

IFT 598 Project Report for Deliverable 5

A Project Report presented to the instructors of IFT 598 Middleware Programming and Database Security

By GROUP 28

Hooman Mishaeil - Group 28

IFT 598 Session C, Summer 2021

hmishaei@asu.edu

Jeffrey Ashworth - Group 28

IFT 598 Session C, Summer 2021

jdashwo2@asu.edu

Introduction

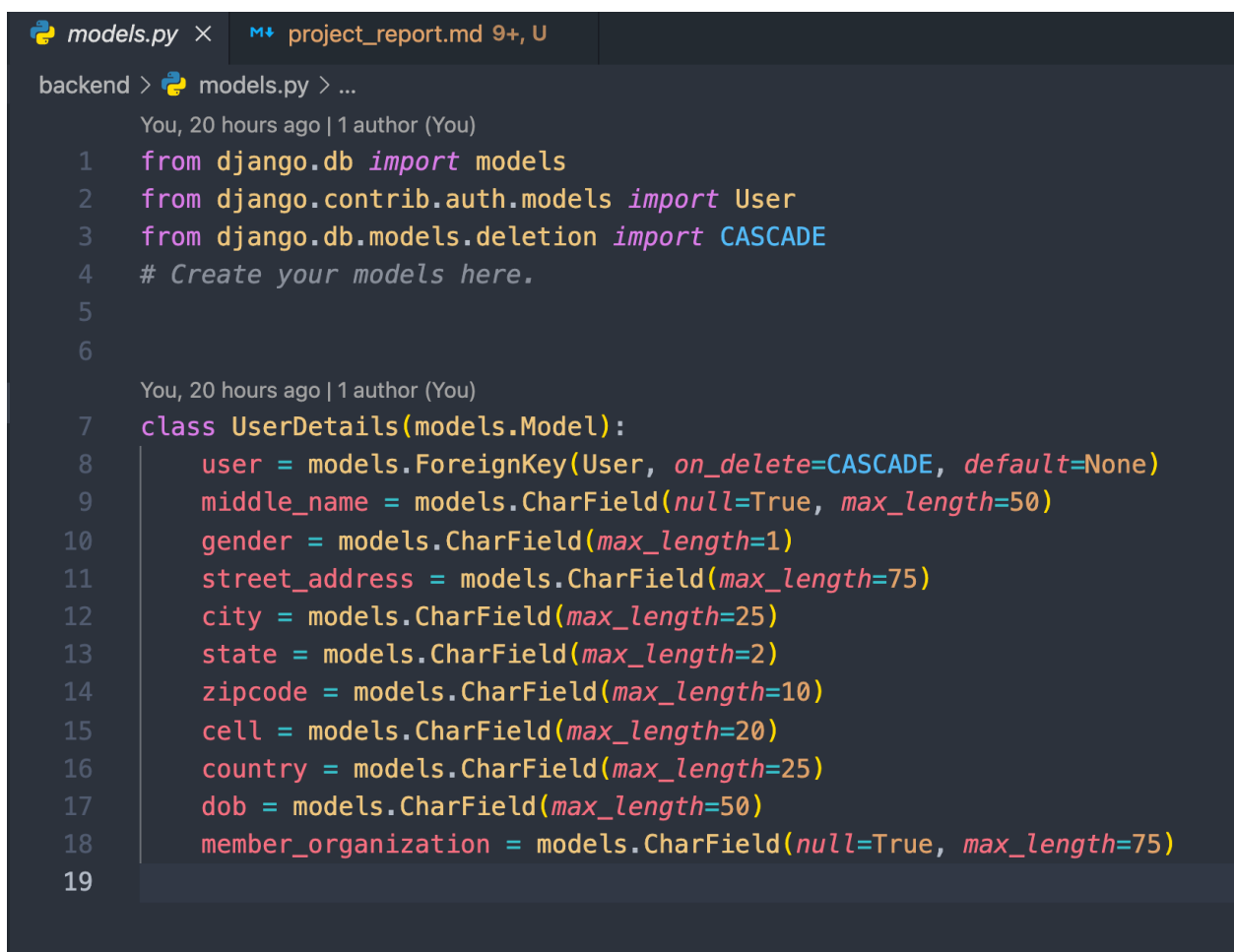
Group 28 continued the course long project by fulfilling the final deliverable requirements, adding Django models and authenticating users. While the requirements indicated creating an additional app called 'backend', the team decided to continue with the already established 'home' app and create the models, forms, templates and views there. The team used the built in Django authentication system to manage the implementation of passwords and permissions as well as utilizing authentication. While there are several approaches to extending the Django User model, the team chose to use an additional model for 'profile' information with a one to one relation with the Django User model. The team created a registration page to create a new user in the Django User model and initialize a profile by creating a new record in the 'UserDetails' model for that user. The team further demonstrated login acknowledgement on the home page by modifying the menus for authenticated users and used a dashboard to demonstrate the Read, Update, and Delete functions of CRUD. It should be noted that the Create functionality is demonstrated in the creation of the user and the profile

record for the corresponding user. The team maintained much of the design from the last deliverables and improved functionality and reduced code duplication by using Django specific features such as Django forms and signals.

Description

The following demonstrates the details of the project.

The UserDetails Model which is recording the user details information.

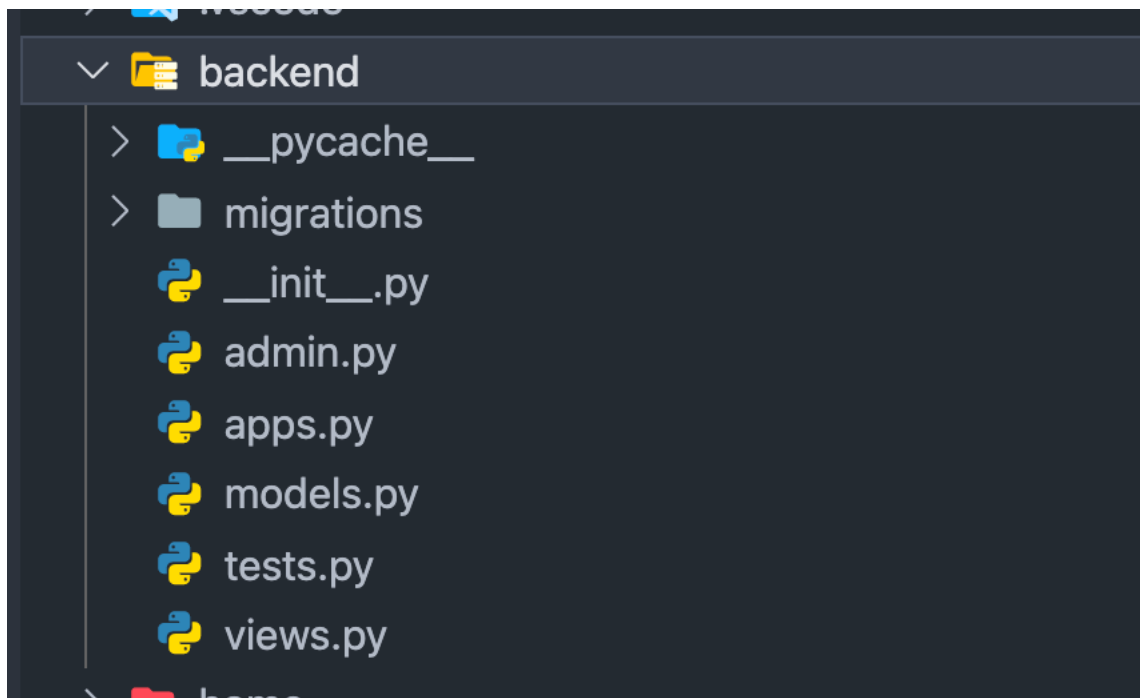


```
models.py ×  project_report.md 9+, U
backend > models.py > ...
You, 20 hours ago | 1 author (You)
1  from django.db import models
2  from django.contrib.auth.models import User
3  from django.db.models.deletion import CASCADE
4  # Create your models here.
5
6
You, 20 hours ago | 1 author (You)
7  class UserDetails(models.Model):
8      user = models.ForeignKey(User, on_delete=CASCADE, default=None)
9      middle_name = models.CharField(null=True, max_length=50)
10     gender = models.CharField(max_length=1)
11     street_address = models.CharField(max_length=75)
12     city = models.CharField(max_length=25)
13     state = models.CharField(max_length=2)
14     zipcode = models.CharField(max_length=10)
15     cell = models.CharField(max_length=20)
16     country = models.CharField(max_length=25)
17     dob = models.CharField(max_length=50)
18     member_organization = models.CharField(null=True, max_length=75)
19
```

Database setting which we are using SQLite to save the data.

```
80
81 DATABASES = {
82     'default': {
83         'ENGINE': 'django.db.backends.sqlite3',
84         'NAME': BASE_DIR / 'db.sqlite3',
85     }
86 }
87
```

Backend app to organize the database model and all the backend activities.



Join Us Form before submission

Join Us Form

Username: *

Email: *

Password: *

First name: *

Middle name:

Last name: *

Gender: *

Street address: *

City: *

State: *

Zipcode: *

Cell: *

Country: *

Dob: *



Member organization:

Already have an account?

Database entity after form submission

<div> <div>Table:</div> <div>auth_user</div> <div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> <div>Filter in any column</div> </div>											
	id	password	last_login	is_superuser	username	last_name	email	is_staff	is_active	date_joined	first_name
	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
1	6	pbkdf2_sha256\$260000\$IFMhSD3GYvrtaTRI8ihsOo\$VyQ...	2021-06-25 20:26:47.424582	0	john doe	Doe	john.doe@gmail.com	0	1	2021-06-25 20:26:47.288516	John


Table:

backend_userdetails

Filter in any column

	id	middle_name	gender	city	state	zipcode	cell	country	dob	member_organization	user_id	street_address
...	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	
1	5	Smith	M	Tempe	AZ	85281	12345678	United States	1980-01-01	Arizona State University	6	1150 East University Drive

Dashboard page after successful login

[Galleries](#) [About Us](#) [Contact Us](#) [DONATE](#)


[Search](#)

[Show My Account Details](#) [Update My Account](#) [Delete My Account](#) [Logout](#)

Successful Login!

Welcome to Dashboard

Result of reading the data from database



[Galleries](#) [About Us](#) [Contact Us](#) [DONATE](#)

[Search](#)

[Show My Account Details](#) [Update My Account](#) [Delete My Account](#) [Logout](#)

User Details

Username	johndoe
First name	John
Last name	Doe
Email	johndoe@gmail.com
Middle name	Smith
Gender	M
Street Address	1150 East University Drive
State	AZ
Zipcode	85281
Cell	12345678
Country	United States
DoB	1980-01-01
Member Organization	Arizona State University

Result of updating the user (the state, city and zip code are being updated.)

User updated successfully!

Show My Account Details

Update My Account

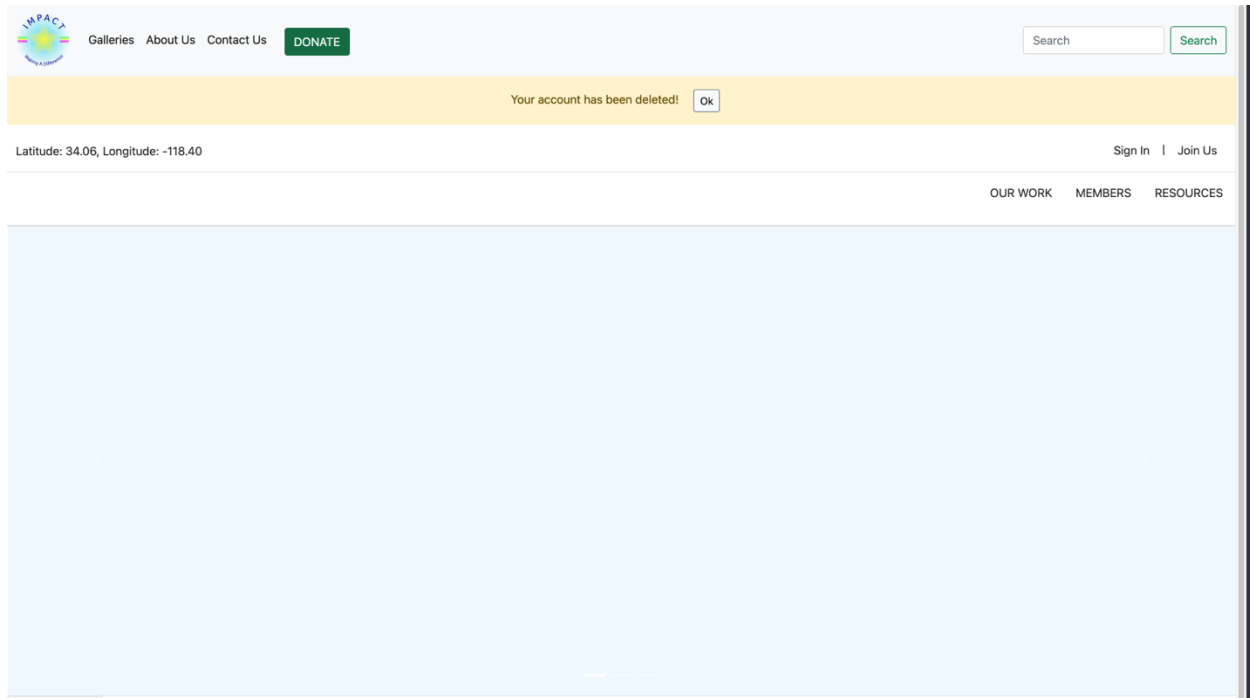
Delete My Account

Logout

User Details

Username	johndoe
First name	John
Last name	johndoe@gmail.com
Email	hmishaeil@gmail.com
Middle name	Doe
Gender	M
Street Address	1150 East University Drive
State	NY
City	New York
Zipcode	10001
Cell	12345678
Country	United States
DoB	1980-01-01
Member Organization	Arizona State University

Result of user being deleted (in that case, user will be logged out and the related entities will be removed from database)



User Manual

This user manual assumes the user already has a 3.8.x version of Python installed. Create a new virtual environment in a directory of your choice using virtualenv or venv. Your operating system commands and utilities may vary. For example using venv on Ubuntu, `python - venv "my_project"` will create scaffolding and install the packages required for the "my_project" virtual environment. Activate the environment in the directory created using `source bin/activate`. From here pip install Django. Unzip the provided .zip package into the directory. You will have root project directory called impact and two subdirectories called impact (the project directory) and home (the app directory.). In a terminal, navigate to the impact/impact directory. In this directory execute `"python manage.py runserver"`. Django will use the provided project configurations to properly run the project. This will start the Django development server listening on port 8000. You can then open a browser and enter a URL of 127.0.0.1:8000 to access the IMPACT Django web application home page. Also please make sure the 'crispy_forms' package is installed by pip on your working environment.

Conclusion

In this deliverable, Group 28 expanded the IMPACT web application to include database manipulation and user authentication. Using the built in authentication extended by a custom 'profile' model, the team was able to implement a secure user creation or sign up process while allowing additional profile information to be stored, read, updated and deleted for the corresponding user. By using the Django provided authentication system, the team was able to provide robust authentication services and significantly reduce the amount of development time and required written code. The team learned much about the authentication features as well as the use of the Django forms by creating Model based forms to be rendered in the views with only formatting required to render a database driven User Interface. The team faced several challenges in this deliverable including using ModelForms to help facilitate the 'Controller' in the web application. The Django framework is extensive and provides a tremendous amount of functionality our team only tapped into. Learning more about the Django features we did use, such as authentication, mixins and signals will help improve security, reduce code duplication and volume and make for a more robust experience for the users of the Group 28's IMPACT web application.