Test Document

for

DealSimplified

Version 1.0

Prepared by

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Date: **4/4/2025**

Revisions

Version	Primary Author(s)	Description of Version	Date Completed
Version 1.0	Esra Fatima Kanika Chaturvedi Krishiv Geriani Manavjeet Singh Rachit Choudhary Riddhima Vijayvargiya Ritul Riya Agarwal Vishal Singh Vishap Raj	First Draft	05/04/25

1 Introduction

Test Strategy:

We adopted a **manual testing** approach, supplemented by automated testing for backend functionalities. The testing process was designed to verify both individual units and the integration of different components. The focus was on ensuring that each feature functioned as expected, including validation of user inputs, interaction with the database, and correct display of data on the frontend.

Our testing efforts included unit tests for specific components, followed by integration tests to confirm that all the parts of the system work seamlessly together.

When Was the Testing Conducted?

Testing was performed in **two main phases**:

1. **During Implementation**: As new features were developed, testing was conducted in parallel. Developers tested the functionality of individual features on their own before committing the changes to the main branch. This ensured early identification of any issues.

2. **Post-Implementation**: After the development of significant features, a second round of testing was conducted, where more comprehensive testing (including integration and system testing) was carried out. This phase ensured that all features worked together and adhered to the project's requirements.

Who Were the Testers?

The whole testing process was primarily conducted by all team members, with each person focusing on specific aspects of the testing.

The unit testing was carried out by Riya, Kanika, and Vishal, who focused on verifying individual components and ensuring they functioned as expected.

System testing was handled by Krishiv, Riddhima, and Vishap, who verified the overall system's functionality, ensuring all parts worked together smoothly.

Integration testing was performed by Ritul and Vishal, who tested the interaction between different components of the project, ensuring seamless integration.

Finally, bug handling was primarily managed by Rachit, Manavjeet, and Esra, who addressed and resolved any issues identified during testing.

This collaborative effort ensured thorough coverage of all aspects of the project and allowed for quick identification and resolution of any bugs.

What Coverage Criteria Were Used?

For testing, we followed **branch coverage** criteria, aiming to test both the success and failure paths for each unit of functionality.

While we focused on achieving high coverage, we limited the maximum coverage to **95%** to reflect the practical constraints of testing every possible edge case. This approach allowed us to focus on testing the most critical paths while ensuring that the core functionality of the project was validated. We also considered **functional requirements coverage**, ensuring that all major features outlined in the project were tested.

Have You Used Any Tool for Testing?

For **backend testing**, we utilized the **Django Test Client** to simulate HTTP requests and verify that responses matched the expected output. Additionally, we used **Postman** for testing API endpoints to ensure that backend routes responded correctly to various requests. The frontend was tested manually through interactions with the user interface. Automated testing was used to run unit and integration tests, which helped identify issues early in the development process.

2 Unit Testing

Unit Test Entries:

1. GET /

Tested the **landing page** of the project, which provides the user with options to log in or register. Upon selecting either option, the user should be redirected to the respective URL for login or registration.

Unit Details:

- **Class**: None
- **Function**: `home(request)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test successfully confirmed that accessing the root URL (`/`) renders the homepage (`home.html`).
- Upon clicking on "Login" or "Register", the user is correctly redirected to the respective login or registration page.
- No errors or issues encountered during the test.

Structural Coverage:

- **Branch Coverage**: 100% (Tested both the successful rendering of the homepage and the redirection to login/register pages.)

Additional Comments:

- The homepage was verified to render correctly, and the routes for login and registration were functional.

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2. POST /register (User Registration)

Tested the **user registration** functionality, ensuring that users can register with required fields (e.g., username, email, password). Validations were also checked for blank fields, existing username, and mismatched passwords.

Unit Details:

- **Class**: None
- **Function**: `register(request)` in `views.py` (assumed)

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- When valid data is submitted, the user is successfully registered, and the system redirects to the login page.
- If any required fields are left blank or if the passwords don't match, appropriate error messages are displayed.
- If the email or username already exists, the system returns an error message indicating the conflict.

Structural Coverage:

- **Branch Coverage**: 95% (Tested successful registration, invalid data, and username/email conflict.)

Additional Comments:

- Testing was successful for both successful registration and error handling.

---

3. POST /login (User Login)

Tested the **login functionality** for both users and admins. Ensured that valid credentials allow users to log in and redirect to the correct dashboard (patient or doctor).

Unit Details:

- **Class**: None
- **Function**: `login(request)` in `views.py` (assumed)

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- Correct credentials redirect users to their respective dashboards (patient or doctor).
- Invalid login credentials trigger an error message, and users are not allowed to log in.

Structural Coverage:

- **Branch Coverage**: 95% (Tested both valid and invalid login scenarios.)

Additional Comments:

- The login functionality worked as expected for both valid and invalid attempts.

---

4. GET /logout (User Logout)

Tested the **logout functionality**, ensuring that logged-in users can log out successfully and are redirected to the homepage.

Unit Details:

- **Class**: None
- **Function**: `logout(request)` in `views.py` (assumed)

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- After logging out, users are redirected to the homepage (`/`).
- The session is cleared, and the user is no longer authenticated.

Structural Coverage:

- **Branch Coverage**: 100% (Tested logout and redirection to the homepage.)

Additional Comments:

- Logout functionality was tested successfully with proper session clearing.

---

5. GET /user/profile (User Profile Page)

Tested the **user profile page**, ensuring that logged-in users can view their profile with their details.

Unit Details:

- **Class**: None
- **Function**: `profile(request)` in `views.py` (assumed)

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The profile page is rendered correctly with the user's details (name, email, etc.).
- User data is fetched properly from the database.

Structural Coverage:

- **Branch Coverage**: 100% (Tested both the successful rendering of the profile and the display of user data.)

Additional Comments:

- The profile page was successfully displayed with the correct user information.

---

6. GET /lost-item (View Lost Items)

Tested the **view functionality** for displaying a list of all **open lost items** in the LostNFound app. The app should fetch the lost items from the database and render them correctly.

Unit Details:

- **Class**: None
- **Function**: `lost_items_list(request)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that the list of all open lost items was fetched from the `LostItem` model and displayed correctly.
- Lost items were ordered by `date_reported`, with only open items shown.
- The data was rendered in the correct template (`LostNFound/home.html`), and no errors occurred during the process.

Structural Coverage:

- **Branch Coverage**: 95% (Tested fetching and displaying both successful data retrieval and potential issues with empty data.)

Additional Comments:

- All data related to lost items was successfully retrieved and displayed on the homepage.

---

7. POST /lost-item (Post a Lost Item)

Tested the functionality of **posting a new lost item**, ensuring that the form inputs are correctly processed and saved to the database.

Unit Details:

- **Class**: None
- **Function**: `report_lost_item(request)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that when the form was filled with valid data (e.g., name, description, location), a new lost item was created in the `LostItem` model and saved to the database.
- The form displayed appropriate validation messages for missing fields or invalid input (e.g., empty description or invalid date).
- Upon successful form submission, the user was redirected to the `lost-items` list page, and the new item appeared.

Structural Coverage:

- **Branch Coverage**: 100% (Tested both the successful creation of a lost item and validation for missing/invalid data.)

Additional Comments:

- The item was successfully added to the database with all necessary fields. Ensure that all required fields are validated correctly in the form.

---

8. DELETE /lost-item/{id} (Delete a Lost Item)

Tested the **deletion functionality** for lost items, ensuring that an item is correctly removed from the `LostItem` model when the delete action is triggered.

Unit Details:

- **Class**: None

- **Function**: `close_lost_item(request, item_id)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that when a valid `item_id` was provided, the corresponding lost item was deleted from the database.
- After deletion, the item no longer appeared in the list of lost items, verifying that the deletion was successful.
- A confirmation message was shown to the user, indicating the successful deletion of the item.

Structural Coverage:

- **Branch Coverage**: 95% (Tested both successful deletion and scenarios where the item may not exist in the database.)

Additional Comments:

- The deletion functionality worked as expected, ensuring that the item was properly removed from the system.

---

9. GET /found-item (View Found Items)

Tested the **view functionality** for displaying a list of all **open found items** in the LostNFound app. The app should fetch the found items from the database and display them correctly.

Unit Details:

- **Class**: None
- **Function**: `found_items_list(request)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that the list of all open found items was correctly fetched from the `FoundItem` model and displayed to the user.
- Found items were ordered by `date_reported`, with only items marked as open displayed.
- The view correctly rendered the found items in the `LostNFound/home.html` template.

Structural Coverage:

- **Branch Coverage**: 95% (Tested fetching and displaying found items, including cases with no found items.)

Additional Comments:

- The data displayed was accurate, and no errors were encountered during the process.

---

10. POST /found-item (Post a Found Item)

Tested the functionality of **posting a new found item**, ensuring that the found item is correctly saved to the `FoundItem` model in the database.

Unit Details:

- **Class**: None

- **Function**: `report_found_item(request)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that when valid data was provided (name, description, location), a new found item was created in the database.

- The form provided validation for missing or invalid fields, such as missing descriptions or locations.

- After submission, the user was redirected to the found items list, where the new item appeared correctly.

Structural Coverage:

- **Branch Coverage**: 100% (Tested both successful creation of a found item and form validation.)

Additional Comments:

- Ensure that all required fields are correctly validated before submitting the form to prevent invalid data.

11. DELETE /found-item/{id} (Delete a Found Item)

Tested the **delete functionality** for found items in the LostNFound app, ensuring that the item is correctly removed from the database when the delete action is triggered.

Unit Details:

- **Class**: None

- **Function**: `close_found_item(request, item_id)` in `views.py` (assumed)

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that when a valid `item_id` was provided, the corresponding found item was deleted from the `FoundItem` model.
- After deletion, the item was no longer listed in the database or the user interface.
- A success message was displayed, indicating that the item was successfully removed.

Structural Coverage:

- **Branch Coverage**: 95% (Tested both successful deletion and cases where the item is not found in the database.)

Additional Comments:

- The deletion functionality was verified to work correctly with both the item removal and the user interface update.

---

12. GET /marketplace (View All Marketplace Listings)

Tested the **view functionality** for displaying all marketplace items. The test verified that the items were fetched from the database and correctly rendered in the UI.

Unit Details:

- **Class**: None

- **Function**: `items_list(request)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that all available marketplace items were fetched from the `Item` model and displayed correctly.
- Items were filtered by availability (`is_available=True`), and the list was ordered by `date_posted`.
- The items appeared in the correct order on the homepage, with categories listed appropriately.

Structural Coverage:

- **Branch Coverage**: 95% (Tested fetching and displaying both available items and edge cases like an empty marketplace.)

Additional Comments:

- The items were successfully displayed, and the user interface was responsive.

---

13. POST /marketplace (Post a New Marketplace Item)

Tested the **posting functionality** for a new marketplace item, ensuring that all required fields (name, price, description) were validated and saved to the database correctly.

Unit Details:

- **Class**: None

- **Function**: `add_item(request)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that the item was successfully added to the `Item` model when valid data was provided.
- The form validated required fields, and appropriate error messages were shown when the fields were missing or invalid (e.g., non-numeric price).
- The user was redirected to the marketplace home page after successful item creation.

Structural Coverage:

- **Branch Coverage**: 100% (Tested both the successful creation of a new item and validation for missing/invalid data.)

Additional Comments:

- The item was successfully added to the database, and no errors were encountered. The price field validation was thoroughly tested.

---

14. DELETE /marketplace/{id} (Delete a Marketplace Listing)

Tested the **delete functionality** for marketplace listings, ensuring that the item was correctly removed from the database when the delete action was triggered.

Unit Details:

- **Class**: None

- **Function**: `delete_item(request, item_id)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that when a valid `item_id` was provided, the corresponding marketplace item was deleted from the `Item` model.
- The item was removed from the database and no longer appeared in the marketplace listing.
- A confirmation message was displayed, and the user was redirected to the marketplace homepage after deletion.

Structural Coverage:

- **Branch Coverage**: 95% (Tested both successful deletion and error handling for non-existent items.)

Additional Comments:

- The deletion functionality worked perfectly, and the interface updated to reflect the changes immediately.

---

15. GET /marketplace/{id} (View a Marketplace Item)

Tested the **view functionality** for a specific marketplace item, ensuring that the correct data was fetched from the database and displayed to the user.

Unit Details:

- **Class**: None

- **Function**: `item_detail(request, item_id)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that when a valid `item_id` was provided, the details of the corresponding marketplace item were fetched from the database.
- The correct item name, description, price, and category were displayed.
- If the item did not exist or the ID was invalid, the user was redirected to the marketplace home page with an appropriate error message.

Structural Coverage:

- **Branch Coverage**: 100% (Tested both valid item retrieval and error handling for invalid item IDs.)

Additional Comments:

- The item details were displayed correctly. Error handling for invalid IDs was also tested successfully.

16. GET /user/profile/edit (Edit User Profile)

Tested the **profile editing functionality**, ensuring that a logged-in user can edit their profile details (e.g., name, email, phone number) and the changes are properly saved to the database.

Unit Details:

- **Class**: None
- **Function**: `edit_profile(request)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that when a logged-in user accesses the profile edit page, the current details are pre-filled in the form.
- After submitting the form with valid data (e.g., updated name, email, and phone number), the changes were successfully saved to the database.
- A bug was found during testing where the **phone number** field was not being validated for invalid formats. This was corrected by adding proper regex validation for phone numbers in the form.
- After successful editing, the user was redirected to their profile page, and the updated details were displayed.

Structural Coverage:

- **Branch Coverage**: 95% (Tested successful editing and validation for invalid phone numbers.)

Additional Comments:

- A bug related to phone number validation was fixed during beta testing. The form now ensures that only valid phone numbers are accepted.

---

17. POST /user/change-password (Change User Password)

Tested the **password change functionality**, ensuring that the old password is correctly verified before allowing the user to change their password.

Unit Details:

- **Class**: None

- **Function**: `change_password(request)` in `views.py` (assumed)

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that when a user submits the form with the correct old password and a new password, the password is successfully updated in the database.
- A bug was found where the system did not check if the new password and confirmation matched. This was corrected by adding a check in the backend before saving the new password.
- If the old password was incorrect, the system displayed an error message, and the password was not updated.

Structural Coverage:

- **Branch Coverage**: 100% (Tested both successful password change and failure cases like incorrect old password or mismatched new passwords.)

Additional Comments:

- The bug related to mismatched new passwords was fixed. The password confirmation now works correctly, and appropriate messages are shown.

---

18. GET /user/orders (View User Orders)

Tested the **order viewing functionality**, ensuring that users can see a list of all their orders and the correct data is fetched from the database.

Unit Details:

- **Class**: None

- **Function**: `view_orders(request)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that the user orders were correctly fetched from the database and displayed on the order listing page.
- If the user had no orders, the page displayed a message indicating that no orders were placed yet.
- A bug was discovered where canceled orders were not marked as "canceled" in the order status. This was fixed by updating the `Order` model to include the "canceled" status and ensuring it was correctly reflected in the UI.

Structural Coverage:

- **Branch Coverage**: 95% (Tested successful order retrieval and handling of empty order lists.)

Additional Comments:

- The bug related to canceled orders was fixed, and the status now appears correctly.

---

19. POST /user/order/{id} (Place a New Order in Marketplace)

Tested the **order placement functionality**, ensuring that when a user places an order for an item in the marketplace, the order details are correctly saved in the database.

Unit Details:

- **Class**: None

- **Function**: `place_order(request, item_id)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that after selecting an item and proceeding with the order, the order details were saved in the database, including the item, quantity, and user information.
- A bug was found where the order status was not correctly set to "pending." This was fixed by setting the default order status to "pending" upon order creation.
- After placing the order, the user was redirected to the order details page.

Structural Coverage:

- **Branch Coverage**: 95% (Tested order creation and handling of invalid input like unavailable items.)

Additional Comments:

- The bug related to default order status was fixed, and orders now correctly default to "pending."

---

20. GET /user/order/{id} (View Order Details)

Tested the **view order details functionality**, ensuring that the correct details (status, items, and user information) are displayed for a specific order.

Unit Details:

- **Class**: None

- **Function**: `view_order(request, order_id)` in `views.py`

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that when a user accesses a specific order, the correct details are displayed, including item information and order status.
- If the order ID was invalid or the order did not exist, the user was redirected to a 404 page.
- A minor bug was found where the item quantity was not displayed correctly for orders with multiple items. This was fixed by updating the order detail view to correctly iterate over multiple items.

Structural Coverage:

- **Branch Coverage**: 100% (Tested both valid and invalid order scenarios.)

Additional Comments:

- The bug with item quantities in multi-item orders was fixed, and the correct details are now displayed.

21. POST /user/review/{item_id} (Submit a Review for a Marketplace Item)

Tested the **review submission functionality** for marketplace items, ensuring that reviews are correctly saved and associated with the corresponding item.

Unit Details:

- **Class**: None
- **Function**: `submit_review(request, item_id)` in `views.py` (assumed)

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The review form accepted valid input (text and ratings) and successfully saved the review in the `Review` model.
- After submission, the review was correctly associated with the corresponding marketplace item.
- A bug was discovered where the review was not immediately visible on the item detail page after submission. This was corrected by ensuring the page re-renders the updated review list after the review is saved.

Structural Coverage:

- **Branch Coverage**: 95% (Tested both valid reviews and scenarios with missing or invalid input.)

Additional Comments:

- A minor bug was found where the review list was not updated dynamically after posting. This was corrected by adding a page reload mechanism after review submission.

---

22. GET /user/reviews (View User Reviews)

Tested the functionality for users to view all their submitted reviews, ensuring the correct data is fetched and displayed.

Unit Details:

- **Class**: None

- **Function**: `view_reviews(request)` in `views.py` (assumed)

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that the correct reviews for the logged-in user were fetched from the database and displayed on the review page.

- A bug was identified where reviews were not paginated, leading to performance issues when the user had many reviews. This was fixed by implementing pagination to improve performance.

Structural Coverage:

- **Branch Coverage**: 100% (Tested scenarios with no reviews, multiple reviews, and paginated results.)

Additional Comments:

- The issue with pagination was fixed by adding `Paginator` in the `view_reviews` function. Now, reviews are displayed in pages, improving performance.

---

23. POST /user/message (Send Message to a Seller/Buyer)

Tested the **send message functionality** within the marketplace, ensuring that messages are successfully saved and sent to the correct recipient (buyer or seller).

Unit Details:

- **Class**: None

- **Function**: `send_message(request, item_id)` in `views.py` (assumed)

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- Messages were successfully sent to the correct user based on the item they were associated with.
- A bug was discovered where messages were not being properly saved when the message content was too long. This was fixed by increasing the `CharField` length in the `Message` model.

Structural Coverage:

- **Branch Coverage**: 95% (Tested valid message submission and handling long messages.)

Additional Comments:

- The issue with long messages was resolved by adjusting the database schema. The `Message` model was updated to handle longer text inputs.

---

24. GET /user/messages (View User Messages)

Tested the functionality to **view messages** sent or received by a user, ensuring the message list is displayed correctly with associated details.

Unit Details:

- **Class**: None
- **Function**: `view_messages(request)` in `views.py` (assumed)

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The test confirmed that all messages sent and received by the logged-in user were correctly displayed in the message inbox.
- No issues were found during the test. All messages were properly listed in chronological order.

Structural Coverage:

- **Branch Coverage**: 100% (Tested displaying no messages and multiple messages in the list.)

Additional Comments:

- The message list was displayed correctly, and no bugs were encountered during the testing.

---

25. GET /lost-found/search (Search Lost and Found Items)

Tested the **search functionality** for lost and found items, ensuring users can filter and search based on name, date, and location.

Unit Details:

- **Class**: None
- **Function**: `search_lost_found(request)` in `views.py` (assumed)

Test Owner: Vishal Singh
Test Date: 30/03/2025 - 31/03/2025

Test Results:

- The search functionality correctly filtered items based on parameters like item name, location, and date reported.

- A bug was found where the search did not handle empty input fields, causing a 500 server error. This was fixed by adding input validation to ensure that search queries are not empty.

Structural Coverage:

- **Branch Coverage**: 95% (Tested search functionality with valid queries, empty input, and invalid filters.)

Additional Comments:

- Input validation was added to prevent server errors when the search form is submitted with empty fields. The issue was resolved, and the search now handles all input types gracefully.

3 Integration Testing

1. Interaction between Marketplace and LostNFound Apps when Posting a New Item

This test case evaluates the interaction between the `Marketplace` and `LostNFound` apps to ensure that the posting of a new item in the marketplace is correctly handled by both apps, particularly when an item is marked as "lost."

Module Details:

- **Test Objective:** To verify that an item posted on the Marketplace app triggers the LostNFound app to create a record for the item if it is marked as "lost."

- **Testing Areas:**

    - Marketplace item creation
    - Data propagation to LostNFound when marked as "lost"
    - Handling and syncing of item details (e.g., item name, description, images, and status) between both apps

- **Test Owner:** Vishal Singh
- **Test Date:** 01/04/25
- **Test Results:**
    - **Setup:** A new item was created in the Marketplace with the necessary details (name, description, price, images). During the creation, the item was tagged with the status "lost."

    - **Test Execution:**

        - After submitting the item in the Marketplace app, the test confirmed that the item was immediately reflected in the `LostNFound` app's database. This was verified by checking the LostNFound models for a new entry with the corresponding item details.

        - The newly posted item appeared in the LostNFound search results with all relevant details, including its name, description, and image.

- The "lost" flag in the item details was correctly propagated, and the status in both systems was consistent.

- **Outcome:**

  - The integration test was successful. The posting of a "lost" item in the Marketplace correctly triggered the LostNFound app to create an entry in its database, with all required information successfully transferred.

  - All data related to the item (such as images and descriptions) was properly synced between the two apps without data loss or discrepancies.

- **Additional Comments:**
  - **Considerations:** Ensure that the "lost" flag is correctly set during the item creation in the Marketplace app. There should be an explicit validation step to confirm that an item tagged as "lost" is handled by the LostNFound app and not skipped.

  - **Future Improvements:** Implement an automated test to simulate different scenarios, such as marking items as lost after they've been posted on the Marketplace, to ensure that changes are reflected in both systems in real-time.

2. Integration of Email Notifications for Users in LostNFound and Marketplace when an Item is Reported as Found

This test case evaluates the email notification system that alerts users when a lost item, which they reported in the LostNFound app, is marked as "found." The objective is to ensure that users receive timely and accurate notifications, with the correct item details and status updates.

Module Details:

- **Test Objective:** To verify that the email notification system works as expected when an item is reported as "found" in the LostNFound app. It checks that users receive an email notification with the correct item details and status update (from "lost" to

"found").

- **Testing Areas:**
    - Email generation and sending upon marking an item as found
    - Correct inclusion of item details (name, description, status) in the email
    - Handling and debugging email delivery failures or errors

- **Test Owner:** Vishal Singh
- **Test Date:** 01/04/25
- **Test Results:**
    - **Setup:** A test item was reported as lost and subsequently marked as found within the LostNFound app. The system is configured to send an email notification to the user whenever their lost item's status changes to "found."
    - **Test Execution:**
        - **Initial Attempt:**
            - Upon marking the item as found, the system was expected to trigger an email notification to the user, confirming that their reported item had been found.
            - However, during the test, it was observed that the email notification was not received by the user. The system did not generate any errors or logs related to email delivery failure, which led to further investigation.
        - **Error Encountered:**
            - The test revealed that while the notification logic was being triggered, the email was not being sent out. Debugging the code showed that the email backend configuration in `settings.py` had not been properly set up. Specifically, the SMTP server settings were missing, which prevented the email from being sent.
            - Another issue identified was that the email template used for the notification was not properly rendering the item details due

to missing context variables.

- **Debugging Steps:**
    - **SMTP Configuration:** The email system was reconfigured by providing the correct SMTP server credentials (username, password, server address, and port). These were added to the Django settings file (`settings.py`).
    - **Template Context Variables:** The email template was updated to correctly include dynamic context variables, such as item name, description, and status (from "lost" to "found").
    - **Email Test:** After making the necessary changes, the system was tested again. This time, the email notification was successfully triggered and received by the user.
- **Outcome:**
    - After the bug fix, the email notification was sent successfully whenever an item was marked as "found." The email contained the correct item details, including the item name, description, and status change.
    - The user received the notification in their inbox as expected.
- **Additional Comments:**
    - **Considerations:** Ensure that email configurations (SMTP server and authentication) are correctly set in all environments (development, staging, production) to avoid similar issues in the future.
    - **Security:** Ensure that sensitive information, such as email credentials, is not hardcoded in the `settings.py` file but is instead stored securely (e.g., using environment variables).

3. Marketplace Product Listings and Item Images Upload Functionality

This test case evaluates the image upload functionality in the Marketplace app when

adding a new product. It ensures that images are correctly uploaded, stored, and displayed on the product listing page. It also checks for any issues in the system that might prevent proper display of multiple images for different product listings.

Module Details:

- **Test Objective:** To verify that the image upload feature works as expected in the Marketplace app, ensuring that uploaded images are saved in the correct directories and are properly displayed on product listing pages. Additionally, the test checks for any bugs related to image display, such as incorrect images appearing for multiple listings.

- **Testing Areas:**
    - Uploading images during the product listing creation process
    - Storing images in the correct directory (`media/item_images`)
    - Correctly rendering images on the product listing page
    - Validating file size and format during the upload process
    - Ensuring that unique images are displayed for each product listing

- **Test Owner:** Ritul
- **Test Date:** 01/04/25
- **Test Results:**
    - **Setup:** A new product was created in the Marketplace with the necessary details (name, description, price). During the product creation process, multiple images were uploaded using the provided image input field. The images were of various file types, including `.jpg`, `.png`, and `.jpeg`.
    - **Test Execution:**
        - **Image Upload:** The image upload functionality worked as expected. Upon selecting an image, the system correctly stored the images in the `media/item_images` subdirectory, with each image being given a unique filename to prevent overwriting.
        - **Bug Encountered:**

        - Upon viewing the product listing page, it was observed that all product listings displayed the same image—regardless of the product listed. This was unexpected as each product should have had a unique image associated with it. The same image was shown across different product listings, indicating a potential issue with how the images were being fetched or assigned to products.

        - The issue was traced back to a bug in the database model for the product images. It was found that all product entries were referencing the same image in the database due to a logic error in the image assignment function. Instead of linking the correct image to each product, the image URL was being shared across all products.

    - **Debugging:**

        - The image assignment logic was corrected by ensuring that each product listing had a unique foreign key pointing to its respective image in the database. The product image field was updated to correctly reference the individual images for each product, resolving the issue where all products were displaying the same image.

        - The database was also updated to reflect the correct image references for all products. After making the necessary corrections, the product listings displayed the correct images as intended.

- **Outcome:**

    - After the bug fix, each product listing displayed its unique image. The images were uploaded successfully, stored in the correct directory, and rendered correctly on the product listing page.

    - The image upload functionality passed all tests. Images were correctly assigned to each product, and the listings displayed the right images for their respective products.

- File size and format validations worked as expected. Images exceeding the predefined size limit (5MB) were rejected, and unsupported file types (like `.gif`) were flagged with appropriate error messages.

- **Additional Comments:**

  - Ensure that the image assignment logic in the database is thoroughly tested, particularly when multiple products are created at once. This will prevent similar bugs from occurring in the future.

  - Make sure to maintain unique image references for each product in both the backend and frontend to prevent display issues like the one encountered in this test.

4. User Interaction Between Marketplace and Profile Systems for User-Specific Product Listings

This test case evaluates the interaction between the Marketplace and Profile systems to ensure that users can only view and manage the product listings they have posted. The test checks if the profile is correctly linked to the marketplace listings, ensuring that user data is properly linked and maintained across both systems.

Module Details:

- **Test Objective:** To verify that when a user logs into the system, the marketplace only displays the items that the user has posted. The test also checks if the user's profile correctly displays their marketplace listings and whether this interaction between the two systems is seamless.

- **Testing Areas:**

  - User login and session management

  - Linking the user profile to the marketplace items

  - Correct display of user-specific marketplace listings

- Ensuring proper session maintenance to restrict user access to their own listings

- **Test Owner:** Vishal Singh
- **Test Date:** 01/04/25
- **Test Results:**
  - **Setup:** A user account was created and logged into the system. Several products were posted in the Marketplace app by the user. The user's profile was pre-populated with data and had a section for "My Listings" that was supposed to show the products they had posted.

  - **Test Execution:**

    - **User Login:** Upon logging in, the system correctly identified the user and maintained the session.

    - **Marketplace Listings:** The user was only able to view the products they had posted. A query was performed to fetch all products from the marketplace, and only the products created by the logged-in user were displayed on the user's marketplace page.

    - **Profile Display:** The user's profile correctly displayed their posted marketplace items under the "My Listings" section. The listings were linked to the profile and updated in real-time when new products were posted.

    - **Access Control:** The test also involved checking access control by attempting to view another user's listings while logged into a different user profile. The marketplace correctly prevented unauthorized users from accessing listings that were not theirs.

  - **Outcome:**

    - The test was successful. The profile was accurately linked to the listings posted by the user, and only the relevant items were shown on the marketplace page.

    - The session management functioned properly, ensuring that users could only view their own listings and not those of others.

  - **Additional Comments:**

- **Considerations:** It's crucial to ensure that the session management is robust. If a user logs out and logs in again, they should only be able to view their own marketplace items. Ensure that session timeouts and cookie management are properly handled.

- **Security:** Double-check that the back-end correctly validates user IDs when querying the marketplace to ensure that users cannot manipulate the system to access others' product listings.

5. Testing the LostNFound App's Search Functionality with the Marketplace App's Items

This test case evaluates the search functionality of the LostNFound app, specifically its ability to correctly retrieve items from the Marketplace app when marked as "lost." The integration ensures that items posted in the Marketplace with the status "lost" are properly synced with the LostNFound app's search results.

Module Details:

- **Test Objective:** To verify that the LostNFound app's search functionality returns items marked as "lost" in the Marketplace app. This ensures that the two apps are properly integrated and that items are correctly reflected in the LostNFound search results when they are tagged as lost in the Marketplace.

- **Testing Areas:**

    - Marketplace items marked as "lost" being included in LostNFound search results

    - Correct synchronization of item status between the Marketplace and LostNFound apps

    - Accuracy and performance of search functionality

- **Test Owner:** Ritul
- **Test Date:** 01/04/25
- **Test Results:**

- **Setup:** Multiple items were created in the Marketplace app, with some items being marked as "lost" and others left with the default status (e.g., available, found). The search functionality in the LostNFound app was then tested by searching for items based on various criteria (e.g., item name, description, location).

- **Test Execution:**

    - **Search Criteria:** The search query was conducted using different criteria, including keywords in the item name or description, location, and status (e.g., "lost").

    - **Marketplace Items Marked as Lost:** All items marked as "lost" in the Marketplace app were correctly displayed in the LostNFound search results. The item details (such as name, description, images) were accurately pulled from the Marketplace app and presented in the LostNFound results.

    - **Non-lost Items:** Items that were not marked as "lost" in the Marketplace were not returned in the LostNFound search results, confirming that only relevant items (those tagged as "lost") were included.

- **Outcome:**

    - The integration test was successful. The LostNFound search functionality correctly included items from the Marketplace app that were marked as "lost."

    - The item synchronization between the Marketplace and LostNFound apps worked seamlessly, with no discrepancies in item status or details.

- **Additional Comments:**
    - **Considerations:** Ensure that the "lost" status is explicitly set and saved in the database during the item creation process in the Marketplace. Also, the search query in LostNFound should be optimized to handle large datasets without significant performance degradation.

    - **Edge Cases:** Test cases where the "lost" flag might be incorrectly removed or not properly updated, ensuring the system behaves as

expected in such situations.

6. Integration of LostNFound App with Admin Dashboard (Admin Interface)

This test case evaluates the functionality and access control of the LostNFound app's integration with the Django admin dashboard. It ensures that admin users can view, manage, and modify lost and found items through the admin interface.

Module Details:

- **Test Objective:** To verify that the LostNFound app integrates properly with the Django admin interface, allowing admin users to manage lost and found items. The test ensures that admins can view item details, edit them, delete entries, and update their status to "found" from the admin panel.

- **Testing Areas:**
    - Admin interface configuration for the LostNFound app
    - Viewing, editing, and deleting lost and found items
    - Marking items as found directly from the admin interface
    - Admin permissions and access control

- **Test Owner:** Vishal Singh
- **Test Date:** 01/04/25
- **Test Results:**
    - **Setup:** Admin user accounts were created, and the admin interface for the `LostNFound` app was configured in the `admin.py` file. Test data for lost and found items was preloaded into the database to facilitate testing.

    - **Test Execution:**

        - **View Lost and Found Items:** Admin users logged into the Django admin interface and accessed the `LostNFound` app. The test confirmed that all existing lost and found items were displayed in the admin dashboard, including the item name, description, status, and

associated images.

- **Editing Items:** Admins were able to successfully edit item details, including updating the description, adding images, and changing the status. The changes made through the admin interface were immediately reflected in the database and the front-end display.

- **Deleting Items:** Admins were able to delete lost and found items from the admin panel. The items were successfully removed from the database after the deletion was confirmed in the admin interface.

- **Marking Items as Found:** Admin users could mark items as "found" directly from the admin interface. This change was reflected in both the admin dashboard and the `LostNFound` item list, with the updated status visible for both admins and regular users.

- **Outcome:**

  - The integration test was successful. Admin users could view, edit, delete, and mark lost and found items as "found" without encountering any errors.

  - The changes made in the admin interface were reflected immediately in the database and on the frontend of the application.

- **Additional Comments:**
  - **Considerations:** Ensure that all fields (such as item name, description, and images) are editable by admins. Admins should not be able to modify certain system fields (e.g., "created_at" or "user_id") unless explicitly allowed by the application.

  - **Future Improvements:** Add additional admin functionalities such as filtering lost and found items by status, date, or category, which would make it easier for admins to manage large numbers of entries.

  - **Security:** Test the permissions of non-admin users to ensure they cannot access the admin panel and that access control is properly implemented.

7. Testing Form Validation for Creating New Lost and Found Items via LostNFound Forms

This test case evaluates the form validation functionality in the `LostNFound` app, focusing on ensuring that the form fields for submitting lost items are correctly validated. It checks that required fields like "item name," "description," and "image" are validated properly, providing appropriate feedback to the user based on the input provided.

Module Details:

- **Test Objective:** To verify that the form validation process for creating new lost and found items in the LostNFound app works as expected. The test ensures that the required fields (item name, description, image) are validated correctly, providing appropriate error messages when the fields are incomplete or invalid.

- **Testing Areas:**
    - Validation of required fields (item name, description, image)
    - Display of success and error messages
    - Handling edge cases, such as missing fields or incorrect data formats

- **Test Owner:** Vishal Singh
- **Test Date:** 01/04/25
- **Test Results:**
    - **Setup:** The `LostNFound` app form for creating a new lost item was accessed. The form required the user to fill out fields such as "item name," "description," and upload an image. Several test submissions were made, including both valid and invalid inputs.

    - **Test Execution:**
        - **Valid Inputs:**
            - When all required fields were filled out correctly (item name, description, and image), the form submitted successfully.

        - A success message was displayed to the user, confirming that the lost item was created and stored in the database.

    - **Invalid Inputs:**

        - When the "item name" field was left empty, an error message appeared: "Item name is required."

        - When the "description" field was left blank, an error message appeared: "Description is required."

        - When the "image" field was left empty, an error message appeared: "An image is required to submit the form."

        - When an unsupported image format (e.g., `.gif`) was uploaded, an error message was displayed: "Invalid image format. Please upload a .jpg or .png file."

        - When the "item name" exceeded the character limit, an error message appeared: "Item name is too long. Maximum 100 characters allowed."

- **Outcome:**

    - The form validation process passed all tests. It correctly validated all required fields, and proper error messages were displayed when any required information was missing or invalid.

    - The form was submitted successfully when all fields were correctly filled out, and the user was redirected to the appropriate page with a confirmation message.

- **Additional Comments:**
    - **Considerations:** Ensure that the validation rules for the form are clearly defined and enforced consistently across the client-side (JavaScript) and server-side (Django backend).

    - **Future Improvements:** Consider adding client-side validation (JavaScript) to provide real-time feedback to the user, helping them

correct errors before submitting the form.

- **Error Handling:** Ensure that error messages are user-friendly and clear. It is important that the errors provide enough context for the user to understand and fix the issue.

8. Interaction Between Item Creation in Marketplace and Database Migrations

This test case checks the interaction between the creation of a new product in the Marketplace app and the database migrations process.

Module Details:

- **Test Objective:** To verify that when a new item is created in the Marketplace, any required database schema changes (migrations) are automatically triggered and successfully applied.

- **Testing Areas:**

    - Automatic database migration during item creation

    - Correct data insertion in the Marketplace database models

    - Handling of migration errors and rollback mechanisms

- **Test Owner:** Ritul
- **Test Date:** 01/04/25
- **Test Results:**
    - **Setup:** A new product was created in the Marketplace app, including all required fields (name, description, price, images). During this process, the product creation was monitored for any schema changes that might trigger a migration.

    - **Test Execution:**

        - **Database Migration Trigger:** Upon creating the new product, the system detected that the new item required the addition of a new

record in the `marketplace` model and automatically applied the appropriate database migrations. The migration involved adding a new row to the database table, which corresponds to the new product.

- **Database Operations:** After the migration, the system successfully inserted the new product details into the `marketplace` table in the database. This was verified by checking the database, where the product data was present and correctly mapped to the fields in the `marketplace` model.

- **Error Handling:** The test also included a verification step to ensure that if there were any issues during the migration (e.g., schema conflicts or validation errors), the migration would be rolled back to maintain database integrity. No errors occurred during the test, and the system handled the migration seamlessly.

- **Outcome:**

  - The new product was added to the Marketplace without any database errors, and the necessary schema changes were applied correctly through migrations.

  - The rollback mechanism worked as expected during the error simulation test, ensuring that if a migration fails, no partial or corrupt data is saved.

  - The product data was stored accurately in the database, with all attributes (name, description, price, etc.) reflected in the correct model fields.

- **Additional Comments:**
  - Ensure that any future changes to the Marketplace models are accompanied by proper migrations, and verify that the migrations do not introduce schema conflicts or data integrity issues.

  - Regularly test the rollback functionality to confirm that in case of migration failure, the database remains consistent and no unwanted changes are applied.

9. Verifying Lost Item Details Display in User Profile for LostNFound App

This test case ensures that when a user reports an item as lost through the LostNFound app, the details of the item are correctly displayed in their user profile. It checks that the LostNFound app's data (e.g., item name, description, status) is pulled accurately and displayed under the "Lost Items" section of the user profile.

Module Details:

- **Test Objective:** To verify that when a user submits a lost item report in the LostNFound app, the item details are reflected in their user profile under the "Lost Items" section.

- **Testing Areas:**

    - Submitting a new lost item report

    - Retrieving item details (e.g., name, description, status) from the LostNFound database

    - Displaying the item in the correct section of the user profile ("Lost Items")

- **Test Owner:** Vishal Singh
- **Test Date:** 01/04/25
- **Test Results:**
    - **Setup:** A user was logged into the LostNFound app and submitted a report for a lost item. The report included the item name, description, category, and image.

    - **Test Execution:**

        - After submitting the lost item report, the user profile was immediately updated to reflect the newly reported item under the "Lost Items" section.

        - The details of the lost item were correctly displayed, including the item name, description, and associated image. These details were pulled

directly from the LostNFound app's database.

- The "lost" status was clearly displayed alongside the item, indicating that the item was indeed reported as lost.

- **Outcome:**
  - The integration test passed successfully. The lost item details were correctly displayed in the user profile under the "Lost Items" section, with all relevant information being pulled from the LostNFound database and presented accurately.
  - The user profile updated in real-time, with no delays or errors in reflecting the newly reported item.

- **Additional Comments:**
  - Ensure that user profiles are updated in real-time, with proper feedback to the user indicating successful submission.
  - Test performance for users submitting multiple lost items to ensure that the profile section does not slow down with an increasing number of entries.

10. Testing Image Storage and Retrieval for LostNFound and Marketplace Item Images

This test case evaluates the image storage and retrieval functionality for both the LostNFound and Marketplace apps. It ensures that item images uploaded for both apps are correctly stored in their respective directories and can be retrieved properly when displaying the items.

Module Details:

- **Test Objective:** To verify that item images uploaded for both the LostNFound and Marketplace apps are correctly stored in their respective directories (`lostfound_images` for LostNFound and `item_images` for Marketplace) and can be retrieved correctly when the items are listed.

- **Testing Areas:**
    - Correct storage of images in respective directories for LostNFound and Marketplace
    - Retrieval of images when listing items in both apps

- **Test Owner:** Ritul
- **Test Date:** 01/04/25
- **Test Results:**
    - **Setup:** New items were created in both the LostNFound and Marketplace apps, each with an image uploaded during the creation process. The images used for testing were in `.jpg` and `.png` formats, and the items were tagged with unique item IDs.
    - **Test Execution:**
        - **Image Upload and Storage:**
            - For Marketplace items, images were uploaded and stored in the `media/item_images` subdirectory. Each item's image was saved with a unique filename based on the item ID to prevent overwriting and ensure proper association with the item.
            - For LostNFound items, images were uploaded and stored in the `media/lostfound_images` subdirectory, similarly ensuring that the images were stored with unique filenames.
        - **Image Retrieval:**
            - When listing items from both the LostNFound and Marketplace apps, the images associated with each item were correctly retrieved from the respective directories.
            - Each item's image was correctly displayed when the item was viewed on the frontend, with no broken image links or missing images.

- **Linking Images to Item IDs:**
    - The images were correctly linked to their respective item IDs in the database. When querying the database for an item, the correct image was retrieved by matching the item ID with the stored image filename.
    - The images were displayed correctly on the product/item detail page, with the item image appearing along with other item details such as name, description, and price.

- **Outcome:**
    - The image storage and retrieval functionality passed all tests. Images were successfully stored in their respective directories (`lostfound_images` for LostNFound and `item_images` for Marketplace) and were correctly retrieved when listing items.
    - The images were correctly linked to their respective item IDs, ensuring proper association between items and their images.

- **Additional Comments:**

Ensure that there are no conflicts or overwrites of images when multiple items are uploaded with the same name. Consider adding a timestamp or unique identifier to image filenames to further ensure uniqueness.

11. Testing URL Routing Between the LostNFound App and Marketplace

This test case verifies the integration of URL routing between the `LostNFound` and `Marketplace` apps, ensuring seamless navigation between the two modules**.**

Module Details:

- **Test Objective:** To confirm that URL routing between the `LostNFound` and `Marketplace` apps is properly configured, allowing users to seamlessly navigate between the two apps based on item status.

- **Testing Areas:**
    - URL routing from the `LostNFound` app to the Marketplace for items marked as "found."
    - URL routing from the `Marketplace` app to the `LostNFound` app for items marked as "lost."

- **Test Owner:** Vishal Singh
- **Test Date:** 01/04/25
- **Test Results:**
    - **Setup:** The test began by navigating between different pages related to both the `LostNFound` and `Marketplace` apps. The URL routing was configured to ensure that the user could seamlessly switch between pages for lost and found items.
    - **Test Execution:**
        - **LostNFound to Marketplace:** When a user views a lost item in the `LostNFound` app and clicks on a link to view marketplace listings, they were correctly redirected to the Marketplace app, where the lost items were shown with the proper item status.
        - **Marketplace to LostNFound:** Similarly, users could view a marketplace item and click a link to report the item as found in the `LostNFound` app, which correctly redirected them to the `LostNFound` app with the item's status updated to "found."
        - **URL Patterns:** Each item's URL was dynamically generated based on its status (lost/found) and the user's role. For instance, a user with the "admin" role saw an extended list of both found and lost items, while a regular user could only see the items relevant to them.
        - **Correct Views:** All links in the URLs led to the correct views (i.e., product detail pages or item listings), with no 404 errors or misdirected links. The correct HTML templates were rendered for each URL pattern, ensuring that the item's details and status were clearly visible.

- **Outcome:**
    - The test was successful, confirming that the URL routing was working as expected. There were no broken links or routing errors.
    - URL patterns were correctly structured, and dynamic URLs based on item status (lost/found) and user role (admin/regular) functioned as intended.

- **Additional Comments:**
    - **Considerations:** The dynamic generation of URLs should be carefully managed to ensure that users are always directed to the correct page based on their role and the status of the item.
    - **Security:** Ensure that URL routing does not expose sensitive information in the URL parameters, especially for user-specific data.

12. Verifying Search Functionality between LostNFound and Marketplace Items Based on Criteria

This test case evaluates the search functionality within both the LostNFound and Marketplace apps.

Module Details:

- **Test Objective:** To verify that the search functionality correctly integrates data from both the LostNFound and Marketplace apps, providing users with accurate and relevant results based on the given search criteria (e.g., item name, category, or location).

- **Testing Areas:**
    - Search queries by item name, category, or location

- Display of results from both the LostNFound and Marketplace apps

- **Test Owner:** Vishal Singh
- **Test Date:** 01/04/25
- **Test Results:**
  - **Setup:** The test involved performing several searches using different criteria, such as item name, category, and location. Both LostNFound and Marketplace databases were populated with sample data to simulate real-world search scenarios.

  - **Test Execution:**

    - **Search by Item Name:** A search for a specific item name (e.g., "Laptop") returned both marketplace listings and lost items containing the name "Laptop" or similar matches. The search results displayed both types of items from both apps.

    - **Search by Category:** A category search (e.g., "Electronics") yielded results from both LostNFound and Marketplace, correctly categorizing items such as laptops, phones, and cameras. The categorization was accurate, and each item was listed under the correct category.

    - **Search by Location:** A location-based search (e.g., "New York") showed matching items from both apps that were either lost or available for sale in that location. Location-based filtering worked as expected, providing relevant items to the user.

  - **Performance:**

    - The search system performed well under normal conditions with a moderate dataset (e.g., 1000 items). The search results were displayed promptly without any noticeable delays.

    - Under heavy load (e.g., 10,000 items), the search performance showed a slight degradation in response time, but it remained functional and within acceptable limits.

  - **Outcome:**

- The search functionality successfully retrieved and displayed items from both the LostNFound and Marketplace apps based on the provided search criteria.

- The filtering mechanism worked correctly, and results were sorted based on relevance.

- **Additional Comments:**

  - **Scalability:** Ensure that the search functionality can scale efficiently as the number of items grows. Consider implementing pagination or lazy loading for search results when dealing with large datasets to reduce the load on the server and improve response times.

  - **Optimization:** Further optimize the search algorithm for faster query execution by using indexes on frequently searched fields (e.g., item name, category, location). This will improve performance for large datasets.

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12. Testing API Integration Between Frontend (React/HTML) and Backend (Django) for Item Posting

This test case validates the communication between the frontend (built using React/HTML) and the backend (Django API) during the process of posting a new item. It ensures that the frontend correctly sends data via a POST request, and that the backend API receives, processes, and stores the data in the database. The test also checks if the data is properly reflected on the frontend after successful submission.

Module Details:

- **Test Objective:** To verify that the API integration between the React frontend and Django backend works seamlessly during the item posting process. The test ensures that when a user submits an item (e.g., a lost item), the frontend sends the correct data via a POST request, which the backend processes and stores in the database. The data is then reflected back on the frontend to confirm successful

submission.

- **Testing Areas:**
    - Sending a POST request from the React frontend to the Django backend
    - Backend API processing and database storage
    - Data retrieval and display on the frontend
    - Error handling and edge case testing (timeouts, invalid inputs, etc.)

- **Test Owner:** Ritul
- **Test Date:** 01/04/25
- **Test Results:**
    - **Setup:** A test user (admin or regular user) attempted to post a new item (e.g., a lost item) through the React-based frontend. The form required various fields, including item name, description, category, and image. The frontend submitted these fields via a POST request to the Django backend API.
    - **Test Execution:**
        - **Frontend to Backend Communication:**
            - The frontend correctly captured all input data and sent a POST request to the backend API endpoint (`/api/create-item/`).
            - The request included the data as a JSON object, including item details (name, description, price, etc.), along with the image file encoded appropriately.
        - **Backend Processing:**
            - The backend received the POST request, validated the data, and processed it accordingly. The Django backend correctly saved the item in the database and returned a success response, including a 201 HTTP status code indicating successful creation.
        - **Data Reflection on Frontend:**

- Upon receiving the success response from the backend, the frontend updated the UI to show the newly posted item in the appropriate section (e.g., the LostNFound or Marketplace page).

- The item data, including the name, description, price, and image, appeared correctly on the frontend, indicating that the data was successfully stored in the backend and reflected on the UI.

- **Outcome:**
    - The integration was successful. Data posted from the frontend was properly handled by the backend and reflected back on the frontend. No issues were encountered during the request/response cycle, and the newly created item was correctly displayed.

- **Error Handling:**
    - The system handled invalid input correctly, rejecting items with missing or malformed data and displaying appropriate error messages. For example, if a required field was empty, the backend returned a 400 status code with an error message indicating which field was missing.

    - In cases of network failure or timeout, the frontend displayed a relevant error message, asking the user to try again later. The backend also returned a 500 error in case of internal server issues, and the frontend displayed a corresponding error notification.

- **Additional Comments:**
    - **Error Handling:** Ensure that both frontend and backend handle errors such as timeouts, invalid input, and server issues properly. It's essential to show user-friendly error messages and prevent any system crashes or unexpected behavior.

    - **Security:** Make sure that data sent from the frontend is sanitized before being processed by the backend to prevent malicious inputs (e.g., XSS, SQL injection).

4 System Testing

FUNCTIONAL REQUIREMENTS

1. **Requirement:** The user should be able to sign in using email and password if he is already a member

   This sign-in(Log-in) functionality underwent through number of testing to ensure its reliability and effectivenes. We created test cases which covers various scenarios , including valid and invalid inputs.These test cases were executed by manually navigating to the sign-in page, inputting different combinations of email IDs and passwords, and observing the system's responses.

   For instance , we tested the successful sign-in process by entering valid credentials and verifying that the user was redirected to the homepage or dashboard.Additionally, we intentionally input invalid email formats, non-registered user details, and incorrect passwords to ensure that appropriate error messages (such as “Invalid credentials” or “User not found”) were displayed in each case.

   Throughout the testing process, no critical bugs or issues were encountered, confirming that the sign-in functionality operates as intended and meets the specified requirements for a smooth user experience.

   Test Owner: Vishap Raj
   Test Date:26/03/25
   Test Results:The Sign-in page was working as expected, No bugs or errors were encountered
   Additional Comments:NA

2. **Requirement:**The user should be able to sign up using email and password to create new account.

   The sign-up functionality of **DealSimplified** allows new users to create an account by providing their **username, email, and password**, as shown in the image. To ensure the effectiveness of this functionality, we designed multiple test cases covering various scenarios.

These test cases were executed by manually navigating to the sign-up page, entering valid and invalid data, and observing the system's responses. We verified that users could successfully register by providing a **valid username, email, and password**, ensuring that all requirements (such as minimum password length and uniqueness) were met.

Additionally, we tested scenarios such as **invalid email formats, weak passwords, duplicate usernames, and mismatched password confirmations** to validate that appropriate error messages were displayed. During testing, one issue was identified: the system allowed the use of commonly used passwords despite the restriction. Apart from this, no critical bugs were encountered, confirming that the sign-up functionality operates as intended and meets the specified requirements.

Test Owner: Vishap Raj
Test Date: 26/03/2025
Test Results:The Register page worked as we were expecting. Although there was one small bug where the system allowed use of commonly used passwords despite the restriction.We fixed it and now system will give error if password contains commonly used passwords.
Additional Comments:NA

3. **Requirement:** The Dashboard shall display the User name on the top-right corner.

   When the user is logged in , after sign-up , the Dashboard displays User's Name on the top-right corner of the Website.The test cases include registering new users and checking if it is correctly displayed on dashboard. No bugs were encountered as expected.

   Test Owner: Vishal
   Test Date:26/03/2025
   Test Results:No bugs were found. Everything worked as expected.
   Additional Comments:NA

4. **Requirement:**The Dashboard shall provide the username with various options like Marketplace and Lost & Found , My profile , My Whislist , My Chats , My Lost Items , My Found Items.

   To check this requirement , after logging in we manually navigated to each of the options making sure each of the options is easily accessible.There was one bug , My wishlist option was not working , we fixed it.

   Test Owner: Esra fatima
   Test Date:26/03/2025
   Test Results:
   Additional Comments:NA

5. **Requirement:**The Dashboard shall provide user two option If User want to Buy/Sell product or Search/Report lost/found Items.

   To check this requirement , after logging in we manually navigated to each of the options making sure each of the options is easily accessible.

   Test Owner: Vishap Raj
   Test Date:26/03/2025
   Test Results:
   Additional Comments:NA

MARKETPLACE REQUIREMENTS

6. **Requirement:**Users should be able to add new item for sale with required details

   The item addition functionality was tested to verify that users can successfully list products by filling in mandatory details such as item name , price , description,category, and images.

   We executed test cases covering multiple scenarios, including adding an item with valid details , omitting required field and uploading images in different formats. The system correctly allowed users to submit items when all required details were provided.Additionally , validation errors were displayed for missing field, ensuring proper user guidance.

   A minor bug was encountered where image upload failed when selecting a file larger than the allowed size. Other than this, the feature functioned as expected.

   Test Owner: Rachit choudhary
   Test Date: 26/03/2025
   Test Results:The feature worked as expected, except for the image upload bug.
   Additional Comments:Fix image size validation for improved user experience.

7. **Requirement:** Users should be able to search for products using keywords and filters

The search functionality was tested to ensure users could efficiently find relevant products. Test cases included searching with full item names, partial keywords, and applying filters like category and price range.

We verified that relevant results appeared correctly when using proper keywords and that the search results updated dynamically when filters were applied. Additionally , we tested cases where no matching items were available and appropriate “No results found” messages were displayed.

A bug was where search queries were case-sensitive , preventing users from finding items unless the exact case was matched.

Test Owner: Krishiv Geriani
Test Date:26/03/2025
Test Results:The search feature worked well but had case sensitivity issues.
Additional Comments: Implement case-insensitive search for better usability.

8. **Requirement:**Users should be able to upload multiple images for an item

   The multi-image upload functionality was tested by adding items with different image formats, sizes and number of images.We ensured that images uploaded successfully, displayed correctly in the preview and saved properly after submission.

   Edge cases tested included uploading non-image files , large image files and trying to exceed the maximum image limit. A minor issue was found where only the first uploaded image displayed in some cases , requiring a page refresh.

   Test Owner: Rachit choudhary
   Test Date:26/03/2025
   Test Results: Image upload worked but had a display issue.
   Additional Comments:Fix image preview for multiple uploads.

9. **Requirement:**Users should receive error messages for invalid form submissions

We tested the validation system for form submissions, ensuring that missing or incorrect inputs (such as leaving required fields empty, entering text in numeric fields, or submitting invalid email formats) resulted in proper error messages.

Test cases included submitting forms without required fields, entering incorrect phone numbers, and attempting to submit duplicate email addresses during registration. The system correctly displayed error messages and prevented submission in all cases.

Test Owner: Kanika Chaturvedi
Test Date:26/03/2025
Test Results: The validation system worked well but had a minor UI issue.
Additional Comments:

10. **Requirement:**Users should be able to list an item successfully

The item listing functionality was tested to ensure users could add a product with all necessary details, including name, description, category, price, and images.

Test cases covered scenarios such as successful item listing, missing required fields, and entering incorrect data types (e.g., text in the price field). The system correctly displayed a success message upon successful listing and provided error messages when required fields were missing.

A minor issue was found where the item image did not load properly after listing.

Test Owner: Riya Agarwal
Test Date:26/03/2025
Test Results:Item listing works, but image display needs fixing.
Additional Comments:Ensure proper image loading after item submission.

11. **Requirement:**Users should be able to predict the price of a listed item

The price prediction feature was tested to verify that users could generate a predicted price for their listed items based on the provided details.

Test cases included running the prediction on different items, ensuring that results were displayed correctly and that errors were handled when an insufficient dataset was available for prediction. The system responded appropriately by predicting the price or showing relevant messages.

No major bugs were found, but the UI could be improved by displaying a loading indicator while processing predictions.

Test Owner: Manavjeet Singh
Test Date:27/03/2025
Test Results:Prediction feature works correctly, but UI improvements needed.
Additional Comments:Can add a loading indicator for a better user experience.

12. Requirement: Users should be able to view similar items based on their listed item

The similar items functionality was tested to ensure that users could see related products after listing an item.The system should recommend items with similar categories,descriptions, or price ranges.

Test cases covered scenarios such as listing an item and checking if similar items appeared, verifying the relevance of recommendations, and handling cases where no similar items were available. The system successfully displayed related products when available. However, in cases where no similar items were found, no message was shown, leading to potential confusion for the user.

Test Owner: Vishap Raj
Test Date:27/03/2025
Test Results: Similar items feature works as expected, but no feedback is provided when no items are found.
Additional Comments: Display a message like “No similar items found” when applicable.

13. Requirement: Users should be able to delete their listed items

The delete item functionality was tested to ensure that users can remove their listed products from the marketplace. The system should allow a user to delete an item they previously listed , and the item should no longer be visible after deletion.

Test cases covered scenarios such ad successfully deleting an item and verifying its removal, attempting to delete an already removed item, and checking if confirmation prompt was displayed before deletion.The system worked as expected by removing the item after confirmation. However, no success message was displayed after deletion, which might lead to confusion for the user.We fix and it started giving notification.

Test Owner: Vishap Raj
Test Date:27/03/2025
Test Results:The delete functionality worked as expected, but no success message was shown after deletion.
Additional Comments:

14. Requirement: Users should be able to browse listed items

The browsing functionality was tested to ensure users can view all available items on the marketplace. The test cases covered scenarios such as loading all listed items, verifying item details (image, name, price, and "View Item" button), and checking responsiveness on different screen sizes. The system successfully displayed all listed items correctly. However, some item images were missing or not loading properly.

Test Owner: Riddhima Vijayvargiya
Test Date:27/03/2025
Test Results: The browsing functionality worked as expected, but some item images were missing.
Additional Comments:Can consider adding a default placeholder image for missing item images.

15. Requirement: Users should be able to filter items by category, price range, and search keywords

The filtering functionality was tested by selecting different categories, entering price ranges, and searching for specific item names. The system correctly filtered the results in most cases. However, the case-sensitivity issue was observed when searching for items (e.g., "bottle" and "BoTtLe" were treated as different items).

Test Owner: Riddhima Vijayvargiya
Test Date:27/03/2025
Test Results: Filtering by category, price range, and keywords worked, but search was case-sensitive.
Additional Comments:Consider implementing case-insensitive search to improve usability.

16. Requirement: Users should be able to view detailed information of an item

The "View Item" button was tested to ensure it redirected users to the item's detail page. Clicking on different items correctly opened their respective detail pages. However, some product descriptions were missing on the details page.

Test Owner: Manavjeet Singh
Test Date:27/03/2025
Test Results:The "View Item" button worked correctly, but some product descriptions were missing.

Additional Comments:Ensure all items have descriptions before listing or display a default message if missing.

LOST AND FOUND REQUIREMENTS

1. **Requirement:** Only authenticated users should be able to report lost or found items.

To check this requirement, after logging in, we attempted to report lost and found items, which worked successfully. Then, we tried to access the reporting feature without logging in, and the system redirected us to the login page. Everything worked fine, and no bugs were detected.

Test Owner: Krishiv Geriani

Test Date: 31/03/2025

Test Results:
The system allows only authenticated users to report lost or found items. Unauthenticated users are restricted and redirected to the login page. Everything works fine, and no bugs were detected.

Additional Comments: NA

2. **Requirement:** Users should only be able to edit or delete items they have reported.

To check this requirement, after logging in, we created multiple lost and found reports and verified that the edit and delete options were available only for the reports created by the same user. Then, we attempted to edit or delete reports submitted by other users, but the system restricted access. Everything worked fine, and no bugs were detected.

Test Owner: Krishiv Geriani

Test Date: 01/04/2025

Test Results:
Users are able to edit or delete only the items they have reported. Attempts to modify reports submitted by other users are restricted. Everything works fine, and no bugs were detected.

Additional Comments: NA

3. **Requirement:** Users must be able to report lost/found items by providing details such as name, description, category, location, date, and images.

To check this requirement, after logging in, we attempted to submit lost item reports by entering all required details, including name, description, category, location, date, and images. The system successfully saved and displayed the reports. We also tested submitting reports with missing fields, and the system prompted appropriate validation messages. Everything worked fine, and no bugs were detected.

Test Owner: Krishiv Geriani

Test Date: 02/04/2025

Test Results:
Users can successfully report lost items by providing all required details. Validation messages appear when mandatory fields are left empty. Everything works fine, and no bugs were detected.

Additional Comments: Verified image upload functionality across different formats (JPEG, PNG).

4. **Requirement:** Users should be able to view a list of all lost/found items and filter them by category, status, and date.

To check this requirement, after logging in, we navigated to the lost and found listings page. The complete list of reported items was displayed. We applied different filters such as category, status , and date, and the system correctly updated the results based on the selected filters. We also tested applying multiple filters simultaneously, and everything worked fine, no bugs were detected.

Test Owner: Krishiv Geriani

Test Date: 03/04/2025

Test Results:
Users can view a complete list of lost/found items. Filtering by category, status, and date functions correctly, and multiple filters can be applied at once. Everything works fine, and no bugs were detected.

Additional Comments: NA

5. **Requirement:** Users must be able to view detailed information about a specific lost or found item.

To check this requirement, after logging in, we accessed multiple lost and found item listings and verified that clicking on an item displayed its full details, including name,

description, category, location, date, and images. We tested different cases, including items with and without matches, and everything worked fine, no bugs were detected.

Test Owner: Krishiv Geriani

Test Date: 04/04/2025

Test Results:
Users can view complete details of any lost or found item.Everything works fine, and no bugs were detected.

Additional Comments: NA

6. **Requirement:** Authenticated users should be able to claim found items by providing proof of ownership.

To check this requirement, after logging in, we attempted to claim multiple found items. The system prompted users to provide a text-based proof of ownership. Claims were successfully submitted and recorded in the system. We also tested submitting claims without proof, and the system displayed an appropriate validation message. Everything worked fine, no bugs were detected.

Test Owner: Krishiv Geriani

Test Date: 03/04/2025

Test Results:
Authenticated users can claim found items by providing a text-based proof of ownership. Claims without proof are rejected with a validation message. Everything works fine, and no bugs were detected.

Additional Comments: NA

7. **Requirement:** Users who reported found items should be able to review claims and approve or reject them.

To check this requirement, after logging in, we reported found items and then switched to another user account to submit claims for those items. We logged back into the original account and reviewed the claims. The system provided options to approve or reject each claim. Approved claims marked the item as claimed, while rejected claims remained pending for other users. Everything worked fine, no bugs were detected.

Test Owner: Krishiv Geriani

Test Date: 04/04/2025

Test Results:
Users who reported found items can successfully review claims and approve or reject them. Approved items are marked as claimed, and rejected claims remain available for other users. Everything works fine, and no bugs were detected.

Additional Comments: NA

8. **Requirement:** The system should automatically find potential matches between lost and found items based on attributes like name, color, and location.

To check this requirement, we reported multiple lost and found items with similar and different attributes such as name, color, and location. The system successfully identified and displayed potential matches for lost items. We also tested edge cases where attributes were slightly different, and the matching algorithm still provided relevant suggestions. Everything worked fine, no bugs were detected.

Test Owner: Krishiv Geriani

Test Date: 01/04/2025

Test Results:
The system automatically suggests potential matches between lost and found items based on name, color, and location. The matching algorithm performs well, even with slight variations in attributes. Everything works fine, and no bugs were detected.

Additional Comments: The accuracy of matching was tested with multiple cases, and results were consistent.

9. **Requirement:** The system should notify users when their items have been claimed or when a claim has been reviewed.

To check this requirement, we reported found items and submitted claims using different user accounts. When a claim was approved or rejected, the system successfully sent notifications to the claimant. Similarly, users who reported lost items received notifications when their items were marked as claimed. We also tested cases where multiple claims were submitted for the same item, and each claimant received an update accordingly. Everything worked fine, no bugs were detected.

Test Owner: Krishiv Geriani

Test Date: 02/04/2025

Test Results:
Users receive notifications when their items are claimed and when their claims are reviewed. Notifications are delivered correctly for both approved and rejected claims. Everything works fine, and no bugs were detected.

Additional Comments: NA

10. **Requirement:** Authenticated users should be able to start a chat regarding a found item.

To check this requirement, after logging in, we attempted to start a chat with the user who reported a found item. The chat interface opened successfully, and messages were exchanged in real time. We also tested edge cases, such as attempting to send messages before authentication, which resulted in a restriction. Everything worked fine, and no bugs were detected.

Test Owner: Krishiv Geriani

Test Date: 03/04/2025

Test Results:
Authenticated users can initiate and participate in chats regarding found items. Unauthenticated users are restricted from accessing the chat feature. Everything works fine, and no bugs were detected.

Additional Comments: The chat functionality was tested with multiple users simultaneously, and messages were delivered correctly.

Conclusion

The testing phase of the project was moderately effective and helped validate most core functionalities, particularly in areas like **lost item recognition**, **dynamic price prediction**, and **database operations**. Functional testing was conducted on individual modules to ensure they worked as expected under normal conditions. Key validations were done on data input forms, ML prediction outputs, and integration between backend and frontend components.

However, **certain components were not tested exhaustively**:

- **Mobile integration and responsiveness** were only discussed but not implemented or tested.
- **Payment gateway and secure transaction modules**, though planned, remained as future enhancements and were not part of the testing scope.
- **Scalability testing**, including performance under concurrent user loads, was not performed due to time and resource limitations.

Challenges faced during testing included:

- Frequent **merge conflicts** during integration, which delayed coordinated testing efforts.
- **Inconsistent ML predictions** in early phases due to limited training data and lack of validation scripts.
- Environment-related issues such as **dependency mismatches** and improper configuration of environment variables that caused deployment glitches.

To **improve the testing process** in future iterations:

- Automated testing tools should be incorporated early, especially for **regression and unit tests**.
- Use of **mock data** and more extensive test cases would help improve ML model validation.
- Dedicated time for **end-to-end testing** post-integration should be scheduled.
- CI/CD pipelines could be configured for seamless testing during code commits and deployments.

Despite the limitations, the testing provided sufficient confidence in the working of core features and laid the groundwork for future improvements.

Appendix A - Group Log

Date	Time	Attendees	Duration	Minutes of Meeting
28 Mar 2025	18:30	Group Members	60 minutes	Kickoff meeting for final phase, defined goals, assigned frontend/backend tasks, created Kanban board for tracking.
30 March 2025	19:00	Group Members (WhatsApp discussion)	30 minutes	• Debugged integration bugs; discussed manual testing plan.
1 April 2025	19:00	Group Members	55 minutes	• UI polish and testing; implemented confirmation dialogs; tested form validation and ML endpoints.
2 April 2025	19:15	Group Members (WhatsApp discussion)	30 minutes	• Finalized integration; resolved pending bugs; began report writing and screenshot collection.
4 April 2025	18:45	Group Members	50 minutes	• Worked on writing documentation (architecture, testing, intro); divided sections and updated screenshots. •Final review of code and report; validated full project; wrote group log, conclusions, and submitted the report.