**Cyber Justitia Testing Document**

**Team 25**

**1. Introduction**

**Purpose**

This is a testing document detailing the steps we took to test Cyber Justitia.

**Scope**

Our testing process covered unit testing.

**2. Overview of Testing Methodology**

We employed automated tests to maintain code quality and verify the functionality of various components of Cyber Justitia. Automated testing helps in identifying and resolving issues efficiently and ensures that new changes do not introduce bugs.

**Types of Testing**

**Unit Testing:** We focused on unit testing to validate the smallest parts of our application in isolation. Each unit test checks a specific piece of functionality to ensure it works as intended.

**Tools**

**Django Test Framework:** We used the Django Test Framework to write and execute our unit tests. This framework integrates with our application, providing tools to test models, views, and forms.

**3. Test Environment**

**Local Development Setup:** All tests were conducted in a local development environment configured with Django.

**4. Test Cases and Results**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **ID** | **Description** | **Expected Result** | **Pass/Fail** |
| TUM | 2 | Test that the user is created correctly with the provided attributes. | User is created successfully with valid attributes. | Pass |
| TUM | 3 | Test the \_\_str\_\_ method of the user model. | String representation is correct. | Pass |
| TUM | 4 | Test that the email field enforces uniqueness. | ValidationError is raised for duplicate email. | Pass |
| TUM | 5 | Test that an invalid email format raises a ValidationError. | ValidationError is raised for invalid email format. | Pass |
| TUM | 6 | Test that first\_name and last\_name fields cannot be blank. | ValidationError is raised for blank first\_name and last\_name. | Pass |
| TUM | 7 | Test that the username field cannot be blank. | ValidationError is raised for blank username. | Pass |
| TUM | 8 | Test that the username field enforces uniqueness. | ValidationError is raised for duplicate username. | Pass |
| TUM | 9 | Test that the is\_banned field defaults to False. | is\_banned field defaults to False. | Pass |
| TUM | 10 | Test that the max length constraints are enforced for various fields. | ValidationError is raised for fields exceeding max length. | Pass |
| TUM | 11 | Test that a username with special characters raises a ValidationError. | ValidationError is raised for username with special characters. | Pass |
| TUM | 12 | Test that a username with only whitespace raises a ValidationError. | ValidationError is raised for username with only whitespace. | Pass |
| TUM | 13 | Test that first\_name and last\_name fields with only whitespace raise a ValidationError. | ValidationError is raised for whitespace only in first\_name and last\_name. | Pass |
| TUM | 14 | Test that an email with leading or trailing whitespace raises a ValidationError. | ValidationError is raised for email with whitespace. | Pass |
| TUM | 15 | Test that an invalid password raises a ValidationError. | ValidationError is raised for invalid password. | Pass |
| TUM | 17 | Test creating a professional user with a flair. | Professional user is created with flair. | Pass |
| TUM | 18 | Test that a blank flair raises a ValidationError. | ValidationError is raised for blank flair. | Pass |
| TUM | 19 | Test that the flair field allows a maximum length of 100 characters. | Flair is allowed up to 100 characters. | Pass |
| TUM | 20 | Test that a flair longer than 100 characters raises a ValidationError. | ValidationError is raised for long flair. | Pass |
| TUM | 21 | Test updating the flair of a professional user. | Flair is updated successfully. | Pass |
| TUM | 22 | Test creating a professional user with a valid reason\_banned. | Professional user is created with reason\_banned. | Pass |
| TUM | 23 | Test that a blank reason\_banned is allowed. | Blank reason\_banned is allowed. | Pass |
| TUM | 25 | Test creating a valid education record. | Education record is created successfully. | Pass |
| TUM | 26 | Test that school\_name field cannot be blank. | ValidationError is raised for blank school\_name field. | Pass |
| TUM | 27 | Test that degree field cannot be blank. | ValidationError is raised for blank degree field. | Pass |
| TUM | 28 | Test that start\_date field cannot be blank. | ValidationError is raised for blank start\_date field. | Pass |
| TUM | 29 | Test that school\_name field cannot exceed max length of 100 characters. | ValidationError is raised for school\_name field exceeding max length. | Pass |
| TUM | 30 | Test that degree field cannot exceed max length of 100 characters. | ValidationError is raised for degree field exceeding max length. | Pass |
| TUM | 31 | Test that start\_date cannot be in the future. | ValidationError is raised for future start\_date. | Pass |
| TUM | 32 | Test that end\_date field can be blank. | end\_date field is allowed to be blank. | Pass |
| TUM | 34 | Test creating a valid employment record. | Employment record is created successfully. | Pass |
| TUM | 35 | Test that company field cannot be blank. | ValidationError is raised for blank company field. | Pass |
| TUM | 36 | Test that position field cannot be blank. | ValidationError is raised for blank position field. | Pass |
| TUM | 37 | Test that start\_date field cannot be blank. | ValidationError is raised for blank start\_date field. | Pass |
| TUM | 38 | Test that company field cannot exceed max length of 100 characters. | ValidationError is raised for company field exceeding max length. | Pass |
| TUM | 39 | Test that position field cannot exceed max length of 100 characters. | ValidationError is raised for position field exceeding max length. | Pass |
| TUM | 40 | Test that start\_date cannot be in the future. | ValidationError is raised for future start\_date. | F |
| TUM | 41 | Test that end\_date field can be blank. | end\_date field is allowed to be blank. | Pass |
| TUV | 2 | Test that the index page renders correctly. | Index page renders correctly. | Pass |
| TUV | 3 | Test that an unauthenticated user can access the register page. | Unauthenticated user accesses register page. | Pass |
| TUV | 4 | Test that an authenticated user is redirected from the register page. | Authenticated user is redirected correctly. | Pass |
| TUV | 5 | Test that a new standard user can register with valid data. | Standard user registers successfully. | Pass |
| TUV | 6 | Test that a new professional user can register with valid data. | Professional user registers successfully. | Pass |
| TUV | 7 | Test that a weak password prevents registration. | Registration fails for weak password. | Pass |
| TUV | 8 | Test that non-matching passwords prevent registration. | Registration fails for non-matching passwords. | Pass |
| TUV | 9 | Test that an existing username prevents registration. | Registration fails for existing username. | Pass |
| TUV | 10 | Test that an existing email prevents registration. | Registration fails for existing email. | Pass |
| TUV | 11 | Test that an unauthenticated user can access the login page. | Unauthenticated user accesses login page. | Pass |
| TUV | 12 | Test that an authenticated user is redirected from the login page. | Authenticated user is redirected correctly. | Pass |
| TUV | 13 | Test that a user can log in with valid credentials. | User logs in successfully with valid credentials. | Pass |
| TUV | 14 | Test that logging in with invalid credentials fails. | Login fails with invalid credentials. | Pass |
| TUV | 15 | Test that an authenticated user can log out. | Authenticated user logs out successfully. | Pass |
| TUV | 17 | Test that the dashboard page is accessible. | Dashboard page is accessible. | Pass |
| TUV | 18 | Test updating user details with valid data. | User details are updated successfully. | Pass |
| TUV | 19 | Test that updating first name with a blank value fails. | First name update fails with blank value. | Pass |
| TUV | 20 | Test that updating last name with a blank value fails. | Last name update fails with blank value. | Pass |
| TUV | 21 | Test updating the password with valid data. | Password is updated successfully. | Pass |
| TUV | 22 | Test that changing the password with mismatched new passwords fails. | Password change fails for mismatched new passwords. | Pass |
| TUV | 23 | Test that changing the password with blank fields fails. | Password change fails for blank fields. | Pass |
| TUV | 24 | Test deactivating the account when the checkbox is checked. | Account deactivation succeeds with checkbox checked. | Fail |
| TUV | 25 | Test that deactivating the account without checking the checkbox fails. | Account deactivation fails without checkbox checked. | Pass |
| TUV | 26 | Test updating the user description with valid data. | User description is updated successfully. | Pass |
| TUV | 27 | Test updating the user flair with valid data. | User flair is updated successfully. | Pass |
| TUV | 28 | Test that updating the flair with a blank value fails. | Flair update fails with blank value. | Pass |
| TUF | 2 | Test updating user details with valid data. | User details are updated successfully with valid data. | Pass |
| TUF | 3 | Test updating user details with an empty first name. | ValidationError is raised for empty first name. | Pass |
| TUF | 4 | Test updating user details with an empty last name. | ValidationError is raised for empty last name. | Pass |
| TUF | 5 | Test updating user details with an empty email. | ValidationError is raised for empty email. | Pass |
| TUF | 6 | Test updating user details with a first name exceeding max length. | ValidationError is raised for first name exceeding max length. | Pass |
| TUF | 7 | Test updating user details with a last name exceeding max length. | ValidationError is raised for last name exceeding max length. | Pass |
| TUF | 8 | Test updating user details with a duplicate email. | ValidationError is raised for duplicate email. | Pass |
| TUF | 9 | Test updating the password with valid data. | Password is updated successfully with valid data. | Pass |
| TUF | 10 | Test updating the password with an incorrect old password. | ValidationError is raised for incorrect old password. | Pass |
| TUF | 11 | Test updating the password with non-matching new passwords. | ValidationError is raised for non-matching passwords. | Pass |
| TUF | 12 | Test updating the password with the new password same as the old password. | ValidationError is raised for same old and new password. | Pass |
| TUF | 13 | Test updating the description with valid data. | Description is updated successfully with valid data. | Pass |
| TUF | 14 | Test deactivating the account with the checkbox checked. | Account is deactivated successfully. | Pass |
| TUF | 15 | Test deactivating the account without checking the checkbox. | ValidationError is raised for not checking the checkbox. | Pass |
| TUF | 16 | Test updating the flair with valid data. | Flair is updated successfully with valid data. | Pass |
| TUF | 17 | Test updating the flair with an empty value. | ValidationError is raised for empty flair. | Pass |
| TUF | 18 | Test updating the flair with a value exceeding max length. | ValidationError is raised for flair exceeding max length. | Pass |
| TFM | 2 | Test creating a post with valid data. | Post is created successfully with valid data. | Pass |
| TFM | 3 | Test creating a post with an empty title. | ValidationError is raised for empty title. | Pass |
| TFM | 4 | Test creating a post with a title exceeding the maximum length. | ValidationError is raised for title exceeding max length. | Pass |
| TFM | 5 | Test creating a post with empty text. | ValidationError is raised for empty text. | Pass |
| TFM | 6 | Test creating a post with text exceeding the maximum length. | ValidationError is raised for text exceeding max length. | Pass |
| TFM | 7 | Test that each post has a unique slug. | Each post has a unique slug. | Pass |
| TFM | 8 | Test deleting a post. | Post is marked as deleted. | Pass |
| TFM | 10 | Test creating a comment with valid data. | Comment is created successfully with valid data. | Pass |
| TFM | 11 | Test creating a comment with an empty text. | ValidationError is raised for empty text. | Pass |
| TFM | 12 | Test creating a comment with text exceeding the maximum length. | ValidationError is raised for text exceeding max length. | Pass |
| TFM | 13 | Test deleting a comment. | Comment is deleted successfully. | Pass |
| TFM | 15 | Test creating a PostVote with valid data. | PostVote is created successfully with valid data. | Pass |
| TFM | 16 | Test creating a PostVote without specifying a user. | ValidationError is raised for missing user. | Pass |
| TFM | 17 | Test creating a PostVote without specifying a post. | ValidationError is raised for missing post. | Pass |
| TFM | 18 | Test creating a duplicate PostVote. | ValidationError is raised for duplicate PostVote. | Pass |
| TFM | 20 | Test creating a CommentVote with valid data. | CommentVote is created successfully with valid data. | Pass |
| TFM | 21 | Test creating a CommentVote without specifying a user. | ValidationError is raised for missing user. | Pass |
| TFM | 22 | Test creating a CommentVote without specifying a comment. | ValidationError is raised for missing comment. | Pass |
| TFM | 23 | Test creating a duplicate CommentVote. | ValidationError is raised for duplicate CommentVote. | Pass |
| TFV | 2 | Test accessing the forums page. | Forums page is accessible. | Pass |
| TFV | 3 | Test viewing a post detail page. | Post detail page is accessible. | Pass |
| TFV | 4 | Test viewing a non-existent post. | 404 error for non-existent post. | Pass |
| TFV | 5 | Test creating a post with valid data. | Post is created successfully with valid data. | Pass |
| TFV | 6 | Test creating a post with blank data. | ValidationError is raised for blank data. | Pass |
| TFV | 7 | Test creating a post when not logged in. | Post creation is redirected to login. | Pass |
| TFV | 8 | Test creating a comment with valid data. | Comment is created successfully with valid data. | Pass |
| TFV | 9 | Test creating a comment with blank data. | ValidationError is raised for blank data. | Error |
| TFV | 10 | Test creating a comment when not logged in. | Comment creation is redirected to login. | Pass |
| TFV | 11 | Test deleting a post as the post owner. | Post is deleted successfully by owner. | Pass |
| TFV | 12 | Test deleting a post as a staff member. | Post is deleted successfully by staff. | Pass |
| TFV | 13 | Test deleting a post as a non-owner and non-staff member. | Deleting post by non-owner is denied. | Pass |
| TFV | 14 | Test deleting a comment as the comment owner. | Comment is deleted successfully by owner. | Pass |
| TFV | 15 | Test deleting a comment as a staff member. | Comment is deleted successfully by staff. | Pass |
| TFV | 16 | Test deleting a comment as a non-owner and non-staff member. | Deleting comment by non-owner is denied. | Pass |
| TFV | 17 | Test upvoting a post. | PostVote is created for upvote. | Pass |
| TFV | 18 | Test downvoting a post. | PostVote is created for downvote. | Fail |
| TFV | 19 | Test voting on a post with an invalid form. | 400 error for invalid form. | Pass |
| TFV | 20 | Test upvoting a comment. | CommentVote is created for upvote. | Pass |
| TFV | 21 | Test downvoting a comment. | CommentVote is created for downvote. | Fail |
| TFV | 22 | Test voting on a comment with an invalid form. | 400 error for invalid form. | Pass |
| TFF | 1 | Test creating a post with valid data. | Post is created successfully with valid data. | Pass |
| TFF | 2 | Test creating a post with an empty title. | ValidationError is raised for empty title. | Pass |
| TFF | 3 | Test creating a post with empty text. | ValidationError is raised for empty text. | Pass |
| TFF | 4 | Test creating a post with a title exceeding the maximum length. | ValidationError is raised for title exceeding max length. | Pass |
| TFF | 5 | Test creating a post with text exceeding the maximum length. | ValidationError is raised for text exceeding max length. | Pass |
| TFF | 6 | Test creating a comment with valid data. | Comment is created successfully with valid data. | Pass |
| TFF | 7 | Test creating a comment with an empty comment field. | ValidationError is raised for empty comment field. | Pass |
| TFF | 8 | Test creating a comment with text exceeding the maximum length. | ValidationError is raised for text exceeding max length. | Pass |
| TCM | 2 | Test creating a session with a valid user. | Session is created successfully with a valid user. | Pass |
| TCM | 3 | Test creating a session without specifying a user. | IntegrityError is raised for missing user. | Pass |
| TCM | 4 | Test the string representation of a session. | String representation is correct for a session. | Pass |
| TCM | 5 | Test creating a message with valid data. | Message is created successfully with valid data. | Pass |
| TCM | 6 | Test creating a message without specifying a session. | IntegrityError is raised for missing session. | Pass |
| TCM | 7 | Test creating a message with empty text. | ValidationError is raised for empty text. | Pass |
| TCM | 8 | Test creating a message with text exceeding the maximum length. | ValidationError is raised for text exceeding max length. | Fail |
| TCM | 9 | Test creating a message with an invalid role. | ValidationError is raised for invalid role. | Pass |
| TCM | 10 | Test creating messages with different roles. | Messages are created with user, bot, and system roles. | Pass |
| TCM | 11 | Test retrieving messages ordered by creation date. | Messages are retrieved in the order they were created. | Pass |
| TCM | 12 | Test that deleting a session cascades and deletes its messages. | Messages are deleted when session is deleted. | Pass |
| TCM | 13 | Test the constraints and metadata of the Session model. | Constraints and metadata are correct for the Session model. | Pass |
| TCM | 14 | Test the constraints and metadata of the Message model. | Constraints and metadata are correct for the Message model. | Pass |
| TCM | 15 | Test creating multiple sessions for the same user. | Multiple sessions are created successfully for the same user. | Pass |
| TCM | 16 | Test creating multiple messages in a single session. | Multiple messages are created successfully in a session. | Pass |
| TCM | 17 | Test creating a message that includes emojis. | Message is created with emojis. | Pass |
| TCM | 18 | Test updating the text of an existing message. | Message text is updated successfully. | Pass |
| TCM | 19 | Test creating a message with text at the maximum length boundary. | Message is created with text at max length. | Pass |
| TCM | 20 | Test creating and retrieving a session by its creation date. | Session is created and retrieved correctly. | Pass |
| TCM | 21 | Test the string representation of a session with a long username. | String representation is correct with long username. | Pass |
| TEH | 1 | Test the 400 error handler. | 400 error handler works correctly. | Pass |
| TEH | 2 | Test the 403 error handler. | 403 error handler works correctly. | Pass |
| TEH | 3 | Test the 404 error handler. | 404 error handler works correctly. | Pass |
| TEH | 4 | Test the 500 error handler. | 500 error handler works correctly. | Pass |
| TEH | 5 | Test the 503 error handler. | 503 error handler works correctly. | Pass |
| TCV | 2 | Test accessing the chatbot home page. | Chatbot home page is accessible. | Pass |
| TCV | 3 | Test accessing the chatbot home page as an authenticated user. | Authenticated user is redirected correctly. | Pass |
| TCV | 4 | Test accessing a chatbot session. | Chatbot session is accessible. | Pass |
| TCV | 5 | Test accessing a non-existent chatbot session. | 404 error for non-existent session. | Pass |
| TCV | 6 | Test accessing another user's chatbot session. | Access to another user's session is denied. | Pass |
| TCV | 7 | Test processing a chat message. | Chat message is processed and response received. | Pass |
| TCV | 8 | Test processing a chat message when not authenticated. | Chat message is processed and response received. | Pass |
| TCV | 9 | Test processing a chat message with an invalid request method. | 400 error for invalid request method. | Pass |
| TCV | 10 | Test creating a new session. | New session is created and redirected. | Pass |