



Flight Spring Boot Project

By Mateusz Kluska



Git Homepage

Flight - Spring Boot Project

A project that connects a front-end HTML page to a back-end MySQL database, using Spring Boot framework to create custom API.

User stories and Sprints

- [Jira](#) - Agile Project Management

Installing

1. Fork this repository
2. Clone forked repository to your local device
3. Open a comand prompt/git bash
4. Navigate to project location
5. Type: `java -jar FlightSpring-0.0.1-SNAPSHOT.jar`

Prerequisites

Database - [MySQL Server 5.7+](#)

Back-end Programming Language - [Java](#)

Build Tool - [Maven](#)

Unit Testing - [JUnit](#)

Getting Started

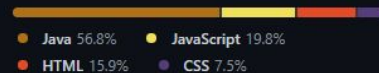
1. Launch a project in comand prompt/git bash or in your local IDE
2. Open your local browser
3. type: <http://localhost:8080/index.html>

Packages

No packages published

[Publish your first package](#)

Languages



Jira - Agile Project Management

TO DO 3 ISSUES

As a developer, I want to prepare presentation, so that project could be understood easily.
DOCUMENTATION
FLIG-9 2

As a project owner, I want risk assessments updated, so that I know what have happened during project.
DOCUMENTATION
FLIG-8 1

As a project owner, I want risk assessments, so that risk preventing procedures can be implemented.
DOCUMENTATION
FLIG-2 1

IN PROGRESS 3 ISSUES

Add a background, Nav and Footer to HTML page.
FRONT END
FLIG-20 2

Create a unique delete button for each of DB's entry.
FRONT END
FLIG-18 4

Create a unique update button for each of DB's entry.
FRONT END
FLIG-19 4

DONE 14 ISSUES

As a product owner, I want Kanban board, so that project progress would be easily visible.
DOCUMENTATION
FLIG-1 2

As a developer, I want to style my html page, so that it would be eye-appealing.
FRONT END
FLIG-15 5

As a developer, I want GitHub repository, so that code would be stored and changes would be documented.
BACK END
FLIG-3 1

As a User, I want to delete a flight, so that I can remove unwanted data from a database.
BACK END

FLIG-5 As a developer, I want Unified Modeling Language diagram, so that I can understand relationships between objects. **DOCUMENTATION** 2 DONE

FLIG-13 As a User, I want to view all flights, so that I can visually inspect the database. **FRONT END** 2 DONE

FLIG-14 As a User, I want a html page, so that I will have a graphic UI. **FRONT END** 2 DONE

FLIG-4 As a developer, I want Entity Relationship Diagram, so that I can understand how data is stored. **DOCUMENTATION** 1 DONE

FLIG-12 As a User, I want to edit a flight, so that I can correct a database. **BACK END** 2 DONE

FLIG-10 As a User, I want to add new flight, so that I can store them in database. **BACK END** 2 DONE

FLIG-7 As a project owner, I want code to be commented, so that readability will be ensured. **BACK END** 1 DONE

FLIG-6 As a developer, I want my code to be tested, so that it will be ensured to work in various circumstances. **BACK END** 4 DONE

FLIG-17 Problem with BigDecimal format in unit testing **BACK END** 1 DONE

FLIG-16 Problem with LocalDate format and a testdata.sql **BACK END** 1 DONE

FLIG-20 Add a background, Nav and Footer to HTML page. **FRONT END** 2 IN PROGRESS

FLIG-18 Create a unique delete button for each of DB's entry. **FRONT END** 4 IN PROGRESS

FLIG-19 Create a unique update button for each of DB's entry. **FRONT END** 4 IN PROGRESS

FLIG-9 As a developer, I want to prepare presentation, so that project could be understood easily. **DOCUMENTATION** 2 TO DO

FLIG-8 As a project owner, I want risk assessments updated, so that I know what have happened during project. **DOCUMENTATION** 1 TO DO

FLIG-2 As a project owner, I want risk assessments, so that risk preventing procedures can be implemented. **DOCUMENTATION** 1 TO DO

Risk Assessments Matrix

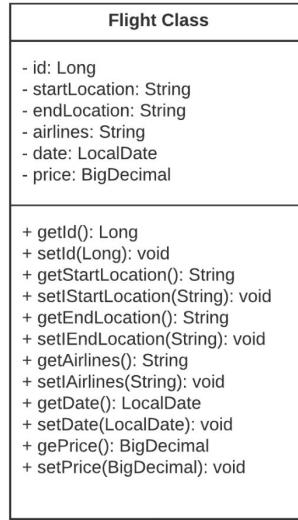
		Severity			
		Catastrophic: 4	Critical: 3	Moderate: 2	Marginal: 1
Probability	Frequent: 5	High - 20	High - 15	High - 10	Medium - 5
	Probable: 4	High - 16	High - 12	Serious - 8	Medium - 4
	Occasional: 3	High - 12	Serious - 9	Medium - 6	Low - 3
	Remote: 2	Serious - 8	Medium - 6	Medium - 4	Low - 2
	Improbable: 1	Medium - 4	Low - 3	Low - 2	Low - 1

Risk Assessments Matrix

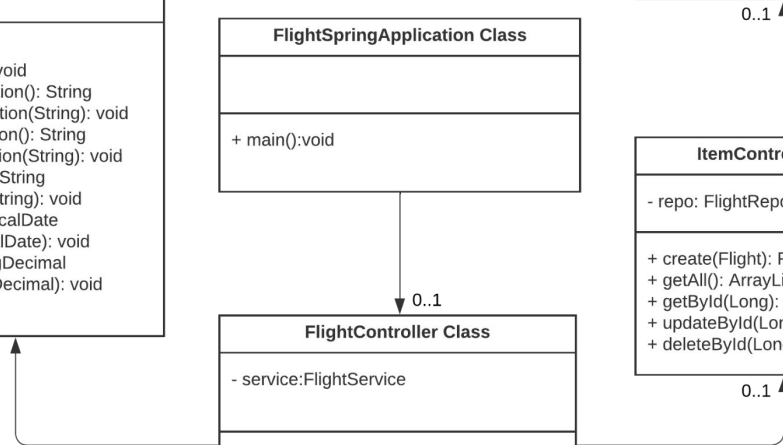
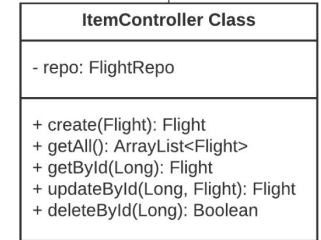
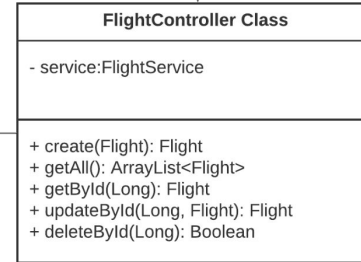
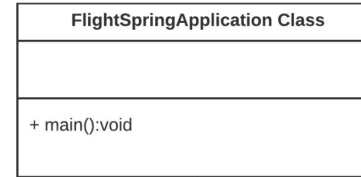
No.	Risk description	Project phase	Impact description	Probability	Severity	Score	Risk level	Responsible	Action plan
1	Bad organisation, double execution of work	Sprint 1	Team will not cooperate and same story can be implemented multiple times	2	2	4	Medium	Project leader	Implement roles, set up Jira, and plan Sprints
2	Project will not meet initial requirements	Sprint 1	Team will be unable to provide code for required tasks	1	4	4	Medium	Developers	Set up documentation, set up user stories
3	Project will not be made in agreed time	Sprint 1	Team will be unable to provide a complete solution that could meet requirements	2	3	6	Medium	Developers	Ensure that nobody is overloaded, make a daily meetings to control amount of Story points left to be done
4	Hardware failure	Sprint 1	Due to unpredicted circumstances a member of team could be left without tools to work	1	2	2	Low	Project leader	Check condition of hardware, run hardware tests to minimise risk
5	Data leak	Sprint 1	Confidential company information could be published or sold to competitors	2	3	9	Serious	Project leader / Developers	Do not leave your workspace unattended, do not talk about project in a public places
6	Power fluctuation	Sprint 1	A team could not produce digital solutions	2	3	6	Medium	Project leader	Reconsider installation of Uninterruptible Power Supply
7	Malicious interference	Sprint 1	Files and access to our databases and backups will be restricted	1	3	3	Low	Developers	Implement Firewall Do not reuse passwords
8	Corruption of data	Sprint 1	Files and progress done on coding can be lost	2	4	8	Serious	Developers	Ensure to implement MVP style of updates update everything to GitHub to create backup
9	Budget deficit	Sprint 1	Applications would be left undone and with errors	1	2	2	Low	Project leader	Consult all additional costs with client
10	Client withdrawal	Sprint 1	Client would not like to continue working with our team	1	4	4	Medium	Project owner	Make sure that client understands project and is committed to proceed
11	Absent team member	Sprint 1	A team member might be unavailable because of personal reasons	3	3	9	Serious	Project leader	Reduce stress at workplace implement remote working if necessary have some workforce in a backup

Entity Relationship diagram and UML

flight		
PK	id	INT
	start_location	VARCHAR(255)
	end_location	VARCHAR(255)
	airlines	VARCHAR(255)
	date	DATE
	price	DECIMAL(10,2)



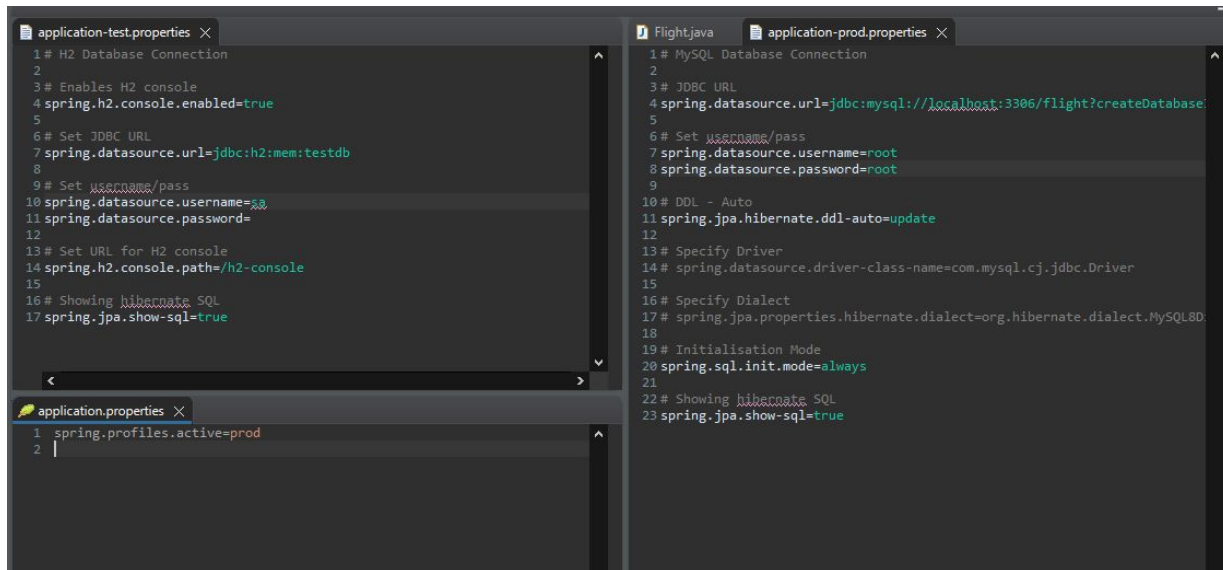
UML



Code development journey

```
33 lines (29 sloc) | 395 Bytes
Raw Blame
1  HELP.md
2  target/
3  !.mvn/wrapper/maven-wrapper.jar
4  !**/src/main/**/target/
5  !**/src/test/**/target/
6
7  ### STS ###
8  .apt_generated
9  .classpath
10 .factorypath
11 .project
12 .settings
13 .springBeans
14 .sts4-cache
15
16 ### IntelliJ IDEA ###
17 .idea
18 *.iws
19 *.iml
20 *.ipr
21
22 ### NetBeans ###
23 /nbproject/private/
24 /nbbuild/
25 /dist/
26 /nbdist/
27 /.nb-gradle/
28 build/
29 !**/src/main/**/build/
30 !**/src/test/**/build/
31
32 ### VS Code ###
33 .vscode/
```

Databases properties



```
application-test.properties X
1 # H2 Database Connection
2
3 # Enables H2 console
4 spring.h2.console.enabled=true
5
6 # Set JDBC URL
7 spring.datasource.url=jdbc:h2:mem:testdb
8
9 # Set username/pass
10 spring.datasource.username=sa
11 spring.datasource.password=
12
13 # Set URL for H2 console
14 spring.h2.console.path=/h2-console
15
16 # Showing hibernate SQL
17 spring.jpa.show-sql=true

application-prod.properties X
1 # MySQL Database Connection
2
3 # JDBC URL
4 spring.datasource.url=jdbc:mysql://localhost:3306/flight?createDatabase=
5
6 # Set username/pass
7 spring.datasource.username=root
8 spring.datasource.password=root
9
10 # DDL - Auto
11 spring.jpa.hibernate.ddl-auto=update
12
13 # Specify Driver
14 spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver
15
16 # Specify Dialect
17 spring.jpa.properties.hibernate.dialect=org.hibernate.dialect.MySQL8D
18
19 # Initialisation Mode
20 spring.sql.init.mode=always
21
22 # Showing hibernate SQL
23 spring.jpa.show-sql=true

application.properties X
1 spring.profiles.active=prod
2 |
```


Flight Class with first running

```
Flight.java
7 import javax.persistence.Column;
8 import javax.persistence.Entity;
9 import javax.persistence.GeneratedValue;
10 import javax.persistence.GenerationType;
11 import javax.persistence.Id;
12
13 @Entity
14 public class Flight {
15
16     // Columns
17     @Id
18     @GeneratedValue(strategy = GenerationType.IDENTITY)
19     private long id;
20
21     @Column
22     private String startLocation;
23
24     @Column
25     private String endLocation;
26
27     @Column
28     private String airlines;
29
30     @Column
31     private LocalDate date;
32
33     @Column(precision = 10, scale = 2)
34     private BigDecimal price;
35
36     // Constructors
37
38     // Default constructor
39     public Flight() {
40
41     }
```

Console

```
FlightSpring - FlightSpringApplication [Spring Boot App] C:\Users\Mateusz\AppData\Local\Temp\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_17.0.3.v20220515-1416\jre\bin\javaw.exe (18 Aug 2022, 07:13:59)
2022-08-18 07:14:01.160 INFO 17172 --- [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8080 (http)
2022-08-18 07:14:01.166 INFO 17172 --- [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2022-08-18 07:14:01.166 INFO 17172 --- [ restartedMain] org.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/9.0.65]
2022-08-18 07:14:01.218 INFO 17172 --- [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2022-08-18 07:14:01.219 INFO 17172 --- [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 796
2022-08-18 07:14:01.241 INFO 17172 --- [ restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2022-08-18 07:14:01.464 INFO 17172 --- [ restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start completed.
2022-08-18 07:14:01.471 INFO 17172 --- [ restartedMain] o.s.b.a.h2.H2ConsoleAutoConfiguration : H2 console available at '/h2-console'. Database available at
2022-08-18 07:14:01.538 INFO 17172 --- [ restartedMain] o.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing PersistenceUnitInfo [name: default]
2022-08-18 07:14:01.570 INFO 17172 --- [ restartedMain] org.hibernate.Version : HHH000412: Hibernate ORM core version 5.6.10.Final
2022-08-18 07:14:01.687 INFO 17172 --- [ restartedMain] o.hibernate.annotations.common.Version : HCANN000001: Hibernate Commons Annotations {5.1.2.Final}
2022-08-18 07:14:01.768 INFO 17172 --- [ restartedMain] org.hibernate.dialect.Dialect : HHH000400: Using dialect: org.hibernate.dialect.MySQL8Dialect
```

Navigator: flight

SCHEMAS

Filter objects

flight

Tables

flight

Views

Stored Procedures

Functions

gameshopdb

Administration Schemas

Information

flight

SELECT * FROM flight.flight;

Result Grid

id	airlines	date	end_location	price	start_location
NULL	NULL	NULL	NULL	NULL	NULL

Table: flight

Columns:

id	bigint AI PK
airlines	varchar(255)
date	date
end_location	varchar(255)
price	decimal(10,2)
start_location	varchar(255)

FlightController code

```
Flight.java FlightController.java X FlightService.java
18 import com.qa.main.services.FlightService;
19
20 @RestController
21 @CrossOrigin
22 @RequestMapping("/flight")
23 public class FlightController {
24
25     private FlightService service;
26
27     public FlightController(FlightService service) {
28         this.service = service;
29     }
30
31     // POST request - CREATE
32     @PostMapping("/create")
33     public ResponseEntity<Flight> create(@RequestBody Flight entry) {
34         return new ResponseEntity<Flight>(service.create(entry), HttpStatus.CREATED);
35     }
36
37     // GET request - READ
38     @GetMapping("/getAll")
39     public ResponseEntity<List<Flight>> getAll() {
40         return new ResponseEntity<List<Flight>>(service.getAll(), HttpStatus.OK);
41     }
42
43     @GetMapping("/getById/{id}")
44     public ResponseEntity<Flight> getById(@PathVariable long id) {
45         return new ResponseEntity<Flight>(service.getById(id), HttpStatus.OK);
46     }
47
48     // PUT request - UPDATE
49     @PutMapping("/update/{id}")
50     public ResponseEntity<Flight> updateById(@PathVariable long id, @RequestBody Flight entry) {
51         return new ResponseEntity<Flight>(service.updateById(id, entry), HttpStatus.NO_CONTENT);
52     }
53
54     // DELETE request - DELETE
55     @DeleteMapping("/delete/{id}")
56     public ResponseEntity<Boolean> deleteById(@PathVariable long id) {
57         return new ResponseEntity<Boolean>(service.deleteById(id), HttpStatus.NO_CONTENT);
58     }
59
60 }
```

```
Flight.java FlightController.java X FlightService.java
1 package com.qa.main.services;
2
3 import java.util.List;
4
5 import org.springframework.stereotype.Service;
6
7 import com.qa.main.domain.Flight;
8
9 @Service
10 public class FlightService {
11
12     public Flight create(Flight entry) {
13         // TODO Auto-generated method stub
14         return null;
15     }
16
17     public List<Flight> getAll() {
18         // TODO Auto-generated method stub
19         return null;
20     }
21
22     public Flight getById(long id) {
23         // TODO Auto-generated method stub
24         return null;
25     }
26
27     public Flight updateById(long id, Flight entry) {
28         // TODO Auto-generated method stub
29         return null;
30     }
31
32     public Boolean deleteById(long id) {
33         // TODO Auto-generated method stub
34         return null;
35     }
36
37 }
38 }
```

FlightService code updated

```
FlightController.java  FlightService.java  FlightNotFoundException.java
8  import com.qa.main.expection.FlightNotFoundException;
9  import com.qa.main.repos.FlightRepo;
10
11  @Service
12  public class FlightService {
13
14      private FlightRepo repo;
15
16      public FlightService(FlightRepo repo) {
17          this.repo = repo;
18      }
19
20      public Flight create(Flight entry) {
21          return repo.saveAndFlush(entry);
22      }
23
24      public List<Flight> getAll() {
25          return repo.findAll();
26      }
27
28      public Flight getById(long id) {
29          return repo.findById(id).orElseThrow(FlightNotFoundException::new);
30      }
31
32      public Flight updateById(long id, Flight entry) {
33          // We get the existing entry
34          Flight existing = repo.findById(id).get();
35
36          // Update the existing entry,
37          existing.setStartLocation(entry.getStartLocation());
38          existing.setEndLocation(entry.getEndLocation());
39          existing.setAirlines(entry.getAirlines());
40          existing.setDate(entry.getDate());
41          existing.setPrice(entry.getPrice());
42
43          // Save the update back into the DB(ID is the same)
44          return repo.saveAndFlush(existing);
45      }
46
47      public Boolean deleteById(long id) {
48          repo.deleteById(id);
49
50          return !repo.existsById(id);
51      }
```

Postman tryouts

POSTlocalhost:8080/flight/create

ParamsAuthorizationHeaders (8)BodyPre-request ScriptTests

noneform-data x-www-form-urlencodedrawbinaryGraphQL

```
1 {
2   "startLocation": "Brighton",
3   "endLocation": "Malaga",
4   "airlines": "British Airlines",
5   "date": "2022-09-02",
6   "price": 79.99
7 }
```

GETlocalhost:8080/flight/getAll

ParamsAuthorizationHeaders (6)BodyPre-request ScriptTestsSettings

Query Params

KEY	VALUE
Key	Value

GETlocalhost:8080/flight/getById/1

ParamsAuthorizationHeaders (6)BodyPre-request ScriptTests

Headers 6 hidden

KEY
Key

BodyCookiesHeaders (8)Test Results

PrettyRawPreviewVisualizeJSON

```
1 {
2   "id": 2,
3   "startLocation": "Brighton",
4   "endLocation": "Malaga",
5   "airlines": "British Airlines",
6   "date": "2022-09-02",
7   "price": 79.99
8 }
```

BodyCookiesHeaders (8)Test Results

PrettyRawPreviewVisualizeJSON

```
1 {
2   "id": 1,
3   "startLocation": "Paris",
4   "endLocation": "Madrid",
5   "airlines": "Lot",
6   "date": "2022-09-01",
7   "price": 10.99
8 },
9 {
10  "id": 2,
11  "startLocation": "Brighton",
12  "endLocation": "Malaga",
13  "airlines": "British Airlines",
14  "date": "2022-09-02",
15  "price": 79.99
16 }
17 }
18 }
```

BodyCookiesHeaders (8)Test Results

PrettyRawPreviewVisualizeJSON

```
1 {
2   "id": 1,
3   "startLocation": "Paris",
4   "endLocation": "Madrid",
5   "airlines": "Lot",
6   "date": "2022-09-01",
7   "price": 10.99
8 }
```

Postman tryouts

Body Cookies Headers (8) Test Results

Pretty Raw Preview Visualize JSON

```
\r\n\tat org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:162)\r\n\tat org.springframework.web.filter.RequestContextFilter.doFilterInternal(OncePerRequestFilter.java:117)\r\n\tat org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:162)\r\n\tat org.springframework.web.filter.OncePerRequestFilter.doFilter(OncePerRequestFilter.java:189)\r\n\tat org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:189)\r\n\tat org.springframework.web.filter.CharacterEncodingFilter.doFilterInternal(CharacterEncodingFilter.java:201)\r\n\tat org.springframework.web.filter.OncePerRequestFilter.doFilter(OncePerRequestFilter.java:189)\r\n\tat org.apache.catalina.core.StandardWrapperValve.invoke(StandardWrapperValve.java:197)\r\n\tat org.apache.catalina.authenticator.AuthenticatorBase.invoke(AuthenticatorBase.java:54)\r\n\tat org.apache.catalina.valves.ErrorReportValve.invoke(ErrorReportValve.java:92)\r\n\tat org.apache.coyote.adapter.CoyoteAdapter.service(CoyoteAdapter.java:360)\r\n\tat org.apache.coyote.http11.Http11Processor.service(AbstractProcessorLight.java:65)\r\n\tat org.apache.coyote.http11.Http11Endpoint$SocketProcessor.doRun(NioEndpoint.java:1789)\r\n\tat org.apache.coyote.http11.Http11Endpoint$SocketProcessor.runWorker(ThreadPoolExecutor.java:1191)\r\n\tat org.apache.coyote.http11.Http11Endpoint$SocketProcessor.run(TaskThread.java:61)\r\n\tat java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1191)\r\n\tat java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:634)\r\n\tat java.lang.Thread.run(Thread.java:750)
```

```
6 "message": "Flight with that ID does not exist.",  
7 "path": "/flight/getById/100"  
8
```

PUT localhost:8080/flight/update/1

DELETE localhost:8080/flight/delete/2

Params Authorization Headers (8) Body Pre-request Script Tests

none form-data x-www-form-urlencoded raw binary GraphQL

Query Params

```
1 {  
2   "startLocation": "London",  
3   "endLocation": "Madrid",  
4   "airlines": "Lot",  
5   "date": "2022-09-01",  
6   "price": 10.99  
7 }
```

KEY

Key

Body Cookies Headers (7) Test Results

Pretty Raw Preview Visualize JSON

1

Body Cookies Headers (7) Test Results

Pretty Raw Preview Visualize JSON

1

Testing integration Controller

The screenshot displays an IDE with the following components:

- Package Explorer:** Shows the project structure with packages like `com.qa.main.controllers` and `com.qa.main.domain`.
- JUnit Runner:** Shows the test execution results: "Finished after 5.682 seconds", "Runs: 5/5", "Errors: 0", "Failures: 0".
- Source Editor:** Contains the `FlightControllerIntegrationTest.java` file. The code includes package declarations, imports, and annotations like `@SpringBootTest`, `@AutoConfigureMockMvc`, `@Sql`, `@ActiveProfiles("test")`, `@Autowired`, and `@Test`. The `createTest()` method is the primary test logic.
- Coverage View:** Located on the right, it shows the coverage percentage for various elements in the project, such as `FlightSpring` (54.0%), `src/test/java` (45.2%), and `src/main/java` (67.0%).
- Console:** At the bottom, it shows the output of the test run, including the JVM version and the test execution time.

Testing unit Controller

Package Explorer | JUnit |

Finished after 3.297 seconds

Runs: 5/5 | Errors: 0 | Failures: 0

FlightControllerUnitTest [Run: JUnit 5] (0.256s)

Failure Trace

```
1 package com.qa.main.controllers;
2
3 import static org.springframework.test.web.servlet.request.MockMvcRequestBuilders.delete;
4
26
27 @WebMvcTest
28 public class FlightControllerUnitTest {
29
30     @Autowired
31     private MockMvc mvc;
32
33     @Autowired
34     private ObjectMapper mapper; // Used for converting objects to JSON
35
36     @MockBean
37     private FlightService service;
38
39     @Test
40     public void createTest() throws Exception {
41
42         // Create an object for posting
43         Flight entry = new Flight("Paris", "Malaga", "Paris Airlines", LocalDate.of(2022, 05, 01),
44             BigDecimal.valueOf(15.99));
45         String entryAsJSON = mapper.writeValueAsString(entry);
46
47         // Create an object for checking the result
48         Flight result = new Flight(2L, "Paris", "Malaga", "Paris Airlines", LocalDate.of(2022, 05, 01),
49             BigDecimal.valueOf(15.99));
50         String resultAsJSON = mapper.writeValueAsString(result);
51
52         Mockito.when(service.create(entry)).thenReturn(result);
53
54         mvc.perform(post("/flight/create").contentType(MediaType.APPLICATION_JSON).content(entryAsJSON)
55             .andExpect(status().isCreated()).andExpect(content().json(resultAsJSON)));
56     }
57 }
```

FlightControllerUnitTest (18 Aug 2022 09:49:05)

Element	Coverage
FlightSpring	56.4 %
src/test/java	54.0 %
src/main/java	60.0 %
com.qa.main.services	0.0 %
com.qa.main.domain	75.8 %
com.qa.main	37.5 %
com.qa.main.exception	0.0 %
com.qa.main.controllers	100.0 %

Console | Problems | Declaration

terminated> FlightControllerUnitTest [JUnit] C:\Users\Mateusz.p2\poo\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_17.0.3.v20220515-1416\jre\bin\javaw.exe (18 Aug 2022, 09:49:01 - 09:49:05) [pid: 19704]

09:49:02.851 [main] INFO org.springframework.boot.test.context.SpringBootTestContextBootstrapper - Found @SpringBootConfiguration com.qa.main.FlightSpringApplication for test class com.qa.main.controllers.FlightControllerUnitTest

09:49:02.855 [main] DEBUG org.springframework.boot.test.autoconfigure.web.servlet.MockMvcTestContextBootstrapper - @TestExecutionListeners is not present for class [com.qa.main.controllers.FlightControllerUnitTest]: using default

09:49:02.855 [main] INFO org.springframework.boot.test.autoconfigure.web.servlet.MockMvcTestContextBootstrapper - Loaded default TestExecutionListener class names from location [META-INF/spring.factories]: [org.springframework...

Testing unit Service

Package Explorer JUnit X

Finished after 5.041 seconds

Runs: 5/5 Errors: 0 Failures: 0

> FlightServiceUnitTest [Runner: JUnit 5] (0.058 s)

Failure Trace

FlightServiceUnitTest.java

```
46 // Create an object for checking the result
47 List<Flight> result = new ArrayList<>();
48 result.add(new Flight(1L, "London", "Madrid", "Lot", LocalDate.of(2022, 01, 01), BigDecimal.valueOf(10.99)));
49
50 Mockito.when(repo.findAll()).thenReturn(result);
51
52 assertEquals(result, service.getAll());
53
54 ;
55 }
56
57 @Test
58 public void getIdByTest() {
59
60     long id = 1L;
61
62     // Create and object for checking the result
63     Flight result = new Flight(1L, "London", "Madrid", "Lot", LocalDate.of(2022, 01, 01),
64         BigDecimal.valueOf(10.99));
65     Mockito.when(repo.findById(id)).thenReturn(Optional.of(result));
66
67     assertEquals(result, service.getId(id));
68
69 }
70
71 @Test
72 public void updateByIdTest() {
73
74     long id = 1L;
75
76     Flight entry = new Flight("Paris", "Malaga", "Paris Airlines", LocalDate.of(2022, 05, 01),
77         BigDecimal.valueOf(15.99));
78     Flight existing = new Flight(1L, "London", "Madrid", "Lot", LocalDate.of(2022, 01, 01),
79         BigDecimal.valueOf(10.99));
80     Mockito.when(repo.findById(id)).thenReturn(Optional.of(existing));
81
82     Flight update = new Flight(1L, "Paris", "Malaga", "Paris Airlines", LocalDate.of(2022, 05, 01),
83         BigDecimal.valueOf(15.99));
84
85     Mockito.when(repo.saveAndFlush(update)).thenReturn(update);
86
87     assertEquals(update, service.updateById(id, entry));
88 }
```

Outline Coverage X

FlightServiceUnitTest (18 Aug 2022 10:06:34)

Element	Coverage
FlightSpring	42.2 %
> src/test/java	30.1 %
> src/main/java	67.9 %
> com.qa.main.domain	73.0 %
> com.qa.main.controllers	11.8 %
> com.qa.main	37.5 %
> com.qa.main.exception	0.0 %
> com.qa.main.services	100.0 %


Testing whole project

The screenshot displays an IDE interface with three main panels:

- Left Panel (JUnit Runner):** Shows the test execution results. It indicates that 16 tests ran successfully with 0 errors and 0 failures, completing in 7.955 seconds. A list of tests is shown, including `FlightServiceUnitTest` (0.033 s), `FlightSpringApplicationTests` (0.002 s), `FlightControllerIntegrationTest` (0.490 s), and `FlightControllerUnitTest` (0.047 s).
- Center Panel (FlightServiceUnitTest.java):** Displays the source code of the test class. The code includes imports for `org.junit.jupiter.api.Assertions` and `org.springframework.test`, and defines a `FlightServiceUnitTest` class with several test methods: `createTest`, `getAllTest`, and `getByIdTest`. The `createTest` method uses `Mockito` to mock the `FlightRepo` and `FlightService` to verify the creation of a flight entry. The `getAllTest` method verifies that the `FlightService` returns a list of flights. The `getByIdTest` method is partially visible at the bottom.
- Right Panel (Coverage):** Shows the code coverage report for the project. The report is titled "FlightSpring (18 Aug 2022 10:08:10)". It lists the elements of the project and their corresponding coverage percentages:

Element	Coverage
FlightSpring	95.0 %
src/main/java	84.4 %
com.qa.main.domain	77.0 %
com.qa.main	37.5 %
com.qa.main.exception	0.0 %
com.qa.main.controllers	100.0 %
com.qa.main.services	100.0 %
src/test/java	100.0 %
com.qa.main	100.0 %
com.qa.main.controllers	100.0 %
com.qa.main.services	100.0 %

Front-end v0.1




Create

Update

Delete

Id: 1 Departure: Brighton Arrival: Malaga Airlines: British Airlines Date: 2022-09-02 Price: 79.99					
Id: 5 Departure: Paris Arrival: Rzeszow Airlines: Lot Date: 2022-09-02 Price: 12.54					
Id: 6 Departure: Brighton Arrival: Malaga Airlines: Ryanair Date: 2022-09-16 Price: 22.99					
Id: 7 Departure: Leeds Arrival: London Airlines: Ryanair Date: 2022-02-02 Price: 12.99					

Front-end v0.2



Create

Update

Id: 1 Departure: Brighton Arrival: Malaga Airlines: British Airlines Date: 2022-09-02 Price: 79.99					Delete
Id: 5 Departure: Paris Arrival: Rzeszow Airlines: Lot Date: 2022-09-02 Price: 12.54					Delete

Front-end v0.3




Create

Id: 1 Departure: Paris Arrival: London Airlines: British Airlines Date: 2022-08-21 Price: 100.99					Update	Delete
Id: 5 Departure: New York Arrival: Madrid Airlines: Norwegian Date: 2022-08-02 Price: 55.43					Update	Delete

Front-end v0.4



Flights Spring Boot Project



Create

Id: 74	Departure: fdsafd	Arrival: fdasf	Airlines: fadsf	Date: 2022-08-13	Price: 11	Update	Delete
Id: 75	Departure: fdsafd	Arrival: fdasf	Airlines: fadsf	Date: 2022-08-13	Price: 11	Update	Delete
Id: 76	Departure: fdsafd	Arrival: fdasf	Airlines: fadsf	Date: 2022-08-13	Price: 11	Update	Delete
Id: 77	Departure: fdsafd	Arrival: fdasf	Airlines: fadsf	Date: 2022-08-13	Price: 11	Update	Delete
Id: 79	Departure: fdsafd	Arrival: fdasf	Airlines: fadsffda	Date: 2022-08-13	Price: 1111	Update	Delete
Id: 80	Departure: fdsafd	Arrival: fdasf	Airlines: fadsffda	Date: 2022-08-13	Price: 1111	Update	Delete
Id: 81	Departure: fdsafd	Arrival: fdasf	Airlines: fadsffda	Date: 2022-08-13	Price: 1111	Update	Delete
Id: 82	Departure: fdsafd	Arrival: fdasf	Airlines: fadsffda	Date: 2022-08-13	Price: 1111	Update	Delete
Id: 83	Departure: fdsafd	Arrival: fdasf	Airlines: fadsf	Date: 2022-08-13	Price: 11	Update	Delete
Id: 84	Departure: fdsafd	Arrival: fdasf	Airlines: fadsf	Date: 2022-08-13	Price: 11	Update	Delete
Id: 85	Departure: fdsafd	Arrival: fdasf	Airlines: fadsf	Date: 2022-08-13	Price: 11	Update	Delete
Id: 86	Departure: fdsafd	Arrival: fdasf	Airlines: fadsf	Date: 2022-08-13	Price: 11	Update	Delete
Id: 87	Departure: fdsafd	Arrival: fdasf	Airlines: fadsf	Date: 2022-08-13	Price: 11	Update	Delete
Id: 88	Departure: fdsafd	Arrival: fdasf	Airlines: fadsf	Date: 2022-08-13	Price: 11	Update	Delete
Id: 89	Departure: fdsafd	Arrival: fdasf	Airlines: fadsf	Date: 2022-08-13	Price: 11	Update	Delete

Swagger

flight-controller Flight Controller



POST /flight/create create

DELETE /flight/delete/{id} deleteById

GET /flight/getAll getAll

GET /flight/getById/{id} getById

PUT /flight/update/{id} updateById


```

[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/sonatype/aether/aether-util/1.7/aether-util-1.7.jar (108 kB at 1.4 MB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-artifact-transfer/0.12.0/maven-artifact-transfer-0.12.0.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/sonatype/aether/aether-spi/1.7/aether-spi-1.7.jar (14 kB at 119 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-common-artifact-filters/3.0.1/maven-common-artifact-filters-3.0.1.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-interpolation/1.14/plexus-interpolation-1.14.jar (61 kB at 898 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-shared-utils/3.1.0/maven-shared-utils-3.1.0.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/apache/maven/maven-artifact/3.0/maven-artifact-3.0.jar (52 kB at 657 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-artifact-transfer/0.12.0/maven-artifact-transfer-0.12.0.jar (120 kB at 1.8 MB/s)
[INFO] Downloading from https://repo.maven.apache.org/maven2/org/slf4j/slf4j-api/1.7.5/slf4j-api-1.7.5.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/ow2/asm/asm/8.0/asm-8.0.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-common-artifact-filters/3.0.1/maven-common-artifact-filters-3.0.1.jar (61 kB at 842 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/ow2/asm/asm-commons/8.0/asm-commons-8.0.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-shared-utils/3.1.0/maven-shared-utils-3.1.0.jar (164 kB at 2.2 MB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/ow2/asm/asm-tree/8.0/asm-tree-8.0.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/ow2/asm/asm/8.0/asm-8.0.jar (122 kB at 1.7 MB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/ow2/asm/asm-analysis/8.0/asm-analysis-8.0.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-classworlds/2.2.3/plexus-classworlds-2.2.3.jar (46 kB at 252 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/jdom/jdom2/2.0.6/jdom2-2.0.6.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/ow2/asm/asm-commons/8.0/asm-commons-8.0.jar (72 kB at 1.0 MB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-dependency-tree/3.0.1/maven-dependency-tree-3.0.1.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/ow2/asm/asm-tree/8.0/asm-tree-8.0.jar (53 kB at 862 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/uafer/jdependency/2.4.0/jdependency-2.4.0.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/slf4j/slf4j-api/1.7.5/slf4j-api-1.7.5.jar (26 kB at 153 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/ow2/asm/asm-util/8.0/asm-util-8.0.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/ow2/asm/asm-analysis/8.0/asm-analysis-8.0.jar (33 kB at 244 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/jdom/jdom2/2.0.6/jdom2-2.0.6.jar (305 kB at 2.6 MB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/com/google/guava/failureaccess/1.0.1/failureaccess-1.0.1.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/com/google/guava/guava/28.2-android/guava-28.2-android.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/uafer/jdependency/2.4.0/jdependency-2.4.0.jar (180 kB at 900 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/ow2/asm/asm-util/8.0/asm-util-8.0.jar (85 kB at 605 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/com/google/guava/listenablefuture/9999.0-empty-to-avoid-conflict-with-guava/listenablefuture-9999.0-empty-to-avoid-conflict-with-guava.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/checkerframework/checker-compat-qual/2.5.5/checker-compat-qual-2.5.5.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-dependency-tree/3.0.1/maven-dependency-tree-3.0.1.jar (37 kB at 153 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/com/google/guava/failureaccess/1.0.1/failureaccess-1.0.1.jar (4.6 kB at 36 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/com/google/errorprone/error_prone_annotations/2.3.4/error_prone_annotations-2.3.4.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/com/google/j2objc/j2objc-annotations/1.3/j2objc-annotations-1.3.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/com/google/guava/listenablefuture/9999.0-empty-to-avoid-conflict-with-guava/listenablefuture-9999.0-empty-to-avoid-conflict-with-guava.jar (2.2 kB at 11 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/apache/commons/commons-lang3/3.7/commons-lang3-3.7.jar
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/checkerframework/checker-compat-qual/2.5.5/checker-compat-qual-2.5.5.jar (5.9 kB at 27 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/com/google/j2objc/j2objc-annotations/1.3/j2objc-annotations-1.3.jar (8.8 kB at 45 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/com/google/errorprone/error_prone_annotations/2.3.4/error_prone_annotations-2.3.4.jar (14 kB at 58 kB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/org/apache/commons/commons-lang3/3.7/commons-lang3-3.7.jar (500 kB at 1.9 MB/s)
[INFO] Downloaded from https://repo.maven.apache.org/maven2/com/google/guava/guava/28.2-android/guava-28.2-android.jar (2.6 MB at 4.7 MB/s)
[INFO] Replacing main artifact with repackaged archive
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 22.780 s
[INFO] Finished at: 2022-08-19T01:25:30+01:00
[INFO] -----
[WARNING] The requested profile "pom.xml" could not be activated because it does not exist.

```

Running Jar file

```
Mateusz@DESKTOP-BF0B25C MINGW64 ~/Desktop/22JuneEnable3/Spring/FlightSpring
$ java -jar FlightSpring-0.0.1-SNAPSHOT.jar
```

[illegible]

```

2022-08-19 01:30:46.957 INFO 9048 --- [           main] com.qa.main.FlightSpringApplication : Starting FlightSpringApplication v0.0.1-SNAPSHOT using Java 18.0.1.1 on DESKTOP-BF0B2SC with PID 9048 (C:\Users\Mateusz\Desktop\22JuneEnable3\Spring\FlightSpring\FlightSpring-0.0.1-SNAPSHOT.jar started by Mateusz in C:\Users\Mateusz\Desktop\22JuneEnable3\Spring\FlightSpring)
2022-08-19 01:30:46.960 INFO 9048 --- [           main] com.qa.main.FlightSpringApplication : The following 1 profile is active: "prod"
2022-08-19 01:30:47.461 INFO 9048 --- [           main] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data JPA repositories in DEFAULT mode.
2022-08-19 01:30:47.515 INFO 9048 --- [           main] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repository scanning in 37 ms. Found 1 JPA repository interfaces.
2022-08-19 01:30:48.023 INFO 9048 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8080 (http)
2022-08-19 01:30:48.032 INFO 9048 --- [           main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2022-08-19 01:30:48.032 INFO 9048 --- [           main] org.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/9.0.65]
2022-08-19 01:30:48.099 INFO 9048 --- [           main] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2022-08-19 01:30:48.099 INFO 9048 --- [           main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 1091 ms
2022-08-19 01:30:48.212 INFO 9048 --- [           main] o.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing PersistenceUnitInfo [name: default]
2022-08-19 01:30:48.257 INFO 9048 --- [           main] org.hibernate.Version :

```


Risk Assessments Review

No.	Risk description	Impact description	Risk level	Responsible	Action plan	Incidents	Action taken
1	Bad organisation, double execution of work	Team will not cooperate and same story can be implemented multiple times	Medium	Project leader	Implement roles, set up Jira, and plan Sprints	None	
2	Project will not meet initial requirements	Team will be unable to provide code for required tasks	Medium	Developers	Set up documentation, set up user stories	None	
3	Project will not be made in agreed time	Team will be unable to provide a complete solution that could meet requirements	Medium	Developers	Ensure that nobody is overloaded, make a daily meetings to control amount of Story points left to be done	User stories left undone.	Implemented new unplanned Sprint
4	Hardware failure	Due to unpredicted circumstances a member of team could be left without tools to work	Low	Project leader	Check condition of hardware, run hardware tests to minimise risk	None	
5	Data leak	Confidential company information could be published or sold to competitors	Serious	Project leader / Developers	Do not leave your workspace unattended, do not talk about project in a public places	None	
6	Power fluctuation	A team could not produce digital solutions	Medium	Project leader	Reconsider installation of Uninterruptible Power Supply	None	
7	Malicious interference	Files and access to our databases and backups will be restricted	Low	Developers	Implement Firewall Do not reuse passwords	None	
8	Corruption of data	Files and progress done on coding can be lost	Serious	Developers	Ensure to implement MVP style of updates update everything to GitHub to create backup	None	
9	Budget deficit	Applications would be left undone and with errors	Low	Project leader	Consult all additional costs with client	None	
10	Client withdrawal	Client would not like to continue working with our team	Medium	Project owner	Make sure that client understands project and is committed to proceed	None	
11	Absent team member	A team member might be unavailable because of personal reasons	Serious	Project leader	Reduce stress at workplace implement remote working if necessary have some workforce in a backup	None	

Sprint review and retrospection

- Finished Spring Boot API
 - Finished front-end page
 - Finished testing
 - Further CSS to be implemented
-
- Coding went smoothly, small problems with LocalDate and BigDecimal
 - Achieved good testing coverage 84.4%
 - CSS taking way more time than other tasks
 - Javascript could be improved

Consultant Journey

I have learned:

- Spring Boot
- Javascript
- CSS
- HTML
- Mockito testing
- API
- Swagger
- Postman

Conclusions

- Interesting project to complete
 - Postman is useful tool in API testing
 - Spring Boot framework speeds up code writing
 - I am completing tasks in more efficient way
-
- We could implement multiple tables in database
 - We could write custom queries
 - We could make a better design for HTML page
 - We could make data verification at front-end level