Software Engineering CSC648/848 Spring 2019

~ Project Pegasus ~

Team Number 104

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Milestone 4

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Revision Number	**Date**	**Notes**
1	May 7th, 2019	Original submission
2		
3		

<u>Product Summary</u>

Pegasus is a unique housing website centered on fostering a student community. Students who are registered on the Pegasus website will be able to not only find a great place to live, but also interact with other Pegasus users in their neighborhoods. Students can use the site to find apartments and roommates, learn about neighborhoods, hear about local events, and help each other with moving and other services. We believe that the Pegasus website will allow students who live off campus to form and maintain connections with other students.

<u>Committed Functions</u>

Post Listings. Landlords can post listings available for rent that include information about a residence, including price, size, type of residence, pet policy, current occupants, amenities, and photos. The site administrator will approve or reject each listing before it can be posted.
Search and Filter. Student users will be able to search listings by city, and filter the results based on size and type of residence, price range, amenities, utilities, current number of tenants, and accessibility.
Registration. Students with an SFSU email address will be able to register, create an account and profile, browse listings, contact landlords and other registered students, and access and post to the student neighbor network. Landlords will be able to register, create an account and profile, post listings, manage listings, post open house dates/times, and respond to student inquiries.
Student Neighbor Network. Registered students will be able to access a forum for interacting with other registered students. The forum will be organized by neighborhood, and will allow students to post general neighborhood information, neighborhood events and services, items for sale, etc. Registered students may create posts, read posts, and reply to posts. Posts will be moderated for content by the administrator.
Administrative Tasks. The website admin will utilize a dashboard to keep track of approved listings and listings that need approval. The admin will also see recent posts to the network that have been flagged for inappropriate content, with the option to remove the posting. The dashboard will contain an activity log that displays all recent admin activity.
Messaging. Registered students will contact landlords or other registered students through the website, without revealing their email addresses.

URL: http://ec2-18-224-150-8.us-east-2.compute.amazonaws.com/web/demo

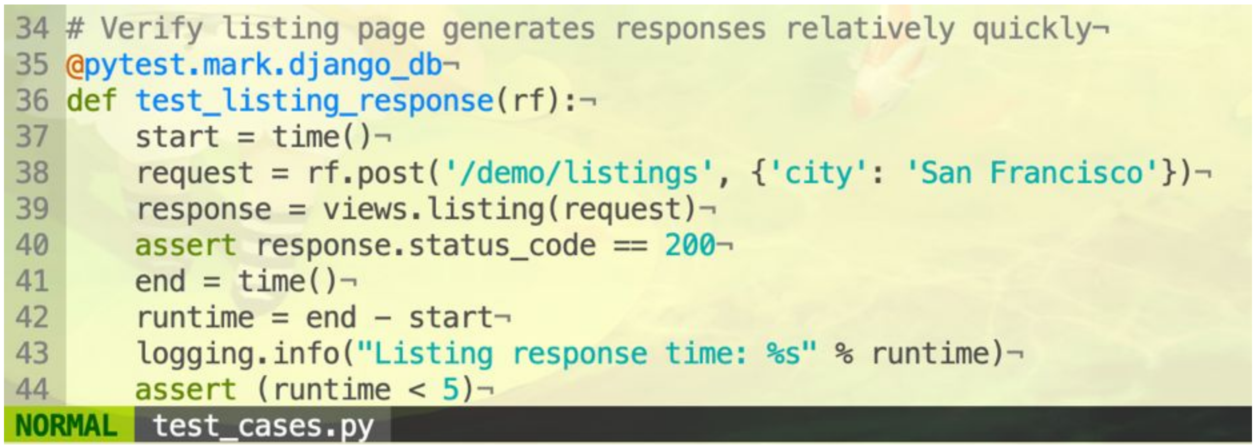
<u>QA Test Plan</u>

Unit Test

While there is quite a long list of functions and features that should be tested via unit tests, for the purposes of this document, we have selected two to present—searching/filtering for listings, and user registration. For searching and filtering posts, we want to verify two major points. One is accuracy; the filters we apply must result in correct output. The other is performance. Searching for all apartments in San Francisco should not take any longer than a few seconds to execute.

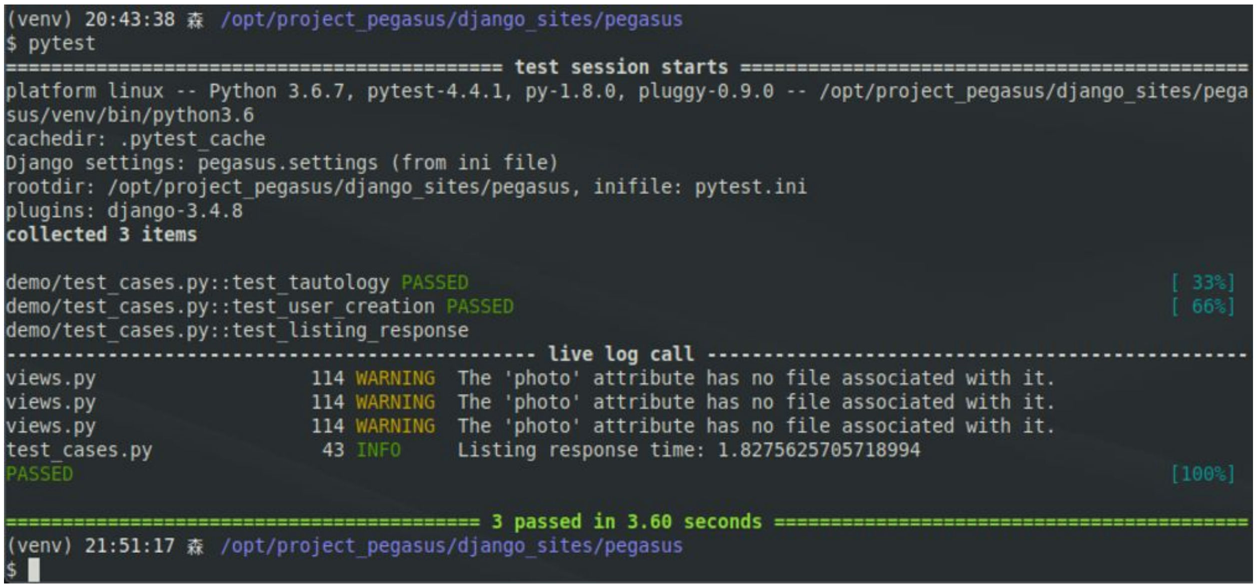
In terms of hardware setup, not much is required. A Linux machine with our code repository loaded into it is all that is required. This can be a physical or virtual machine. In terms of software, we require that the system support Python3.6. It need not have Python 3.6 installed—only that it *supports* it being installed, i.e. any system-level libraries like GLIBC need to be pre-configured. In most out-of-the-box Linux OS installations, this is pre-configured.

For our testing framework, we opted to use py.test, as our software stack is Python-based. An example test case for search is given below:



```
# Verify listing page generates responses relatively quickly¬
@pytest.mark.django_db¬
def test_listing_response(rf):¬
    start = time()¬
    request = rf.post('/demo/listings', {'city': 'San Francisco'})¬
    response = views.listing(request)¬
    assert response.status_code == 200¬
    end = time()¬
    runtime = end - start¬
    logging.info("Listing response time: %s" % runtime)¬
    assert (runtime < 5)¬
NORMAL  test_cases.py
```

This particular test case is for testing responsiveness for the listing page: it measures the runtime between the server receiving the request and generating the results. This process can be complex—it requires contacting the database for the listings, and then passing those addresses in to the Google Maps API to generate the latitude and longitude for those values to be able to populate the map properly. An example of this test in action is appended below:



```
(venv) 20:43:38 森 /opt/project_pegasus/django_sites/pegasus
$ pytest
=========================================== test session starts ============================================
platform linux -- Python 3.6.7, pytest-4.4.1, py-1.8.0, pluggy-0.9.0 -- /opt/project_pegasus/django_sites/pega
sus/venv/bin/python3.6
cachedir: .pytest_cache
Django settings: pegasus.settings (from ini file)
rootdir: /opt/project_pegasus/django_sites/pegasus, inifile: pytest.ini
plugins: django-3.4.8
collected 3 items

demo/test_cases.py::test_tautology PASSED                                                            [ 33%]
demo/test_cases.py::test_user_creation PASSED                                                        [ 66%]
demo/test_cases.py::test_listing_response
---------------------------------------------- live log call -----------------------------------------------
views.py                   114 WARNING  The 'photo' attribute has no file associated with it.
views.py                   114 WARNING  The 'photo' attribute has no file associated with it.
views.py                   114 WARNING  The 'photo' attribute has no file associated with it.
test_cases.py               43 INFO     Listing response time: 1.8275625705718994
PASSED                                                                                               [100%]

========================================= 3 passed in 3.60 seconds =========================================
(venv) 21:51:17 森 /opt/project_pegasus/django_sites/pegasus
$ 
```

Integration Test

Our integration testing covers user stories S1, L1, A1 (one example of a student, one example of a landlord, and the site administrator). The testing will be completed on Firefox and Chrome browsers. Testing will be done using the following URL:

http://ec2-18-224-150-8.us-east-2.compute.amazonaws.com/web/demo

HW and SW setup

1. Server Host: AWS
2. Operating System: Linux Ubuntu
3. Database: PostgresSQL
4. Web Server: Apache
5. Server-side Language: Python
6. Framework: Django
7. IDE: PyCharm, VSCode
8. Supported Browsers: Chrome, Firefox
9. Additional technologies:
    a. Google Maps API

Results of our latest round of integration testing demonstrate what work still needs to be done. Examples of the integration testing are shown below. Additional tests can be found in the appendix at the end of this document.

Integration Test 1 - User Story S1 - Student - Firefox	
Test Case ID: S_01	Test Case Description: Create Student Account and log in
Prerequisites:	None

Date tested	Scenario	Expected Results	Pass / Fail
05/06/2019	Access Pegasus Home	Homepage with search field shown	Pass
05/06/2019	Click on “Sign up”	Redirect to sign up page	Pass
05/06/2019	Enter Information and click submit	See account verification page, email sent to account	Pass
05/06/2019	Check email and click on link	Confirmation of registration	Pass
05/06/2019	Return to homepage and sign in	Signs into account, go to search listings page	Pass

Integration Test 1 - User Story S1 - Student - Chrome			
Test Case ID: S_01	Test Case Description: Create Student Account and log in		
Prerequisites:	None		
Date tested	Scenario	Expected Results	Pass / Fail
5/07/2019	Access Pegasus Home	Homepage with search field shown	Pass
5/07/2019	Click on “Sign up”	Redirect to sign up page	Pass
5/07/2019	Enter Information and click submit	See account verification page, email sent to account	Pass
5/07/2019	Check email and click on link	Confirmation of registration	Pass
5/07/2019	Return to homepage and sign in	Signs into account, go to search listings page	Pass

Integration Test 2 - User Story S1 - Student - Firefox	
Test Case ID: S_02	Test Case Description: Search listings as a student

Prerequisites:	Student has account and is logged in		
Date tested	Scenario	Expected Results	Pass / Fail
05/06/2019	Access Pegasus Home	Homepage with search field shown	Pass
05/06/2019	Enter city in search field	Redirect to listings page with appropriate map and pins	Pass
05/06/2019	Filter by number of bedrooms	Only correct results displayed	Fail - filtering works, but all listings have the same number of bedrooms except for 1 (not properly connected to database)
05/06/2019	Filter by price range	Only correct results displayed	Fail - Searched price 3300, resulted in FieldError
05/06/2019	Filter by home type	Only correct results displayed	Pass
05/06/2019	Select a listing	Redirect to listing page	Pass
05/06/2019	View map	Map centers on residence address	Pass
05/06/2019	Find directions on map	Correctly calculates directions	Fail - Not implemented
05/06/2019	View listing details	All listing details present	Pass
05/06/2019	View photos slider	Correct photos display	Fail - not yet connected to database

Integration Test 2 - User Story S1 - Student - Chrome			
Test Case ID: S_02	Test Case Description: Search listings as a student		
Prerequisites:	Student has account and is logged in		
Date tested	Scenario	Expected Results	

5/07/2019	Access Pegasus Home	Homepage with search field shown	Pass
5/07/2019	Enter city in search field	Redirect to listings page with appropriate map and pins	Pass
5/07/2019	Filter by number of bedrooms	Only correct results displayed	Fail-Errors
5/07/2019	Filter by price range	Only correct results displayed	Pass
	Filter by distance		Not implemented
5/07/2019	Filter by home type	Only correct results displayed	Not implemented
5/07/2019	Select a listing	Redirect to listing page	Not implemented
5/07/2019	View map	Map centers on residence address	Pass
5/07/2019	Find directions on map	Correctly calculates directions	Fail - Not implemented
5/07/2019	View listing details	All listing details present	Not implemented
5/07/2019	View photos slider	Correct photos display	Fail - not yet connected to database

Integration Test 5 - User Story S1 - Student - Firefox			
Test Case ID: S_05	Test Case Description: Student interaction with student neighbor network		
Prerequisites:	Assumes successful sign-in and account creation		
Date tested	Scenario	Expected Results	Pass / Fail
05/06/2019	Student clicks on forum button	Redirect to forum main page, organized by neighborhood	Pass
05/06/2019	Student selects neighborhood	Redirect to forum for that neighborhood	Pass

05/06/2019	View postings	Relevant subcategories and postings should be displayed for that neighborhood	Pass
05/06/2019	Post something	Student creates a posting, including text of posting, pictures, tags (for example events, security, services, for sale)	Pass - didn't test pictures
05/06/2019	Comment on postings	Written comments should show up in the posting thread	Pass
05/06/2019	Click on usernames to view other student profiles	Names of the posters are clickable to that user's profile	Pass
05/06/2019	Direct messages to other registered students	Click on send message and popup (or chat window?) opens up	Fail - direct messages only possible if receiver user name known

Integration Test 5 - User Story S1 - Student - Chrome			
Test Case ID: S_05	Test Case Description: Student interaction with student neighbor network		
Prerequisites:	Assumes successful sign-in and account creation		
Date tested	Scenario	Expected Results	Pass / Fail
5/07/2019	Student clicks on forum button	Redirect to forum main page, organized by neighborhood	Fail-Errors
5/07/2019	Student selects neighborhood	Redirect to forum for that neighborhood	Not implements
5/07/2019	View postings	Relevant subcategories and postings should be displayed for that neighborhood	Pass

5/07/2019	Post something	Student creates a posting, including text of posting, pictures, tags (for example events, security, services, for sale)	Fail-Errors
5/07/2019	Comment on postings	Written comments should show up in the posting thread	Not implements
5/07/2019	Click on usernames to view other student profiles	Names of the posters are clickable to that user’s profile	Pass
5/07/2019	Direct messages to other registered students	Click on send message and popup (or chat window?) opens up	Fail - direct messages possible if receiver user name known

Integration Test 6 - User Story L1 - Landlord - Firefox			
Test Case ID: L_01	Test Case Description: Create Landlord Account and log in		
Prerequisites:			
Date tested	Scenario	Expected Results	Pass / Fail
05/07/2019	Access Pegasus Home	Homepage with search field shown	Pass
05/07/2019	Click on “Sign up”	Redirect to sign up page	Pass
05/07/2019	Enter Information and click submit	See account verification page, email sent to account	Pass
05/07/2019	Check email and click on link	Confirmation of registration	Pass - Note that if a username or email already exists, it doesn’t inform you until you follow the URL
05/07/2019	Return to homepage and sign in	Signs into account, go to search listings page	Pass

Integration Test 6 - User Story L1 - Landlord - Chrome			
Test Case ID: L_01	Test Case Description: Create Landlord Account and log in		
Prerequisites:			
Date tested	Scenario	Expected Results	Pass / Fail
5/07/2019	Access Pegasus Home	Homepage with search field shown	Pass
5/07/2019	Click on “Sign up”	Redirect to sign up page	Pass
5/07/2019	Enter Information and click submit	See account verification page, email sent to account	Fail-cannot submit form
5/07/2019	Check email and click on link	Confirmation of registration	Fail-above error
05/07/2019	Return to homepage and sign in	Signs into account, go to search listings page	Fail-above error

Admin integration testing is still in progress. We experienced a last minute permissions issue with our admin registration that prevented us from completing this test in time for documentation submission.

Integration Test 9 - User Story A1 - Admin - Firefox			
Test Case ID: A_01	Test Case Description: Admin login and dashboard		
Prerequisites:	Assumes admin account already set up		
Date tested	Scenario	Expected Results	Pass / Fail
	Access home page and login as admin	Redirects to admin dashboard	
	View listings that are pending approval	All listings pending approval should be displayed	
	Accept / reject listing	Message should be sent to landlord. If approved,	

		listing should be ready and searchable	
	Click on flagged neighbor network content tab	View all postings that have been flagged by users	
	Click on button to remove content	Post should be removed and deleted from the network	
	Click on admin log tab	All recent admin activity is displayed (approved/rejected listings, removed content)	

Beta Testing

Test Objectives

As of the submission of this document, we are not prepared for a beta launch. Our application failed several of the latest integration tests for our core functionality. The plan is to spend until Friday of this week to fix the issues with the site before releasing it for beta testing. At that time, the site will be distributed to friends and family who could be potential users, either as landlords or as students. The website will include all of the basic functionality that we have committed to in this document. Feedback will be collected via user Google survey (https://forms.gle/tZkhoGuj21FBPtrd9). Product behavior will be collected by an automatic logging feature.

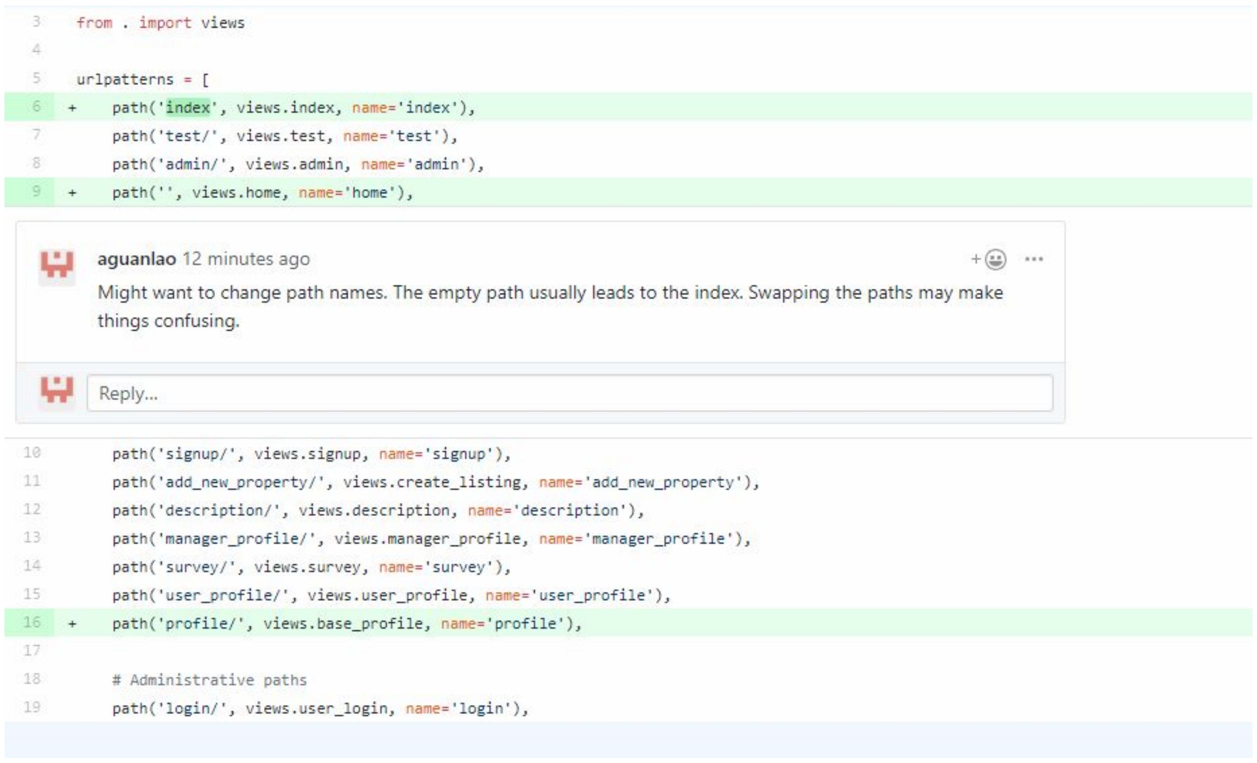
Code Review

A. Coding style. For Python, we enforce PEP8 coding style. All team members are using Visual Studio Code or Pycharm with a PEP8 plugin. Warning messages are displayed in the IDE any time code does not conform to our agreed-upon style. These styles include:
   - Using 4 spaces for indentation, not tabs
   - PEP8 style for function names, variable names, and class names
   - PEP8 style for whitespace in between functions

   For JavaScript and HTML, we enforce the JavaScript style guide and the HTML5 style guide found on w3 schools (https://www.w3schools.com/js/js_conventions.asp , https://www.w3schools.com/htmL/html5_syntax.asp). Coding style is enforced using the Prettier formatter in Visual Studio Code IDE, which automatically indents our code and makes it easier to read.

B. Example. We have been using GitHub pull requests, along with Slack, to discuss changes that need to be made before merging into dev branch. Below are some examples of branches that were requested to merge, comments on the request, and subsequent incorporation of the changes.

Initial Commit with Comments



```
from . import views

urlpatterns = [
+    path('index', views.index, name='index'),
     path('test/', views.test, name='test'),
     path('admin/', views.admin, name='admin'),
+    path('', views.home, name='home'),
```

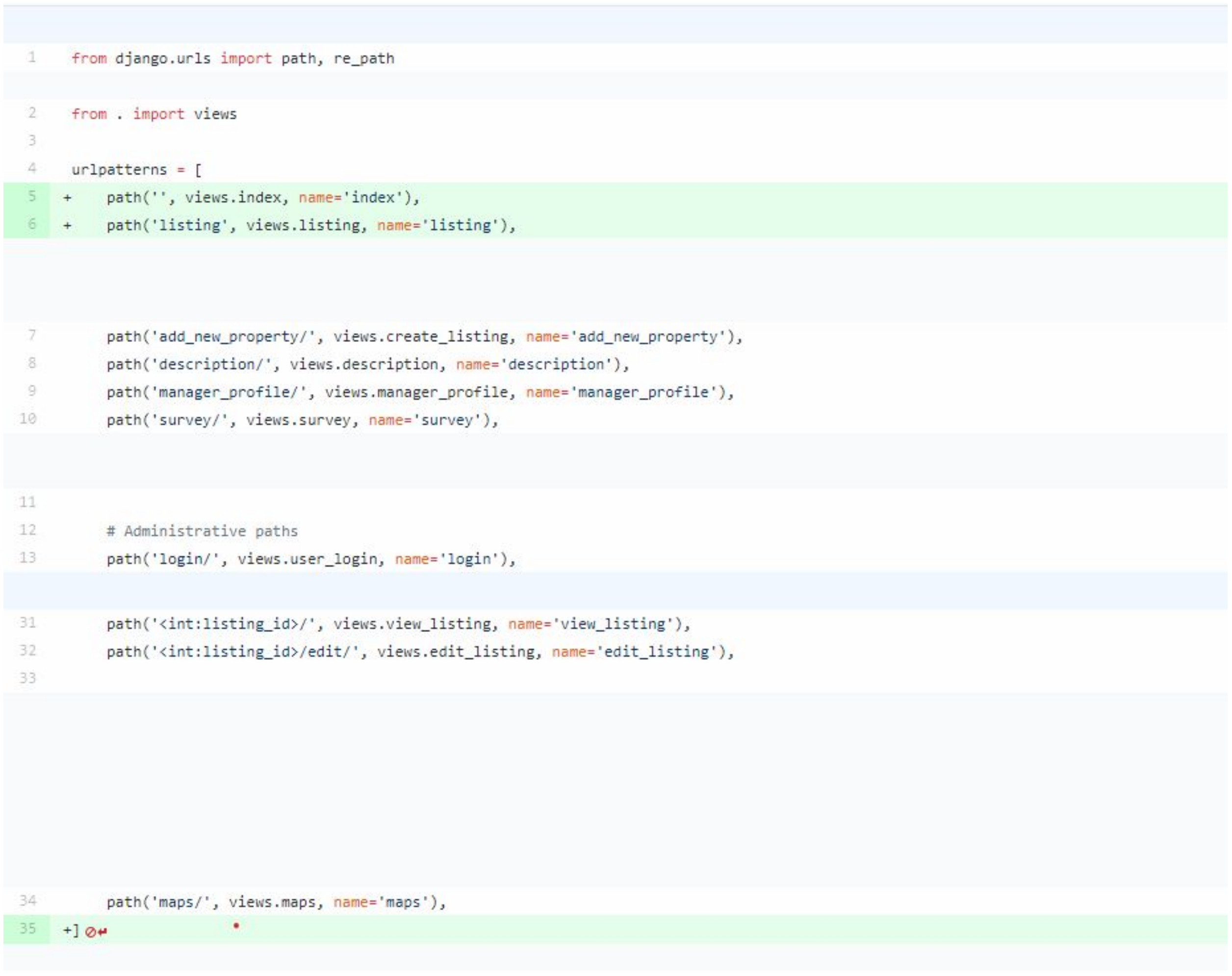
aguanlao 12 minutes ago

Might want to change path names. The empty path usually leads to the index. Swapping the paths may make things confusing.

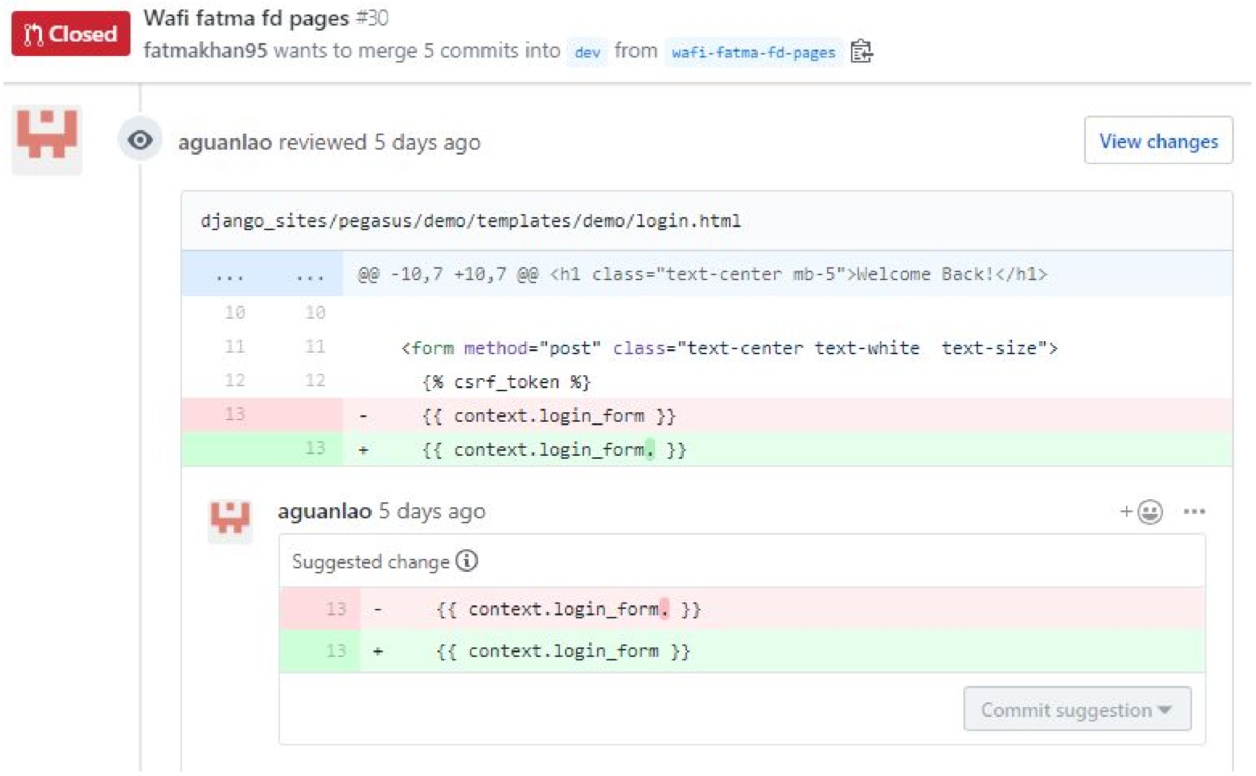
Reply...

```
     path('signup/', views.signup, name='signup'),
     path('add_new_property/', views.create_listing, name='add_new_property'),
     path('description/', views.description, name='description'),
     path('manager_profile/', views.manager_profile, name='manager_profile'),
     path('survey/', views.survey, name='survey'),
     path('user_profile/', views.user_profile, name='user_profile'),
+    path('profile/', views.base_profile, name='profile'),

     # Administrative paths
     path('login/', views.user_login, name='login'),
```

Commit with Changes Applied



```
from django.urls import path, re_path

from . import views

urlpatterns = [
+    path('', views.index, name='index'),
+    path('listing', views.listing, name='listing'),

    path('add_new_property/', views.create_listing, name='add_new_property'),
    path('description/', views.description, name='description'),
    path('manager_profile/', views.manager_profile, name='manager_profile'),
    path('survey/', views.survey, name='survey'),


    # Administrative paths
    path('login/', views.user_login, name='login'),

    path('<int:listing_id>/', views.view_listing, name='view_listing'),
    path('<int:listing_id>/edit/', views.edit_listing, name='edit_listing'),

    path('maps/', views.maps, name='maps'),
+]
```



Wafi fatma fd pages #30
fatmakhan95 wants to merge 5 commits into dev from wafi-fatma-fd-pages

aguanlao reviewed 5 days ago

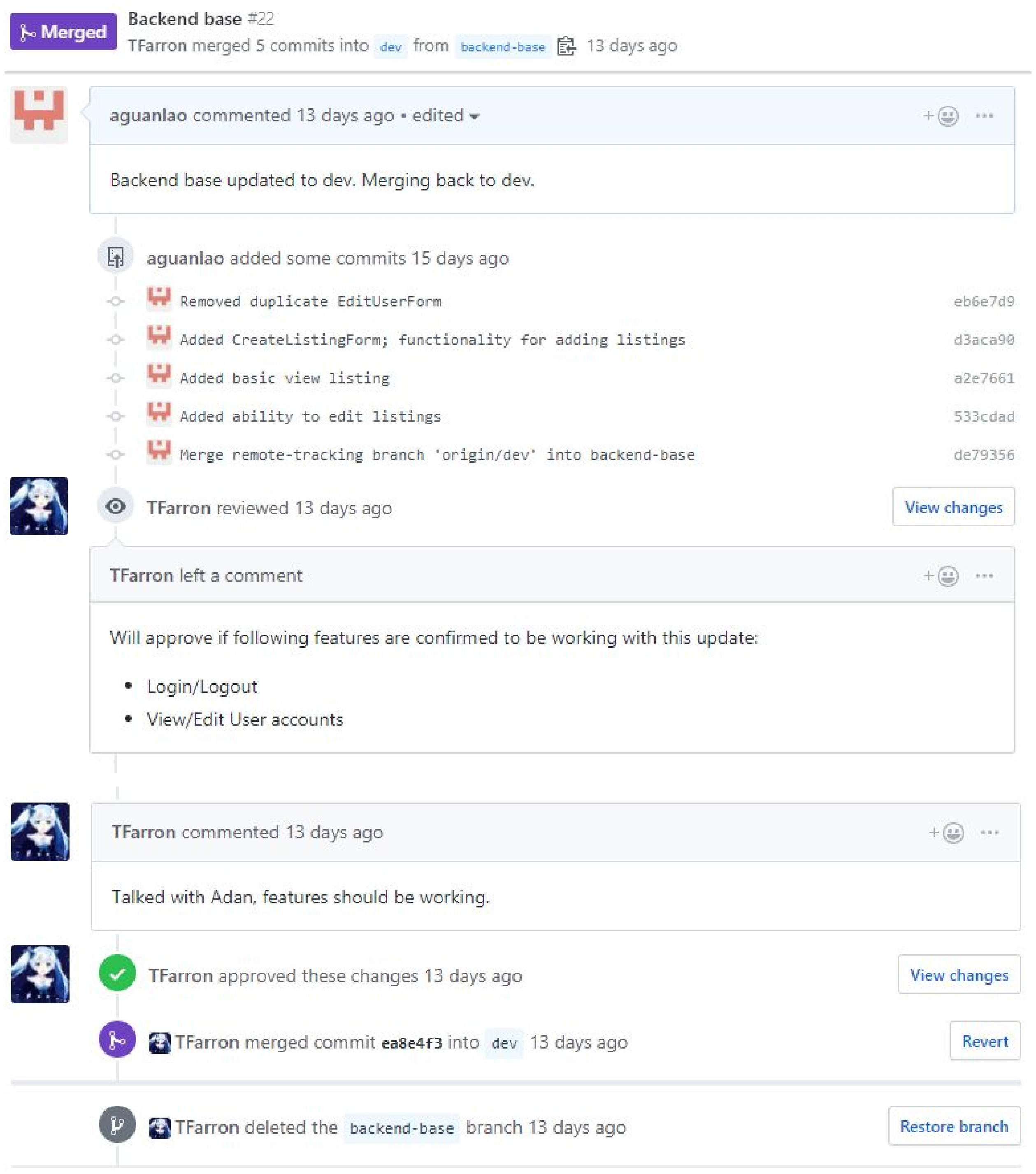
django_sites/pegasus/demo/templates/demo/login.html

```
@@ -10,7 +10,7 @@ <h1 class="text-center mb-5">Welcome Back!</h1>

    <form method="post" class="text-center text-white  text-size">
      {% csrf_token %}
-     {{ context.login_form }}
+     {{ context.login_form. }}
```

aguanlao 5 days ago

Suggested change

```
-     {{ context.login_form. }}
+     {{ context.login_form }}
```


Merged **Backend base** #22

TFarron merged 5 commits into `dev` from `backend-base` 13 days ago

aguanlao commented 13 days ago • edited

Backend base updated to dev. Merging back to dev.

aguanlao added some commits 15 days ago

```
Removed duplicate EditUserForm                                    eb6e7d9
Added CreateListingForm; functionality for adding listings        d3aca90
Added basic view listing                                          a2e7661
Added ability to edit listings                                    533cdad
Merge remote-tracking branch 'origin/dev' into backend-base       de79356
```

TFarron reviewed 13 days ago — View changes

TFarron left a comment

Will approve if following features are confirmed to be working with this update:

- Login/Logout
- View/Edit User accounts

TFarron commented 13 days ago

Talked with Adan, features should be working.

TFarron approved these changes 13 days ago — View changes

TFarron merged commit **ea8e4f3** into `dev` 13 days ago — Revert

TFarron deleted the `backend-base` branch 13 days ago — Restore branch

Self-check: Adherence to Original Non-Functional Specifications

Specification	Status
Application shall be developed, tested, and deployed using tools specified in M0 and reviewed and approved by Nicholas Stepanov.	DONE
Application shall be optimized for standard desktop/laptop browsers and will render correctly on the two latest versions of two major browsers.	DONE
Data shall be stored in our chosen database on our deployment server.	DONE
Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.	ON TRACK
Application shall be easy to use and intuitive.	ON TRACK
No email clients shall be allowed.	DONE
Pay functionality shall not be implemented nor simulated.	DONE
Basic site security best practices shall be applied. Web traffic should travel over HTTPS. Users must log in to be able to post or apply to listings. Login credentials must be stored in an encrypted format (preferably SHA-512).	ISSUE - Amazon self signed certificate still a problem for HTTPS. May switch to HTTP.
Before posted live, all content (apartment listings and images) must be approved by site administrator.	DONE
Modern software engineering processes and practices shall be used as specified in the class, including collaborative and continuous software development.	DONE
The website shall prominently display the following exact text on all pages: “SFSU Software Engineering Project CSC 648-848, Spring 2019. For Demonstration Only.” at the top of the WWW page.	ON TRACK
The website shall be fast. Searching for and applying to listings should not take more than 3 seconds per event.	ON TRACK
The website must have high fault tolerance.	ON TRACK

The website will be scalable to allow expansion to additional universities.	ON TRACK
The software will be readable, expandable, and maintainable.	ON TRACK

APPENDIX

Below are integration tests currently with poor outcomes or not able to be completed.

Integration Test 3 - User Story S1 - Student - Firefox			
Test Case ID: S_03	Test Case Description: Save listing / contact landlord / sign up for open house		
Prerequisites:	Assumes accessing an individual listing's page		
Date tested	Scenario	Expected Results	Pass / Fail
05/06/2019	Click on save listing	Adds listing to student profile page saved listings	Fail - not implemented
05/06/2019	Click on Contact button	Redirect to messaging page (or popup?)	Fail - not implemented
05/06/2019	Message landlord	Write a message, and the message sends to landlord inbox	Fail - not implemented
05/06/2019	Sign up for open house (click on desired open house time)	Message is sent to landlord with student profile, the event shows up in student's calendar	Fail - not implemented

Integration Test 4 - User Story S1 - Student - Firefox			
Test Case ID: S_04	Test Case Description: Student interaction with own profile and settings		
Prerequisites:	Assumes successful sign-in and account creation		
Date tested	Scenario	Expected Results	Pass / Fail
05/06/2019	Click on View Profile	Student profile displays	Pass
05/06/2019	Click on saved listings	All saved listings that are still valid are displayed (and are clickable to each listing's page)	Fail - Not implemented

05/06/2019	Click on forum button	Redirect to student neighbor network forum	Pass
05/06/2019	View calendar	Calendar is populated with all open house times the student has signed up for	Fail - not implemented
05/06/2019	Edit profile	Should be able to edit profile and save	Fail - tried to edit the bio, and it gives the field already exists error
05/06/2019	View inbox	All private messages sent to the student should show up in the inbox	Pass

Integration Test 4 - User Story S1 - Student - Chrome			
Test Case ID: S_04	Test Case Description: Student interaction with own profile and settings		
Prerequisites:	Assumes successful sign-in and account creation		
Date tested	Scenario	Expected Results	Pass / Fail
5/07/2019	Click on View Profile	Student profile displays	Pass
5/07/2019	Click on saved listings	All saved listings that are still valid are displayed (and are clickable to each listing's page)	Fail - Not implemented
5/07/2019	Click on forum button	Redirect to student neighbor network forum	Fail-Not implemented
5/07/2019	View calendar	Calendar is populated with all open house times the student has signed up for	Fail - not implemented
5/07/2019	Edit profile	Should be able to edit profile and save	Pass
5/07/2019	View inbox	All private messages	Pass

		sent to the student should show up in the inbox	

Integration Test 7 - User Story L1 - Landlord - Firefox			
Test Case ID: L_02	Test Case Description: Post Listings / delete listings		
Prerequisites:	Assumes successful login		
Date tested	Scenario	Expected Results	Pass / Fail
05/07/2019	Access landlord profile	Redirect to landlord profile page	Fail - Redirected to student page
05/07/2019	Click on add listing	Page for adding a listing is displayed, and landlord can enter information and upload photos	Fail - Because of above
05/07/2019	Pending approval for listing	After submitting new listing, landlord receives message that the listing is pending review.	Fail - Because of above
05/07/2019	Getting approval for listing	After the listing is approved by admin, the landlord receives a message and the listing is displayed in the landlord profile	Fail - Because of above
05/07/2019	Creating open house dates and times - Landlord sets available showing times in “Calendar” tab	Clickable timeslot buttons are displayed on the listing.	Fail - Not implemented
05/07/2019	On each listing, click on remove listing	Listing status changes to invalid	Fail - Because of above

Integration Test 7 - User Story L1 - Landlord - Chrome			
Test Case ID: L_02	Test Case Description: Post Listings / delete listings		
Prerequisites:	Assumes successful login		
Date tested	Scenario	Expected Results	Pass / Fail
05/07/2019	Access landlord profile	Redirect to landlord profile page	Pass
05/07/2019	Click on add listing	Page for adding a listing is displayed, and landlord can enter information and upload photos	Not implemented
05/07/2019	Pending approval for listing	After submitting new listing, landlord receives message that the listing is pending review.	Not implemented
05/07/2019	Getting approval for listing	After the listing is approved by admin, the landlord receives a message and the listing is displayed in the landlord profile	Not implemented
05/07/2019	Creating open house dates and times - Landlord sets available showing times in “Calendar” tab	Clickable timeslot buttons are displayed on the listing.	Not implemented
05/07/2019	On each listing, click on remove listing	Listing status changes to invalid	Not implemented

This integration test will not be done until Landlord sign-up directs to Landlord profile

Integration Test 8 - User Story L1 - Landlord - Firefox/Chrome	
Test Case ID: L_03	Test Case Description: Interactions with students
Prerequisites:	Assumes successful login

Date tested	Scenario	Expected Results	Pass / Fail
	Access landlord inbox in profile	Messages from student users are displayed	
	On calendar (or listing?), click on “Attendees” for open house.	List of students who have signed up, with links to their profiles is displayed	
	Contact open house attendees through attendees mailing list	Message will be sent to only those students who have signed up for the open house	
	Cancel open house - click cancel button	Registered attendees will be notified via the messaging feature that the open house is canceled	