Testing Report

Team Cautions Spoon

In our project we have written automatic tests for models, forms, and views. These can be found in the 'tests' folder within the project, divided into the sub-categories.

Our approach to testing has been that whenever a model, form, or view was created, the tests would be made immediately after, aiming to cover as many cases as we could think of with the tests generally looking at whether the field is allowed to be blank or null and the size of the field, testing for the exact size and the edge case. Where improvements to code have been made later, tests have been updated and the code coverage has been examined to see where any tests or specific test cases have been missed.

As the project is made with Django it uses the unit testing framework through the unittest module.

Example of common test:

e.g The Club Model

test_valid_club

test_name_cannot_be_blank
test_name_can_be_64_characters_long
test_name_cannot_be_over_64_characters_long
test_name_must_be_unique
test_name_may_contain_non_alphanumericals
test_name_may_contain_numbers

test_description_may_contain_2048_characters
test_description_must_not_contain_more_than_2048_characters
test_description_must_not_be_blank

test_theme_must_not_be_blank

test_city_must_not_be_blank

test_maximum_members_must_not_be_less_than_2
test_maximum_members_can_be_2_members
test_maximum_members_can_be_64_members
test_maximum_members_must_not_be_more_than_64

test_club_must_have_leader
test_leadership_of_club_can_be_granted_to_another_user
test_member_can_be_added_and_removed_from_club

test_club_returns_string_of_its_name

We have been able to achieve 85% code coverage. A html code coverage report can be viewed in the ‘htmlcov’ folder where an index.html file can be found.

Name	Stmts	Miss	Cover
clubs/N_based_RecSys_Algorithm/N_based_MSD_Item.py	40	1	98%
clubs/admin.py	22	0	100%
clubs/apps.py	4	0	100%
clubs/enums.py	40	2	95%
clubs/factories/moment_factory.py	29	0	100%
clubs/factories/notification_factory.py	37	0	100%
clubs/forms.py	134	4	97%
clubs/helpers.py	65	3	95%
clubs/models.py	241	44	82%
clubs/views/account_views.py	95	43	55%
clubs/views/authentication_views.py	28	2	93%
clubs/views/book_views.py	130	25	81%
clubs/views/club_forum_views.py	27	0	100%
clubs/views/club_views.py	178	50	72%
clubs/views/dashboard_views.py	53	13	75%
clubs/views/meeting_views.py	118	24	80%
clubs/views/mixins.py	14	1	93%
clubs/views/moment_views.py	22	3	86%
clubs/views/notification_views.py	55	4	93%
clubs/views/post_views.py	27	0	100%
clubs/views/static_views.py	5	1	80%
clubs/views/user_views.py	139	4	97%
clubs/zoom_api_url_generator_helper.py	23	0	100%
system/urls.py	5	0	100%
TOTAL	1531	224	85%

To run tests in terminal run:

‘python3 manage.py runserver’

To generate a code coverage report in terminal run:

‘coverage run manage.py test’

‘coverage report’

To generate a html code coverage report in terminal run:

‘coverage run manage.py test’

‘coverage html’

‘firefox htmlcov/index.html’

Manual Tests

Upload books Manual Test:

When viewing the book list as a superuser there is a button ‘upload books’ which will redirect you to a page with a file input box to submit a csv file to populate the book database. The following tests were conducted as a superuser with an otherwise empty database.

Testing Valid files:

1. Input: ‘book_test_set_with_category.csv’
   A csv file containing data of the correct format including category, summary and language data:


```
"ISBN";"Book-Title";"Book-Author";"Year-Of-Publication";"Publisher";"Image-URL-S";"Image-URL-M";"Image-URL-L"
"0195153448";"Classical Mythology";"Mark P. O. Morford";"2002";"Oxford University Press";"http://images.amazon.com/images/P/0195153448.01.THUMBZZZ.jpg";"http://images.amazon.com/images/P/0195153448.01.MZZZZZZZ.jpg";"http://images.amazon.com/images/P/0195153448.01.LZZZZZZZ.jpg"
"0002005018";"Clara Callan";"Richard Bruce Wright";"2001";"HarperFlamingo Canada";"http://images.amazon.com/images/P/0002005018.01.THUMBZZZ.jpg";"http://images.amazon.com/images/P/0002005018.01.MZZZZZZZ.jpg";"http://images.amazon.com/images/P/0002005018.01.LZZZZZZZ.jpg"
```


2. Response:
   The data was inputted correctly into the database and displayed within the book list.

3. Input: ‘book_test_set_without_category.csv’
   A csv file containing data of the correct format not including category, summary and language data:

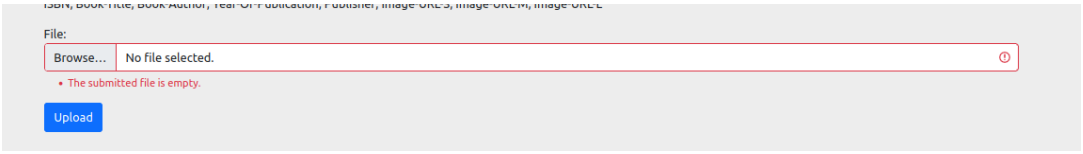

```
"ISBN";"Book-Title";"Book-Author";"Year-Of-Publication";"Publisher";"Image-URL-S";"Image-URL-M";"Image-URL-L";"Category";"Restricted-Category";"Summary";"Language"
"0195153448";"Classical Mythology";"Mark P. O. Morford";"2002";"Oxford University Press";"http://images.amazon.com/images/P/0195153448.01.THUMBZZZ.jpg";"http://images.amazon.com/images/P/0195153448.01.MZZZZZZZ.jpg";"http://images.amazon.com/images/P/0195153448.01.LZZZZZZZ.jpg";"['Social Science']";"['Social Science']";"Provides an introduction to classical myths placing the addressed
topics within their historical context, discussion of archaeological
evidence as support for mythical events, and how these themes have
been portrayed in literature, art, ...";"en"
"0002005018";"Clara Callan";"Richard Bruce Wright";"2001";"HarperFlamingo Canada";"http://images.amazon.com/images/P/0002005018.01.THUMBZZZ.jpg";"http://images.amazon.com/images/P/0002005018.01.MZZZZZZZ.jpg";"http://images.amazon.com/images/P/0002005018.01.LZZZZZZZ.jpg";"['Actresses']";"['Miscellaneous 1']";"In a small town in Canada, Clara Callan reluctantly takes leave of her
sister, Nora, who is bound for New York.";"en"
```


4. Response:
   The data was correctly inputted into the database with the category, summary and language fields left blank and books displayed in the book list.

Testing Invalid files:

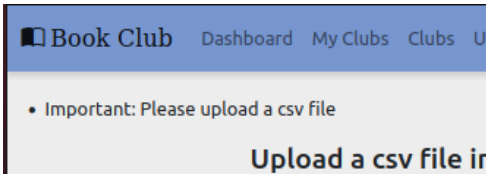
1. Input: ‘empty_file.csv’
   An empty CSV file.

2. Response:
   No changes to the database were made and an error message was delivered to the user.



3. Input: ‘text_file.txt’
   A text file.

4. Response:
   This resulted in an error message instructing the user to upload a csv file and no changes to the database.



5. Input: ‘book_test_set_wrong_format.csv’
   A csv file containing data in the wrong format (fewer columns than required)

6. Response:
   No changes were made to the database, and a message was given to the user to inform them that the books were not added to the database