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Design Service Layers

Overview

This application will utilize the Django REST Framework to create the API. Routes will point to specific endpoints, and service layers will be used when business logic is needed to manipulate the data returned from the database. I plan to use Django authentication to handle user registration, sign-in, and logout. Once the user is signed in, they will be redirected to the user home page which will have links to the main functionality of the application.

Specifications

I have used example URL's since the project is not currently hosted and have created a sample set of the data locally for the examples. The following are the planned endpoints and how they will be utilized:

Account Detail

1. Get Account Detail

Method: GET

URL: https://logbookmanager.com/logbook/account-detail/

Purpose: When the user is logged into the application, they will be able to click on the link for their account detail and this endpoint will be called. If they have already entered their account details, the data will render on the page.

Example requests:

curl --request GET --url https://logbookmanager.com/logbook/account-detail/

Sample Success Response:

```
$ curl -1 http://127.0.0.1:8000/account/
% Total % Received % Xferd Average Speed Time Time Time Current
100 134 300 134 0 12859 0 --:--:- --:--:-- 44666HTTP/1.1 200 0K
Date: Sat, 25 Mar 2023 23:54:5 GM
Date: Sat, 25 Mar 2023 23:54:5 GM
Date: Sat, 25 Mar 2023 23:54:5 GM
Server: WSCIServer/0.2 CPython/3.10.10
Content-Type: application/json
Vary: Accept, cookie
Allow: GET, POST, HEAD, OPTIONS
X-Frame-Options: DENY
Content-Length: 134
X-Content-Type-Options: nosniff
Referrer-Policy: same-origin
[{"pilot":1,"ifirst_name":"Sample","last_name":"Pilot","age":45,"pilot_in_command":true,"current_aircraft_type":"multi-engine"}]
[{"pilot":1,"id":1,"first_name":"Sample","last_name":"Pilot","age":45,"pilot_in_command":true,"current_aircraft_type":"multi-engine"}]
```

Sample Error Response:

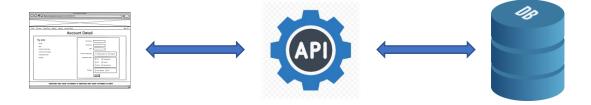
```
{
```

"status": 404,

"response": "Account detail not completed for this account yet."

}

Diagram:



2. Create a new account detail record:

Method: POST

URL: https://logbookmanager.com/logbook/account-detail/

Purpose: When the user is logged into the application and has navigated to the account detail page, they will be able to fill out the form for their account detail and this endpoint will be called. Their account detail data will then be rendered on the page.

Example requests:

curl -i https://logbookmanager.com/logbook/account-detail/ \

-X POST \

-H 'Content-Type: application/json' \

-d ' {"pilot": 1,"first_name": "Another","last_name": "Pilot","age": 25, "pilot_in_command": false,"current_aircraft_type": "single-engine"}' \

-w '\n'

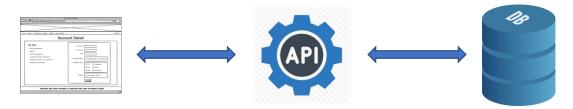
Sample Success Response:

```
S curl -1 http://127.0.0.1:8000/account/ \
-X POST \
-N Content-Type: application/json' \
-N Content-Type: application/json  
-N Cont
```

Sample Error Response:

{
"status" : 400,
"response" : "Missing required fields. Please fill out all information."
}

Diagram:



3. Update Account Detail

Method: PUT

URL: https://logbookmanager.com/logbook/account-detail/<account-id>/

Purpose: When the user is logged into the application and has navigated to the account detail page, they will be able to click update for their account detail. They will get a form populated with the current data, after making changes to their data they can click save and this endpoint will be called. Their updated account detail data will then be rendered on the page.

Example Request:

```
curl -i https://logbookmanager.com/logbook/account-detail/2/\
-X PUT \
-H 'Content-Type: application/json' \
-d ' {"pilot": 2,"first_name": "Another","last_name": "Pilot","age": 35,
    "pilot_in_command": false,"current_aircraft_type": "single-engine"}' \
-w '\n'
```

Sample Success Response:

Sample Error Response:

Diagram:

```
{
"status" : 400,
"response" : "Missing required fields. Please fill out all information."
}
```



Flights

4. Get Flights

Method: GET

URL: https://logbookmanager.com/logbook/flights/

Purpose: When the user is logged into the application, they will be able to click on the link for their flight summary and this endpoint will be called. If they have already entered flight data in the database, a list of their flight data will render on the page.

The reports page will also utilize this endpoint to gather data for generating reports. The user will select the type of report they want to view and click submit, and this endpoint will be called. A reports service will perform the business logic on the data and return the report information to the page.

Example requests:

curl --request GET --url https://logbookmanager.com/logbook/flights/

Sample Success Response:

```
| Company | Intervilla | Interv
```

Sample Error Response:

"status" : 404,

"response": "No flights entered for this account yet."
}

Diagram:

Summary Page:



5. Create a new flight record:

Method: POST

URL: https://logbookmanager.com/logbook/flights/

Purpose: When the user is logged into the application and has navigated to the flight entry page, they will be able to fill out the form with their flight information and click submit and this endpoint will be called. They will receive a message that their data was successfully entered.

Example requests:

curl -i https://logbookmanager.com/logbook/flights/\

-X POST \

-H 'Content-Type: application/json' \

```
-d'{"pilot": 2,"flight_date": "2023-03-21","origin": "ord","destination": "tys","tail_number": 894,"total_time": 3.2,"landings": 1,"multi_engine_time": 3.2,"single_engine_time": 0.0,"vfr_time": 3.0,"ifr_time": 0.2,"night_time": 0.0,"notes": "ord-tys"}'\
```

-w '\n'

Sample Success Response:

```
Specific there/122.0.0.1.000/Thights/ \
NOTION page splitation/jags splitation
```

Sample Error Response:

```
{
"status" : 400,
"response" : "Missing required fields. Please fill out all information."
}
```

Diagram:



6. Update Flight Data

Method: PUT

URL: https://logbookmanager.com/logbook/flights/<flight-id>/

Purpose: When the user is logged into the application and has navigated to the summary page, they will see a list of flights and be able to click update for a flight. They will get a form populated with the current data, after making changes to their data they can click save and this endpoint will be called. Their updated flight data will then be rendered on the page.

Example Request:

curl -i https:// logbookmanager.com/logbook /flights/2/ $\$

```
-X PUT\
-H 'Content-Type: application/json'\
-d '{"pilot": 2,"flight_date": "2023-03-22","origin": "ord","destination":
"tys","tail_number": 894,"total_time": 3.2,"landings": 1,"multi_engine_time":
3.2,"single_engine_time": 0.0,"vfr_time": 3.0,"ifr_time": 0.2,"night_time":
0.0,"notes": "ord-tys"} '\
-w '\n'
```

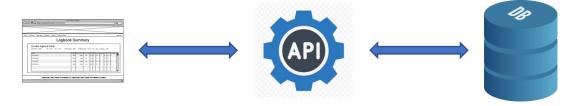
Sample Success Response:

```
| Search | Inter/122.0.0.1:8600/flights/J/ \
| APT | A
```

Sample Error Response:

```
{
"status" : 400,
"response" : "Missing required fields. Please fill out all information."
}
```

Diagram:



7. Delete Flight

Method: DELETE

URL: https://logbookmanager.com/logbook/flights/<flight-id>/

Purpose: When the user is logged into the application and has navigated to the summary page, they will see a list of flights and be able to click delete for a flight they would like to remove. They will get a message to confirm the delete and if they click yes, this endpoint will be called. Their updated flight data will then be rendered on the page.

Example request:

curl -X DELETE https://logbookmanager.com/logbook/flights/4/

Sample Success Response:

Sample Error Response:

```
{
"status" : 404,
"response" : "That flight data was not found."
}
```

Diagram:



Medical

8. Get Medical Information

Method: GET

URL: https://logbookmanager.com/logbook/medical/

Purpose: When the user is logged into the application, they will be able to click on the link for their medical information and this endpoint will be called. If they have already entered medical data in the database, their medical data will render on the page.

Example requests:

curl --request GET --url https://logbookmanager.com/logbook/medical/

Sample Success Response:

Sample Error Response:

{

"status": 404,

"response": "No medical information entered for this account yet."

}

Diagram:



9. Create a new medical record:

Method: POST

URL: https://logbookmanager.com/logbook/medical/

Purpose: When the user is logged into the application and has navigated to the medical page, they will be able to fill out the form with their medical information and click submit and this endpoint will be called. They will receive a message that their data was successfully entered.

Example requests:

```
curl -i https://logbookmanager.com/logbook/medical/\
-X POST\
-H 'Content-Type: application/json'\
-d ' {"pilot": 1,"medical_class": 1, "medical_date": "2022-07-
17","examiner_name": "Dr Smith","examiner_phone": "865-555-1212","notes": "ecg due next visit"} ' \
```

-w '\n'

Sample Success Response:

```
| Service | Serv
```

Sample Error Response:

```
{
    "status" : 400,
    "response" : "Missing required fields. Please fill out all information."
}
```

Diagram:



10. Update Medical Record

Method: PUT

URL: https://logbookmanager.com/logbook/medical/<medical-id>/

Purpose: When the user is logged into the application and has navigated to the medical page, they will see a list of their medical history and be able to click update. They will get a form populated with the current data, after making changes to their data they can click save and this endpoint will be called. Their updated medical data will then be rendered on the page.

Example Request:

```
curl -i http:// logbookmanager.com/logbook/medical/4/\
```

```
-X PUT \
```

```
-H 'Content-Type: application/json' \
```

```
-d '{"pilot": 1,"medical_class": 1, "medical_date": "2022-07-
15","examiner_name": "Dr Smith","examiner_phone": "865-555-1212","notes": "ecg due next visit"}' \
```

-w '\n'

Sample Success Response:

Sample Error Response:

```
{
"status" : 400,
"response" : "Missing required fields. Please fill out all information."
}
```

Diagram:



11. Delete Medical Record

Method: DELETE

URL: https://logbookmanager.com/logbook/medical/<medical-id>/

Purpose: When the user is logged into the application and has navigated to the medical page, they will see their medical history and be able to click delete for a medical they would like to remove. They will get a message to confirm the delete and if they click yes, this endpoint will be called. Their updated medical data will then be rendered on the page.

Example request:

curl -X DELETE http://logbookmanager.com/logbook/medical/4/

Sample Success Response:

Sample Error Response:

{

```
"status" : 404,

"response" : "That medical record was not found."
}
```

Reports

12. Get Reports

Method: GET

URL: https://logbookmanager.com/logbook/reports/<report-type>

Purpose: When the user is logged into the application, they will be able to click on the link for reports to go to the reports page. The user will select the type of report they want to view and click submit, and this endpoint will be called. A reports service will perform the business logic on the data and return the report information to the page.

```
Example requests:
```

```
curl --request GET --url https://logbookmanager.com/logbook/reports/hours
```

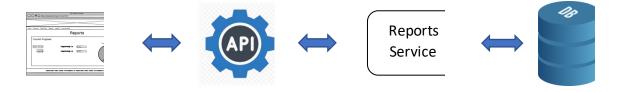
```
Sample Success Response:
```

```
Sample Error Response:
```

```
{
"status" : 404,
```

```
"response": "Flight data must be entered to generate report."
}
```

Reports Page:



Pilot Certificates Held

13. Get Pilot Certificates Held

Method: GET

URL: https://logbookmanager.com/logbook/pilot-certificates-held/

Purpose: When the user is logged into the application, they will be able to click on the link for their account detail. On this page there will be a list of which certificates the user currently holds.

Example requests:

curl --request GET --url https://logbookmanager.com/logbook/pilot-certificates-held/

Sample Success Response:

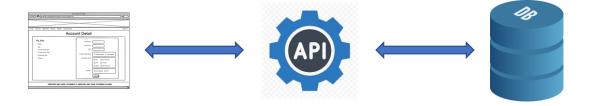
```
$ curl -i http://127.0.0.1:8000/certificatesheld/ -w '\n' % Total % Received % Xferd Average Speed Time Time Time Current Dload upload Total Spent Left Speed
100 113 100 113 0 5127 0 --:--:- 5380HTTP/1.1 200 0K
Date: Sun, 26 Mar 2023 17:43:08 GMT
Server: WSGIServer/0.2 CPython/3.10.10
Content-Type: application/json
Vary: Accept, cookie
Allow: GET, POST, HEAD, OPTIONS
X-Frame-Options: DENY
Content-Length: 113
X-content-Type-options: nosniff
Referrer-Policy: same-origin
Cross-Origin-Opener-Policy: same-origin
[{"pilot":1,"certificate":1},{"pilot":2,"certificate":1},{"pilot":3,"certificate":3},{"pilot":3,"certificate":3}]
```

Sample Error Response:

```
"status" : 404,
```

"response" : "No certificates entered for this account yet." }

Diagram:



14. Add a new pilot certificate:

Method: POST

URL: https://logbookmanager.com/logbook/pilot-certificates-held/

Purpose: When the user is logged into the application and has navigated to the account detail page, they will be able click on update certificates and fill out a form to check off which certificates they hold, when they click submit this endpoint will be called. Their certificates data will then be rendered on the page.

Example requests:

curl -i https://logbookmanager.com/logbook/pilot-certificates-held/\

-X POST \

-H 'Content-Type: application/json' \

-d '{"pilot": 1,"certificate": 3}' \

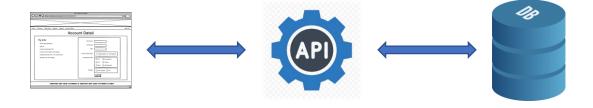
-w '\n'

Sample Success Response:

Sample Error Response:

```
{
"status" : 400,
"response" : "Missing required fields. Please fill out all information."
}
```

Diagram:



15. Delete Certificate Held

Method: DELETE

URL: https://logbookmanager.com/logbook/pilot-certificates-held/

<certificate-id>/

Purpose: When the user is logged into the application and has navigated to the account detail page, they will be able to click delete on a certificate. They will receive a message asking to confirm, and if they click yes, this endpoint will be called. Their updated certificates held data will then be rendered on the page.

Example Request:

curl -i –X DELETE http://logbookmanager.com/logbook/pilot-certificates-held/2/ $\$

Sample Success Response:

Sample Error Response:

```
{
    "status" : 404,
    "response" : "The certificate record was not found."
}
```

Diagram:



Pilot Ratings Held

16. Get Pilot Ratings Held

Method: GET

URL: https://logbookmanager.com/logbook/pilot-ratings-held/

Purpose: When the user is logged into the application, they will be able to click on the link for their account detail. On this page there will be a list of which type ratings the user currently holds.

Example requests:

curl --request GET --url https://logbookmanager.com/logbook/pilot-ratings-held/

Sample Success Response:

Sample Error Response:

{

"status" : 404,

"response": "No ratings entered for this account yet."

}

Diagram:



17. Add a new rating:

Method: POST

URL: https://logbookmanager.com/logbook/ratings-held/

Purpose: When the user is logged into the application and has navigated to the account detail page, they will be able click on update ratings and fill out a form to check off which ratings they hold, when they click submit this endpoint will be called. Their ratings data will then be rendered on the page.

Example requests:

```
curl -i https://logbookmanager.com/logbook/ratings-held/\
-X POST \
-H 'Content-Type: application/json' \
-d ' {"pilot": 1,"rating": 3}' \
```

Sample Success Response:

Sample Error Response:

Diagram:

-w '\n'

```
{
"status" : 400,
"response" : "Missing required fields. Please fill out all information."
}
```



18. Delete Rating Held

Method: DELETE

URL: https://logbookmanager.com/logbook/ratings-held/

<rating-id>/

Purpose: When the user is logged into the application and has navigated to the account detail page, they will be able to click delete on a certificate. They will receive a message asking to confirm, and if they click yes, this endpoint will be called. Their updated certificates held data will then be rendered on the page.

Example Request:

curl -i –X DELETE http://logbookmanager.com/logbook/ratings-held/2/\

Sample Success Response:

```
$ curl -i -X DELETE http://127.0.0.1:8000/ratingsheld/2/
% Total % Received % Xferd Average Speed Time Time Current
Dload Upload Total Spent Left Speed
0 0 0 0 0 0 0 0 --:---- OHTTP/1.1 204 No Content
Date: Sun, 26 Mar 2023 18:14:41 GMT
Server: WSGIServer/0.2 CPython/3.10.10
Vary: Accept, Cookie
Allow: GET, PUT, PATCH, DELETE, HEAD, OPTIONS
X-Frame-Options: DENY
Content-Length: 0
X-Content-Type-Options: nosniff
Referrer-Policy: same-origin
Cross-Origin-Opener-Policy: same-origin
```

Sample Error Response:

```
{
    "status" : 404,
    "response" : "The rating record was not found."
}
```

Diagram:



Users

19.1 will be using the Django auth app to authenticate users. The endpoints for login, register, and logout should be:

Method: POST

URL: https://logbookmanager.com/logbook/users/login/

Purpose: When a user wants to login from the home page, they will click on the link to sign in and will be taken to this endpoint. They can enter their user login information and click submit. They will be redirected to the user home page.

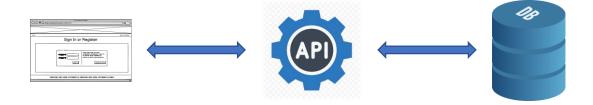
Diagram:



20. URL: https://logbookmanager.com/logbook/users/signup/

Purpose: When a user needs to create an account, they will click on the link to sign in/create account and be taken to the signin page. From there if they click on create account, they will fill out their account details and click submit, then this endpoint will be called.

Diagram:



21. URL: https://logbookmanager.com/logbook/users/logout/

Purpose: When a user wants to logout from the application, they will click on the logout link. They will be signed out and will be redirected to the home page.

Diagram:

