

Practice Lab on Spring boot



Instructions

5 assignments given on Spring Boot Core, Spring boot Data JPA, Spring Boot Web MVC and Spring Boot Rest API

Database Information

Recommended to use MYSQL database for this assignment. But If you feel like to use any other databases like Mongo, H2DB, still you can use.

MYSQL DB file location :

<https://github.com/richardsforu/ADM-Springboot-B1/blob/master/Assignment/tables/Airline-db.sql>

Spring boot 2x

- > boot core
- > boot data
- > boot data jpa
- > boot web mvc
- > boot restful web services

Assignment 1: On Spring Boot Core and DATAJPA

Understand the below table structure and create java class mappings with Spring boot Data JPA module

```
mysql> select * from airline_info;
```

airline_id	airline_logo	name_of_airline
1	airindia.png	Air India
6	indigo.png	Indigo
11	air-asia.png	Air Asia
16	spicejet.png	Spicejet
21	vistara.png	Vistara
26	truejet.png	Trujet
31	goair.png	GoAir

7 rows in set (0.01 sec)

```
mysql> select * from flights_info;
```

airline_id	flight_info_id
1	2
1	3
1	4
1	5
6	7
6	8
6	9
6	10
11	12
11	13
11	14
11	15
16	17
16	18
16	19
16	20
21	22
21	23
21	24
21	25
26	27
26	28
26	29
26	30
31	32
31	33
31	34
31	35

28 rows in set (0.00 sec)

```
mysql> select * from flight_info;
```

flight_info_id	flight_number	flight_type	numberof_seats
2	AI-840	Airbus	150
3	AI-850	Airbus	150
4	AI-860	Airbus	150
5	AI-870	Airbus	150
7	6E-6684	Airbus	150
8	6E-6685	Airbus	150
9	6E-6686	Airbus	150
10	6E-6687	Airbus	150
12	I5-755	Airbus	150
13	I5-756	Airbus	150
14	I5-757	Airbus	150
15	I5-758	Airbus	150
17	SG-432	Airbus	150
18	SG-433	Airbus	150
19	SG-434	Airbus	150
20	SG-435	Airbus	150
22	UK-830	Airbus	150
23	UK-831	Airbus	150
24	UK-832	Airbus	150
25	UK-833	Airbus	150
27	2T-518	Airbus	150
28	2T-519	Airbus	150
29	2T-520	Airbus	150
30	2T-521	Airbus	150
32	G8-424	Airbus	150
33	G8-425	Airbus	150
34	G8-426	Airbus	150
35	G8-427	Airbus	150

28 rows in set (0.01 sec)

```
mysql> select * from fare;
```

fare_id	currency	fare
37	INR	4500
40	INR	3500
43	INR	5000
46	INR	2546
49	INR	7500
52	INR	10000
55	INR	7438
58	INR	8743
61	INR	1955
64	INR	2500
67	INR	4943
70	INR	4943
73	INR	4500
76	INR	6200
79	INR	5000
82	INR	1200
85	INR	1389
88	INR	11000
91	INR	15000

19 rows in set (0.00 sec)

```
mysql> select * from inventory;
```

inv_id	count
38	100
41	98
44	100
47	100
50	100
53	100
56	100
59	100
62	100
65	100
68	100
71	100
74	100
77	100
80	100
83	120
86	100
89	100
92	100

```
19 rows in set (0.00 sec)
```

```
mysql> select * from flight;
```

id	destination	duration	flight_date	flight_number	flight_time	origin	fare_id	flight_infold	inv_id
36	CHENNAI	2 hrs 15 mins	2020-08-21	AI-840	02:12:00	DELHI	37	2	38
39	HYDERABAD	2 hrs 45 mins	2020-08-21	AI-850	01:15:00	DELHI	40	3	41
42	MUMBAI	2 hrs 50 mins	2020-08-21	AI-860	02:30:00	CHENNAI	43	4	44
45	HYDERABAD	1 hrs 45 mins	2020-08-21	AI-870	02:45:00	PUNE	46	5	47
48	PORTBLAIR	3 hrs 00 mins	2020-08-21	6E-6684	03:00:00	CHENNAI	49	7	50
51	DELHI	3 hrs 15 mins	2020-08-21	6E-6685	03:15:00	BENGULURU	52	8	53
54	PUNE	4 hrs 07 mins	2020-08-21	6E-6686	03:15:00	DELHI	55	9	56
57	MANGALORE	3 hrs 30 mins	2020-08-21	6E-6687	03:15:00	HYDERABAD	58	10	59
60	AHMADABAD	6 hrs 00 mins	2020-08-21	I5-755	04:30:00	MUMBAI	61	12	62
63	KOLKATA	3 hrs 15 mins	2020-08-21	I5-756	04:45:00	HYDERABAD	64	13	65
66	DELHI	1 hrs 00 mins	2020-08-21	I5-757	07:45:00	KOLKATA	67	14	68
69	MUMBAI	1 hrs 00 mins	2020-08-21	SG-434	11:45:00	DELHI	70	19	71
72	CHENNAI	2 hrs 15 mins	2020-08-21	SG-435	02:45:00	DELHI	73	20	74
75	CHENNAI	2 hrs 15 mins	2020-08-21	UK-830	10:15:00	DELHI	76	22	77
78	CHENNAI	2 hrs 15 mins	2020-08-21	UK-831	11:30:00	DELHI	79	23	80
81	CHENNAI	2 hrs 15 mins	2020-08-21	UK-832	11:55:00	DELHI	82	24	83
84	CHENNAI	2 hrs 15 mins	2020-08-21	UK-833	11:55:00	DELHI	85	25	86
87	CHENNAI	2 hrs 15 mins	2020-08-21	2T-518	10:15:00	DELHI	88	27	89
90	CHENNAI	2 hrs 15 mins	2020-08-21	2T-519	19:35:00	DELHI	91	28	92

```
19 rows in set (0.00 sec)
```

```
mysql> select * from booking_record;
```

booking_id	booking_date	destination	fare	flight_date	flight_number	flight_time	origin	status
93	2020-07-14 10:44:19	HYDERABAD	3500	2020-08-21	AI-850	01:15:00	DELHI	Confirmed

```
1 row in set (0.01 sec)
```

```
mysql> select * from passenger;
```

passenger_id	email_address	first_name	gender	last_name	mobile_number	booking_id
94	praveen@abc.com	Praveen	Male	Reddy	1212121212	93
95	james@abc.com	James	Male	Goedic	3243654321	93

```
2 rows in set (0.00 sec)
```

```
mysql> select * from booking_details;
```

booking_id	passenger_id
93	94
93	95

```
2 rows in set (0.01 sec)
```

Now with Spring boot data JPA with MySQL or any database create mapping classes as per given from above tables.

MySQL database file location <https://github.com/richardsforu/ADM-Springboot-B1/blob/master/Assignment/tables/Airline-db.sql>

Assignment 2: On Spring Boot DATA JPA

1. Write a class to retrieve all Indigo flight trips of August 21st 2020
2. Write a class to find all the flights leaving from Delhi on 21st of August 2020.
3. Write a class to search for flights flying between Delhi to Chennai on 21st August 2020 by flight fare low to high
 - a. **Note: find all flights with combination of origin, destination, flightDate. Provide number of passengers. Do not display flights if Flight inventory is less than number of passengers provided or Flight inventory is 0 (means flight full)**
4. Write a class to search for flights with combination of flight number and origin and destination
5. Write a class to search for a single flight with combination of flight number and flight date and flight time. (**make sure only single flight is displaying for this criteria**)
6. Schedule **6 additional flights** from Pune to Chennai on August 22nd with different times on the same day. (schedule any flight as per your desire). Make sure flight number must not repeat on the same day for same origin and destination. Also make sure that same flight number must not be scheduled on the same day from any origin and destination.
7. Write a class to book a flight for 2 passengers from Delhi to Hyderabad on 21st August for 01:15 AM, and update inventory accordingly. Please refer table data of Passenger and booking_record, booking_details for your reference
8. Write a class to add 4 more flights from Delhi to Pune on 21st August for your desired timings. Make sure you are adding 1 Indigo, 1 Air Asia, 1 Vistara and 1 Air India flight.
9. Write a class to Update Indigo flight which is schedule on 21st August 2020 3:15 AM from Delhi to Pune, and re-schedule it to 22nd August 2020 6:30 PM for the flight number **6E-6686**

Assignment 3: On Spring Boot Web-MVC with DATA JPA

1. Create a login form to allow passenger to login to portal. Allow passenger to register himself in case if passenger is not registered already. Create login form with username and password fields and Registration form with passenger first name, last name, mobile number, gender, user name and password.
 - a. **Please note any passenger can search for flights. But only registered passenger can make bookings.**
 - b. **Make sure Single passenger cannot book more than 4 tickets at a time.**
2. Create a Flight search form with following mandatory text fields
 - a. Origin
 - b. Destination
 - c. Date of flying (do not include time. Make sure passenger should able to select date only)
 - d. Submit button with **SEARCH** label

3. Once passenger clicks on **SEARCH** button from above search form, then display all scheduled flights in a table format and make sure generate **BOOK** button for each flight listed in the table.

Assignment 4: On Spring Boot Web-MVC with DATA JPA

1. Once passenger clicks on **BOOK** button from above table, then display Passenger Information form to accept booking with following fields.
 - a. First name
 - b. Last name
 - c. Gender
 - d. Mobile number
2. Once Passenger provides above mentioned info and allow passenger to complete booking. Once the booking is completed, then add booking information in the booking_record table.
3. For the successful booking of a passenger, can able to check in using link provided in the home page. once passenger clicks on check in link, ask booking id , then assign a seat in the flight and display the information of check in in a table format.

Assignment 5: On Spring Boot REST API with DATA JPA

1. Create a Restful controller to add following mapping operations. So that Passenger can consume desired service.
 - a. Login / validate User
 - b. Search (able to find by airport city, date, flight number, origin, destination or any combination of specified depends on usage)
 - c. Booking
 - d. Checkin
2. Provide all possible GET, POST, PUT, DELETE mappings in the controller to control entire application.
3. You should generate JSON and XML response data. So that client may accept any one response type from the Service.
4. Test POST, PUT and DELETE request mappings from post man or any REST mock testing app.
5. Test GET request mapping from chrome browser.
6. Make sure you are generating JSON response to display Dashboard information which contains all flight information, airline information, airport information etc.
7. Generate JSON response of flights for the criteria given by the client.
8. Generate JSON response to allow any client to Book filtered flight