

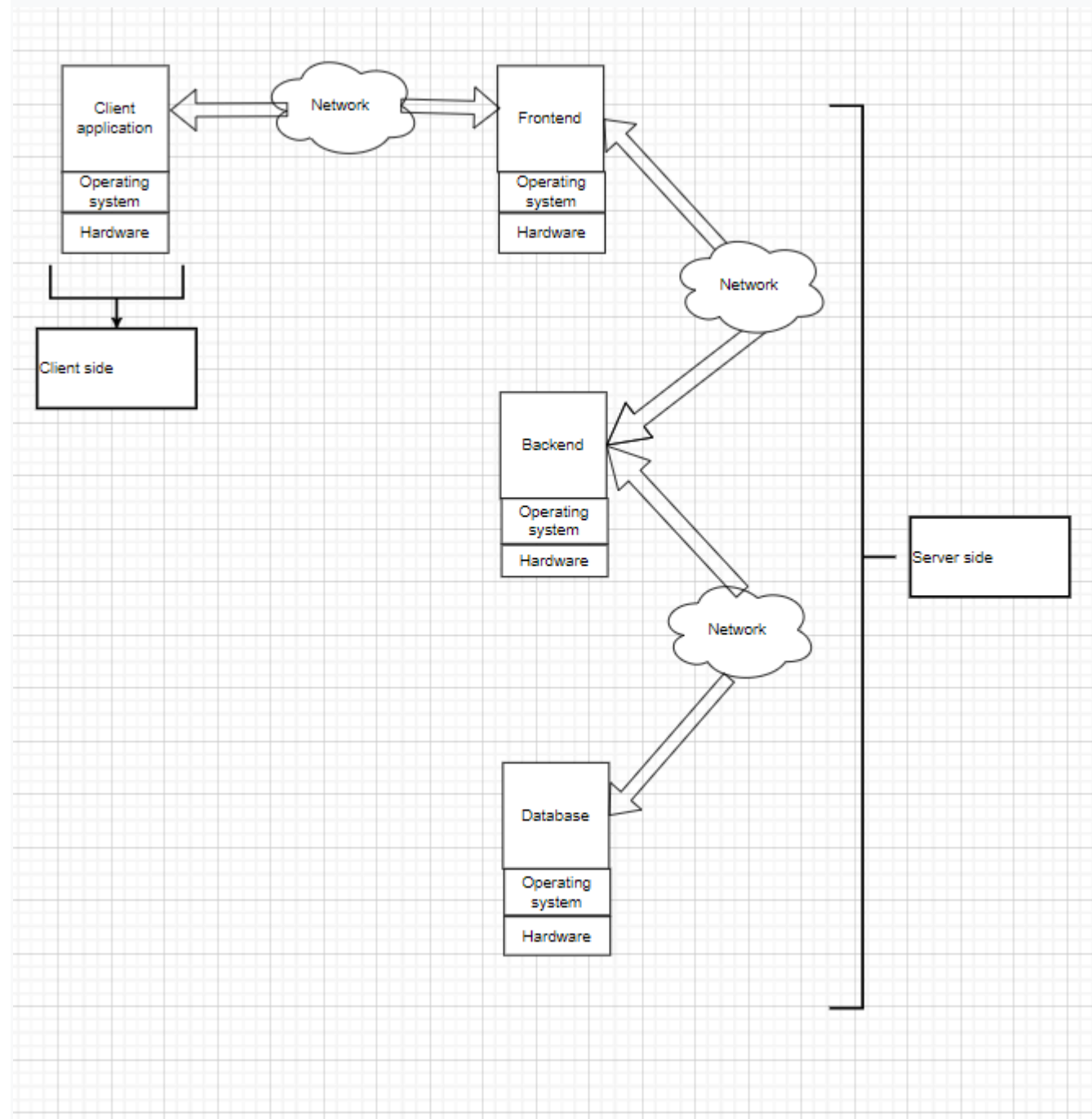
Task 1

Around the beginning of the second ten days of July a problem first appeared in the application. When a user tries to sign in to the application nothing happens. It's known the problem is on the server side. You don't know what is the application server-side architecture. But you have logs. Your task is to read logs and

1. Create a diagram describing the application server-side architecture (the same way it was done in the textbook)

We can use <https://app.diagrams.net/>

As we have 3 types of logs: frontend, backend, db. We have 3 -tier application



2. Find the log entries that refer to the issue in the log file(s) and supply your suggestion with a short text that describes why you think the log entries indicate the actual issue.

As it was written : The problem in the application can appear from 11 July. When a user tries to sign in to the application nothing happens. It's known the problem is on the server side.

From frontend log we can see such mistakes with login and password when user tries to sign in :

Jul 11 17:15:19 c7-sandbox npm[31824]: { login: 'root', password: '1234' } - **a user with such login and password**

Jul 11 17:15:19 c7-sandbox npm[31824]: (node:31835) UnhandledPromiseRejection**Warning**: Error: connect ECONNREFUSED 192.168.40.100:7080 - **Here we can see attempt to connect with server_ip:7080, but there is some problem. Maybe there is a mistake with some settings from server side.**

Jul 11 17:15:19 c7-sandbox npm[31824]: at TCPConnectWrap.afterConnect [as oncomplete] (net.js:1159:16)

Jul 11 17:15:19 c7-sandbox npm[31824]: (Use `node --trace-warnings ...` to show where the warning was created)

Jul 11 17:15:19 c7-sandbox npm[31824]: (node:31835) UnhandledPromiseRejection**Warning**: Unhandled promise rejection. This error originated either by throwing inside of an async function without a catch block, or b **We can see another warning. Maybe there is some operation that encountered an error.**

Jul 11 17:15:19 c7-sandbox npm[31824]: (node:31835) [DEP0018] Deprecation**Warning**: Unhandled promise rejections are deprecated. In the future, promise rejections that are not handled will terminate the Node.js pr

We can see another warning. Maybe there is some operation that encountered an error.

The situation is repeated again

Jul 11 17:15:27 c7-sandbox npm[31824]: { login: 'root', password: '1234' }

Jul 11 17:15:27 c7-sandbox npm[31824]: (node:31835) UnhandledPromiseRejection**Warning**: Error: connect ECONNREFUSED 192.168.40.100:7080

Jul 11 17:15:27 c7-sandbox npm[31824]: at TCPConnectWrap.afterConnect [as oncomplete] (net.js:1159:16)

Jul 11 17:15:27 c7-sandbox npm[31824]: (node:31835) UnhandledPromiseRejection**Warning**: Unhandled promise rejection. This error originated either by throwing inside of an async function without a catch block, or b

Jul 11 17:15:32 c7-sandbox npm[31824]: Cookies: [Object: null prototype] {}

The situation is repeated again

Jul 11 17:15:32 c7-sandbox npm[31824]: { login: 'root', password: '1234' }

Jul 11 17:15:32 c7-sandbox npm[31824]: (node:31835) UnhandledPromiseRejection**Warning**: Error: connect ECONNREFUSED **server_ip**:7080

Jul 11 17:15:32 c7-sandbox npm[31824]: at TCPConnectWrap.afterConnect [as oncomplete] (net.js:1159:16)

Jul 11 17:15:32 c7-sandbox npm[31824]: (node:31835) UnhandledPromiseRejection**Warning**: Unhandled promise rejection. This error originated either by throwing inside of an async function without a catch block, or b

We can see: 1) UnhandledPromiseRejection**Warning** ECONNREFUSED

2) UnhandledPromiseRejection**Warning**: Unhandled promise rejection.

3) Deprecation**Warning**: Unhandled promise rejections are deprecated

That is why user can not login to the application.

In summary, the log entries point towards a potential issue with connecting to a server at **server_ip** on port 7080, possibly related to authentication or a network problem. Additionally, the application has problems with promise rejections.

In other logs date is another, not july

Task 2

Experiment with your own instance of Java-FTB application on **server_ip**(ensure it's running beforehand, and start it if needed):

- **Change file access permissions on '/apps/java/ftb/\$USER/application.properties' to prevent anyone from accessing this file.**

```
chmod 000 /apps/java/ftb/$USER/application.properties
```

Restart the service. Verify if the application failed to run on server_ip:\$YOUR_PORT.

We can use command `ls -l` to see properties of the file

```
-rw-----. 1 ipapara qa 1416 Oct  4 21:15 application.properties
```

```
[ipapara@c7-backend ipapara]$ ls -l /apps/java/ftb/$USER
total 20
-rw-----. 1 ipapara qa 1416 Oct  4 21:15 application.properties
-rw-r--r--. 1 ipapara qa  274 Nov 30 21:16 FTB.2023-11-30.log
-rw-r--r--. 1 ipapara qa  391 Dec  7 18:42 FTB.2023-12-07.log
lrwxrwxrwx. 1 ipapara qa   37 Oct  4 21:15 ftb.jar -> /apps/scripts/template/ftb
-actual.jar
-rw-r--r--. 1 ipapara qa  647 Dec 10 11:43 FTB.log
-rwx-----. 1 ipapara qa  289 Oct  4 21:15 java-start-ftb.sh
[ipapara@c7-backend ipapara]$
```

We change properties of this file with this command : `chmod 000 /apps/java/ftb/$USER/application.properties`.

Now we can see that the properties were changed:

```
-----. 1 ipapara qa 1416 Oct  4 21:15 application.properties
```

```
[ipapara@c7-backend ipapara]$ ls -l /apps/java/ftb/$USER
total 20
-----. 1 ipapara qa 1416 Oct  4 21:15 application.properties
-rw-r--r--. 1 ipapara qa  274 Nov 30 21:16 FTB.2023-11-30.log
```

We can Restart the service

```
sudo systemctl stop java-ftb.$USER
```

```
sudo systemctl start java-ftb.$USER
```

Or we can use command `restart`

We can see that now the application can not run, because it does not have enough rights: even can not read or write

```
[ipapara@c7-backend ipapara]$ less FTB.log | grep "warn"
[ipapara@c7-backend ipapara]$ less FTB.log | grep "10.12"
10.12.2023 11:01:04.193 [http-nio-8108-exec-1] INFO c.a.f.c.MainController - Ola-ola-ola-ola, somebody is going to login! Probably...
10.12.2023 11:43:44.647 [http-nio-8108-exec-3] INFO c.a.f.c.MainController - Navigating to the page to verify bookings
10.12.2023 11:43:44.808 [http-nio-8108-exec-6] INFO c.a.f.c.MainController - Ola-ola-ola-ola, somebody is going to login! Probably...
10.12.2023 11:43:46.254 [http-nio-8108-exec-5] INFO c.a.f.c.MainController - About to show the search flights page
10.12.2023 11:43:46.583 [http-nio-8108-exec-8] INFO c.a.f.c.MainController - Ola-ola-ola-ola, somebody is going to login! Probably...
10.12.2023 12:02:58.118 [SpringApplicationShutdownHook] INFO o.s.o.j.LocalContainerEntityManagerFactoryBean - Closing JPA EntityManagerFactory for persistence unit 'default'
10.12.2023 12:02:58.119 [SpringApplicationShutdownHook] INFO c.z.h.HikariDataSource - HikariPool-1 - Shutdown initiated...
10.12.2023 12:02:58.123 [SpringApplicationShutdownHook] INFO c.z.h.HikariDataSource - HikariPool-1 - Shutdown completed.
10.12.2023 12:03:09.805 [main] ERROR o.s.b.SpringApplication - Application run failed
```



This site can't be reached

- Than we fix this issue by returning the permissions to the original state:

```
chmod 700 /apps/java/ftb/$USER/application.properties
```

After changes and restarting all is ok

```
10.12.2023 12:14:41.101 [background-preinit] INFO o.h.v.i.util.Version - HV000001: Hibernate Validator 6.2.3.Final
10.12.2023 12:14:41.118 [main] INFO c.a.f.FlighttticketbookingApplication - Starting FlighttticketbookingApplication v0.0.95-SNAPSHOT using Java 17.0.9 on c7-backend with PID 14712 (/apps/sc
ripts/template/ftb-jars/ftb-0.0.9.jar started by ipapara in /apps/java/ftb/ipapara)
10.12.2023 12:14:41.118 [main] INFO c.a.f.FlighttticketbookingApplication - No active profile set, falling back to 1 default profile: "default"
10.12.2023 12:14:41.744 [main] INFO o.s.d.r.c.RepositoryConfigurationDelegate - Bootstrapping Spring Data JPA repositories in DEFAULT mode.
10.12.2023 12:14:41.786 [main] INFO o.s.d.r.c.RepositoryConfigurationDelegate - Finished Spring Data repository scanning in 37 ms. Found 6 JPA repository interfaces.
10.12.2023 12:14:42.439 [main] INFO o.s.b.w.e.t.TomcatWebServer - Tomcat initialized with port(s): 8108 (http)
10.12.2023 12:14:42.446 [main] INFO o.a.c.h.Http11NioProtocol - Initializing ProtocolHandler ["http-nio-8108"]
10.12.2023 12:14:42.446 [main] INFO o.a.c.c.StandardService - Starting service [Tomcat]
10.12.2023 12:14:42.446 [main] INFO o.a.c.c.StandardEngine - Starting Servlet engine: [Apache Tomcat/9.0.65]
10.12.2023 12:14:42.488 [main] INFO o.a.c.c.C.[.[./] - Initializing Spring embedded WebApplicationContext
10.12.2023 12:14:42.488 [main] INFO o.s.b.w.s.c.ServletWebServerApplicationContext - Root WebApplicationContext: initialization completed in 1169 ms
10.12.2023 12:14:42.607 [main] INFO o.h.j.i.u.LogHelper - HHH000204: Processing PersistenceUnitInfo [name: default]
10.12.2023 12:14:42.638 [main] INFO o.hibernate.Version - HHH0000412: Hibernate ORM core version 5.6.10.Final
10.12.2023 12:14:42.738 [main] INFO o.h.a.common.Version - HCANNO00001: Hibernate Commons Annotations [5.1.2.Final]
10.12.2023 12:14:42.801 [main] INFO c.z.h.HikariDataSource - HikariPool-1 - Starting...
10.12.2023 12:14:42.927 [main] INFO c.z.h.HikariDataSource - HikariPool-1 - Start completed.
10.12.2023 12:14:42.936 [main] INFO o.h.dialect.Dialect - HHH000400: Using dialect: org.hibernate.dialect.MySQL8Dialect
10.12.2023 12:14:43.718 [main] INFO o.h.e.t.j.p.i.JtaPlatformInitiator - HHH000490: Using JtaPlatform implementation: [org.hibernate.engine.transaction.jta.platform.internal.NoJtaPlatform]
10.12.2023 12:14:43.723 [main] INFO o.s.o.j.LocalContainerEntityManagerFactoryBean - Initialized JPA EntityManagerFactory for persistence unit 'default'
10.12.2023 12:14:44.113 [main] INFO c.a.f.FlighttticketbookingApplication -
10.12.2023 12:14:44.257 [main] INFO c.a.f.FlighttticketbookingApplication -
10.12.2023 12:14:44.258 [main] INFO c.a.f.FlighttticketbookingApplication -
```

```
10.12.2023 12:14:45.084 [main] INFO o.s.b.a.w.s.WelcomePageHandlerMapping - Adding welcome page template: index
10.12.2023 12:14:45.848 [main] INFO o.a.c.h.Http11NioProtocol - Starting ProtocolHandler ["http-nio-8108"]
10.12.2023 12:14:45.861 [main] INFO o.s.b.w.e.t.TomcatWebServer - Tomcat started on port(s): 8108 (http) with context path ''
10.12.2023 12:14:45.872 [main] INFO c.a.f.FlighttticketbookingApplication - Started FlighttticketbookingApplication in 5.055 seconds (JVM running for 5.46)
```

Home Flights Search Flight Verify Booking

Login

Search a Flight

From

To

Departure Time

Dallas Love Field

Dallas Love Field

mm/dd/yyyy

Task 3

Continue the experimenting with the FTB service:

1. Using a text editor (f.e. nano) Change the MySQL port in "application.properties" configuration file from 3306 to 3307, then restart the service. Example:

```
[ipapara@c7-backend ~]$ nano /apps/java/ftb/$USER/application.properties
```

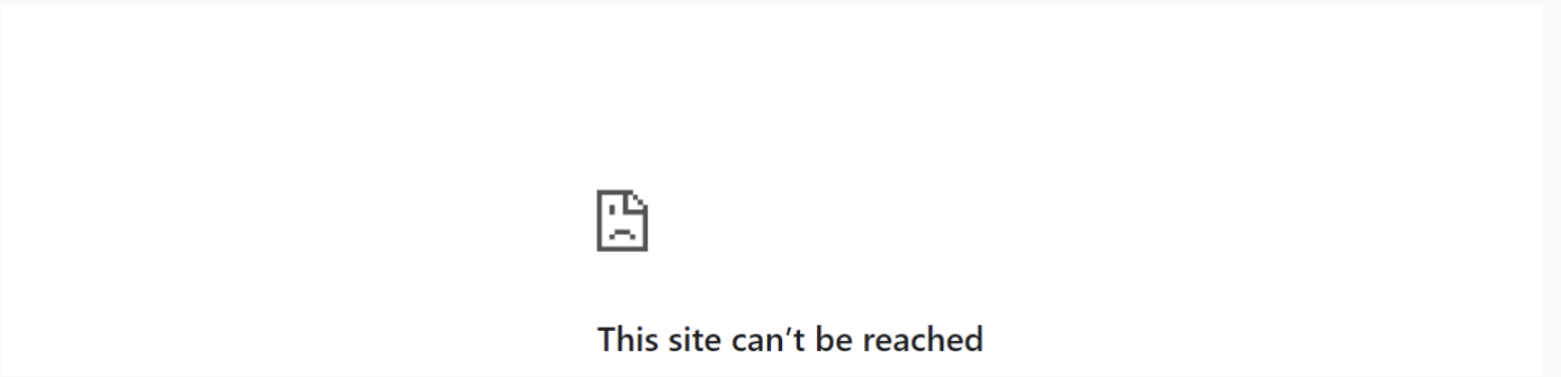
```
[ipapara@c7-backend ~]$ less /apps/java/ftb/$USER/application.properties
```

lipapara@c7-backend ~]\$ sudo systemctl restart java-ftb.\$USER

```
# =====
# APPLICATION PROPERTIES
# =====
server.port=8108
# =====
# = Thymeleaf configurations (ThymeleafAutoConfiguration)
# =====
spring.thymeleaf.mode=HTML
spring.thymeleaf.cache=false
spring.thymeleaf.encoding=UTF-8
# =====
# = DATA SOURCE
# =====
##Using MySQL database
spring.datasource.url=jdbc:mysql://192.168.40.150:3307/ftb_ipapara?allowPublicKeyRetrieval=true&useSSL=false&useLegacyDatetimeCode=false&serverTimezone=UTC
spring.datasource.username=dbipapara
spring.datasource.password=e109ee8b71
# =====
# = JPA / HIBERNATE
# =====
spring.jpa.show-sql=true
spring.jpa.hibernate.ddl-auto=update
spring.jpa.hibernate.naming.implicit-strategy=org.hibernate.boot.model.naming.ImplicitNamingStrategyJpaCompliantImpl
spring.jpa.properties.hibernate.dialect=org.hibernate.dialect.MySQL8Dialect
# =====
# Sources of Documentation
# =====
# https://docs.spring.io/spring-boot/docs/current/reference/html/common-application-properties.html
# https://www.thymeleaf.org/doc/tutorials/3.0/usingthymeleaf.html
server.error.whitelabel.enabled=false
# =====
# Impediment
# =====
impediment.delays=true
/apps/java/ftb/ipapara/application.properties (END)
```

2. Look at its recent log messages and find out which lines can point you to connectivity issues

As we can see the application does not work again . Because we changed the port in the file with settings for this application.



3. Than we fixed it with 3306 port again and , then restart

```
[ipapara@c7-backend ipapara]$ nano /apps/java/ftb/$USER/application.properties
[ipapara@c7-backend ipapara]$ sudo systemctl restart java-ftb.$USER
[ipapara@c7-backend ipapara]$
```

4. We can see logs with successful restart results

```
10.12.2023 18:00:18.384 [background-preinit] INFO o.h.v.i.util.Version - HV000001: Hibernate Validator 6.2.3.Final
10.12.2023 18:00:18.397 [main] INFO c.a.f.FlighttticketbookingApplication - Starting FlighttticketbookingApplication v0.0.95-SNAPSHOT using Java 17.0.9 on c7-backend with PID 17492 (/apps/sc
ripts/template/ftb-jars/ftb-0.0.9.jar started by ipapara in /apps/java/ftb/ipapara)
10.12.2023 18:00:18.398 [main] INFO c.a.f.FlighttticketbookingApplication - No active profile set, falling back to 1 default profile: "default"
10.12.2023 18:00:19.025 [main] INFO o.s.d.r.c.RepositoryConfigurationDelegate - Bootstrapping Spring Data JPA repositories in DEFAULT mode.
10.12.2023 18:00:19.072 [main] INFO o.s.d.r.c.RepositoryConfigurationDelegate - Finished Spring Data repository scanning in 41 ms. Found 6 JPA repository interfaces.
10.12.2023 18:00:19.720 [main] INFO o.s.b.w.e.t.TomcatWebServer - Tomcat initialized with port(s): 8108 (http)
10.12.2023 18:00:19.731 [main] INFO o.a.c.h.Http11NioProtocol - Initializing ProtocolHandler ["http-nio-8108"]
10.12.2023 18:00:19.732 [main] INFO o.a.c.c.StandardService - Starting service [Tomcat]
10.12.2023 18:00:19.732 [main] INFO o.a.c.c.StandardEngine - Starting Servlet engine: [Apache Tomcat/9.0.65]
```

10.12.2023 18:00:22.025 [main] INFO o.s.s.w.DefaultSecurityFilterChain - Will not secure Ant [pattern='/img/**']

10.12.2023 18:00:22.054 [main] INFO o.s.s.w.DefaultSecurityFilterChain - Will secure any request with [org.springframework.security.web.session.DisableEncodeUrlFilter@48268eec, org.springframework.security.web.context.request.async.WebAsyncManagerIntegrationFilter@69a024a0, org.springframework.security.web.context.SecurityContextPersistenceFilter@420a8042, org.springframework.security.web.header.HeaderWriterFilter@251c4280, org.springframework.security.web.authentication.logout.LogoutFilter@168ad26f, org.springframework.security.web.authentication.UsernamePasswordAuthenticationFilter@1e3f0aea, org.springframework.security.web.authentication.www.BasicAuthenticationFilter@8054fe2, org.springframework.security.web.savedrequest.RequestCacheAwareFilter@5921b93c, org.springframework.security.web.servletapi.SecurityContextHolderAwareRequestFilter@3dce6dd8, org.springframework.security.web.authentication.AnonymousAuthenticationFilter@4b0c29, org.springframework.security.web.session.SessionManagementFilter@79a13920, org.springframework.security.web.access.ExceptionTranslationFilter@7da635c0, org.springframework.security.web.access.intercept.FilterSecurityInterceptor@2401856]

10.12.2023 18:00:22.191 [main] INFO o.s.b.a.w.s.WelcomePageHandlerMapping - Adding welcome page template: index

10.12.2023 18:00:22.988 [main] INFO o.a.c.h.Http11NioProtocol - Starting ProtocolHandler ["http-nio-8108"]

10.12.2023 18:00:22.999 [main] INFO o.s.b.w.e.t.TomcatWebServer - Tomcat started on port(s): 8108 (http) with context path ''

10.12.2023 18:00:23.023 [main] INFO c.a.f.FlightticketbookingApplication - Started FlightticketbookingApplication in 4.908 seconds (JVM running for 5.355)