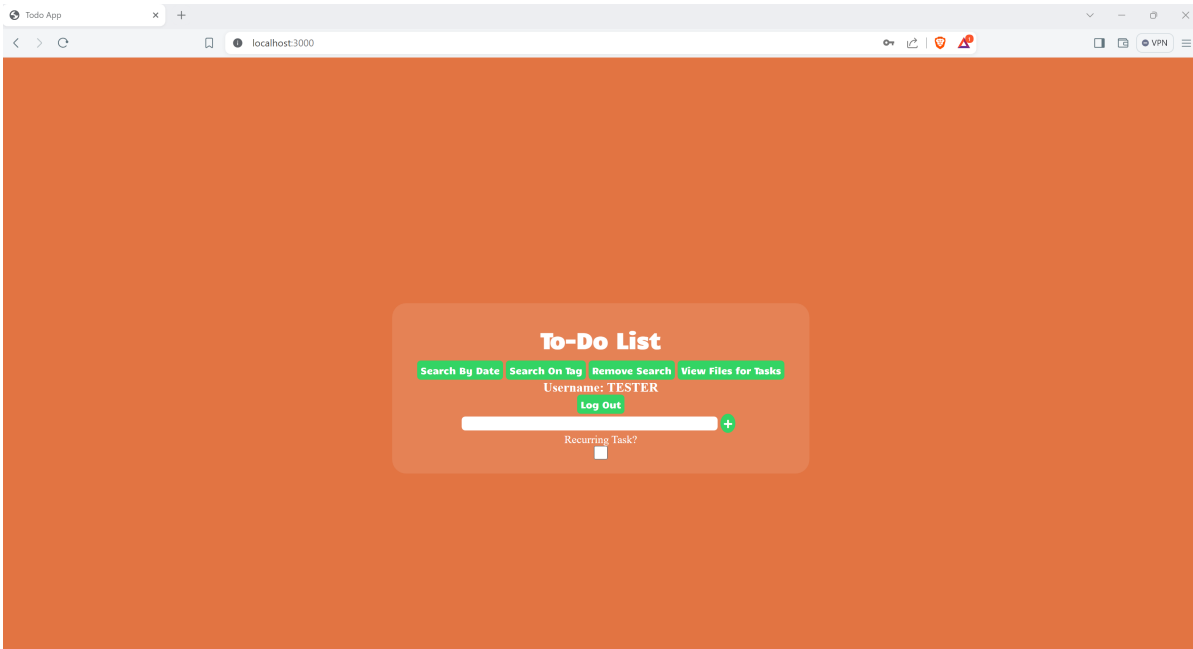
Security Features still functions as expected after updates.

8. **Cross-Device Functionality:** Tests application reliability across different browsers.

   Due to the nature of the requirements of this test, a manual test would best fit.

Chrome Browser:
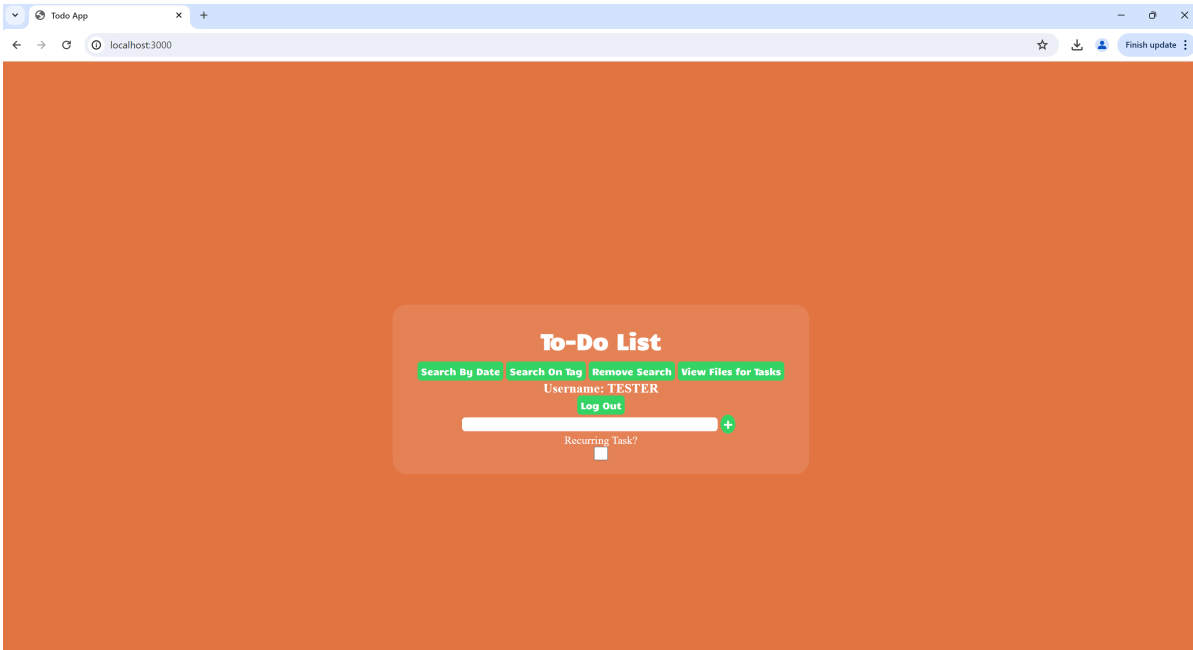
Brave Browser:

Microsoft Explorer Browser:
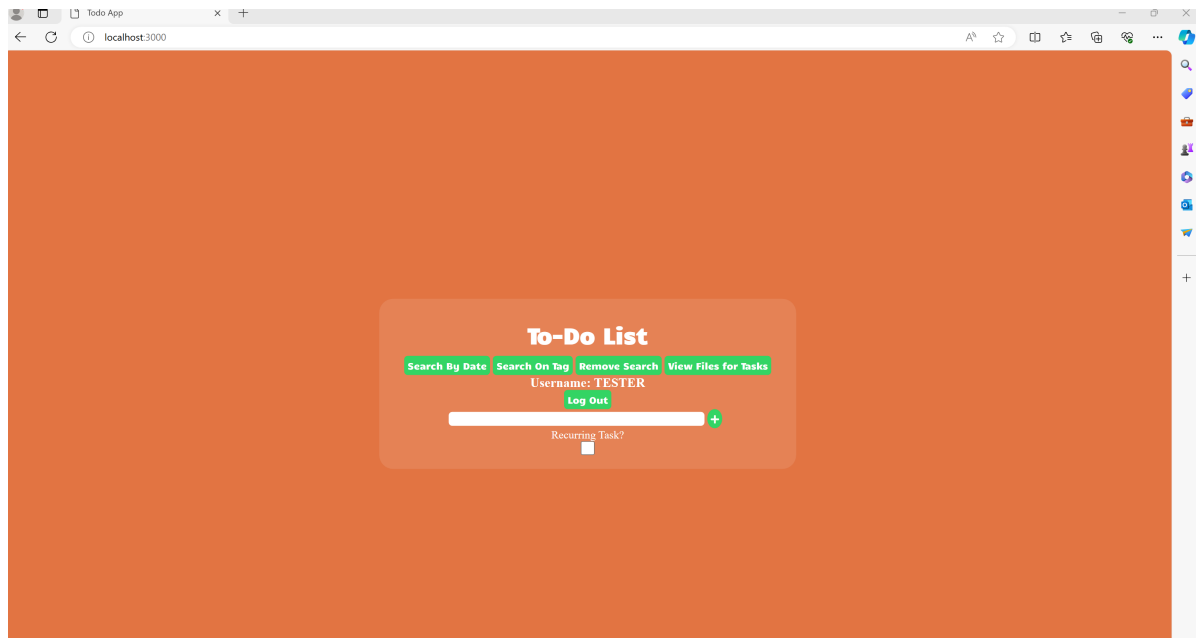
Cross Device/Browser still functions as expected after updates.

Acceptance Tests:

1) Complete Task Lifecycle: From creation to completion, ensuring all task-related features function as intended.

This being a core function test and with the complexity of it, a manual test fit this acceptance test best.
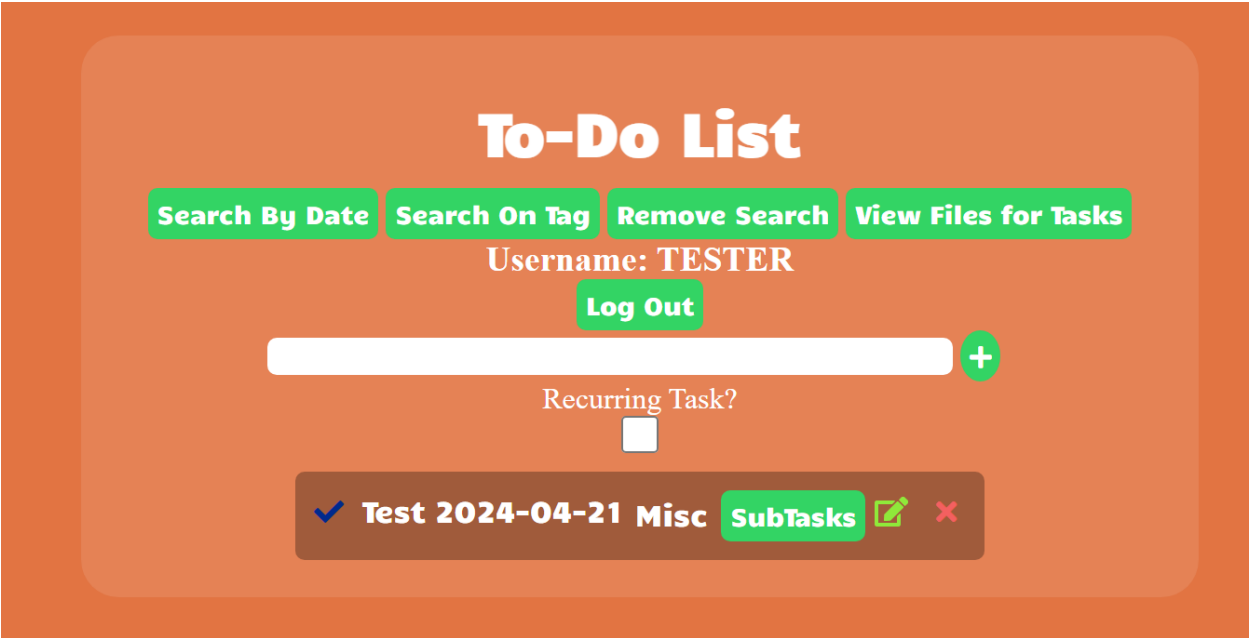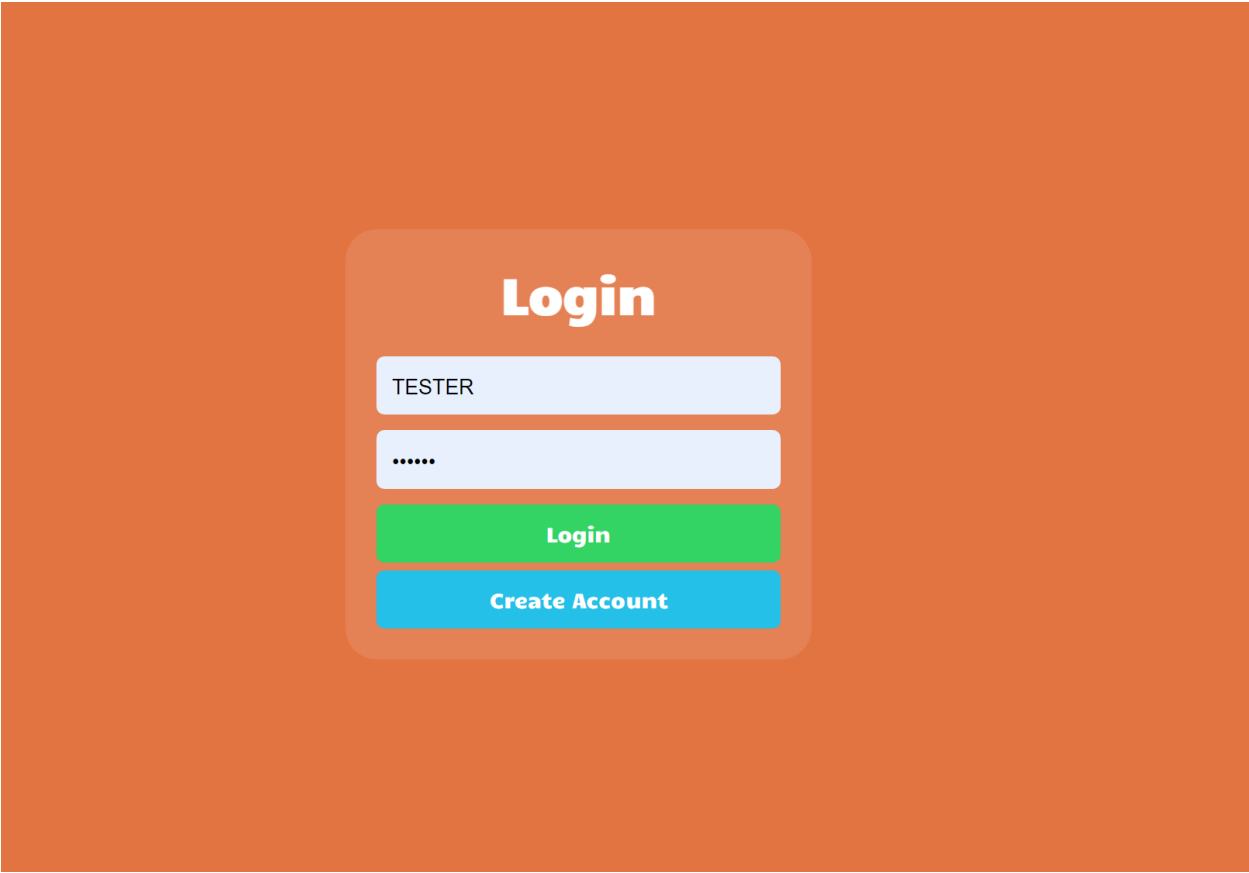
Task life style meets acceptance.

2) User Registration & Login: Verifies the entire process of user account creation, login, and data privacy.

```
PASS  __tests__/BenLoginLogout.test.js
  User Creation
    √ should start (1193 ms)
    √ should create a new user with correct input (180 ms)
    √ should return error if user already exists (71 ms)
  Login
    √ should start (325 ms)
    √ should allow users to login when given correct credentials (169 ms)
    √ should not allow users to log in with incorrect user information (45 ms)

Test Suites: 1 passed, 1 total
Tests:       6 passed, 6 total
Snapshots:   0 total
Time:        3.789 s
Ran all test suites matching /__tests__\\BenLoginLogout.test.js/i.
```

User registration and login meets acceptance.

3) Comprehensive Search Test: Ensures all search functionalities (tag, date) meet user expectations.

To complete this test, a manual test would best fit the testing criteria so that is how I tested.

- First all tasks display as default with no search filters.

- Now Search By Tag Testing of the "Home" tag.

- Now Search By Date Testing from 4-21-2024 to 6-28-2024.

Search functions meet acceptance.

4) Subtask Functionality: Confirms users can create, manage, and complete subtasks as intended.

```
PASS  __tests__/BenSubtasksAcceptanceTest.test.js (8.14 s)
  POST /
    √ creates a new task (1317 ms)
  GET /
    √ gets all tasks (1015 ms)
  POST /subtask
    √ creates a new subtask (939 ms)
  GET /subtask
    √ gets all subtasks (953 ms)
  POST /subtaskEdit
    √ edits a subtask (1050 ms)
  GET /subtaskComplete
    √ completes a subtask (961 ms)
  GET /subtaskRemove
    √ removes a subtask (144 ms)

Test Suites: 1 passed, 1 total
Tests:       7 passed, 7 total
Snapshots:   0 total
Time:        8.243 s
Ran all test suites matching /__tests__\\BenSubtasksAcceptanceTest.test.js/i.
```

Subtask Functions meet acceptance.