Lab1: Code Explanation

This document gives step-by-step guide to finish Lab1.

Lab1 covers:

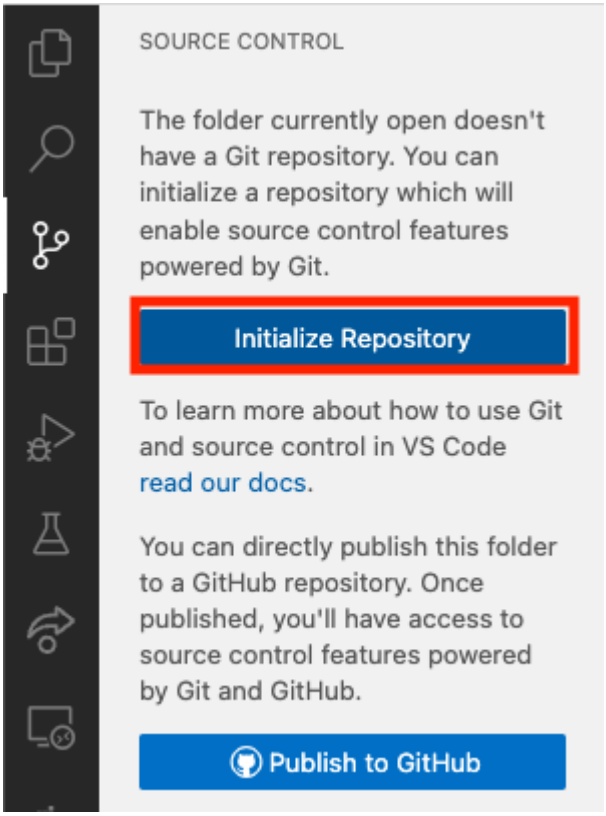
- Download recommended code assets.
- Explore the example `modresrots` application
- Explain `modresrots` application.

1. Code Asset Download

Download and unzip the `modresorts-twas-j8.zip` file from the box shared folder.

Open the `modresorts-twas-j8` folder in VScode.

> **Note:** We recommend to *'Initialize Repository'* to enable source control features and keep track of your changes. Commit all the new changes but you don't need to publish the branch.



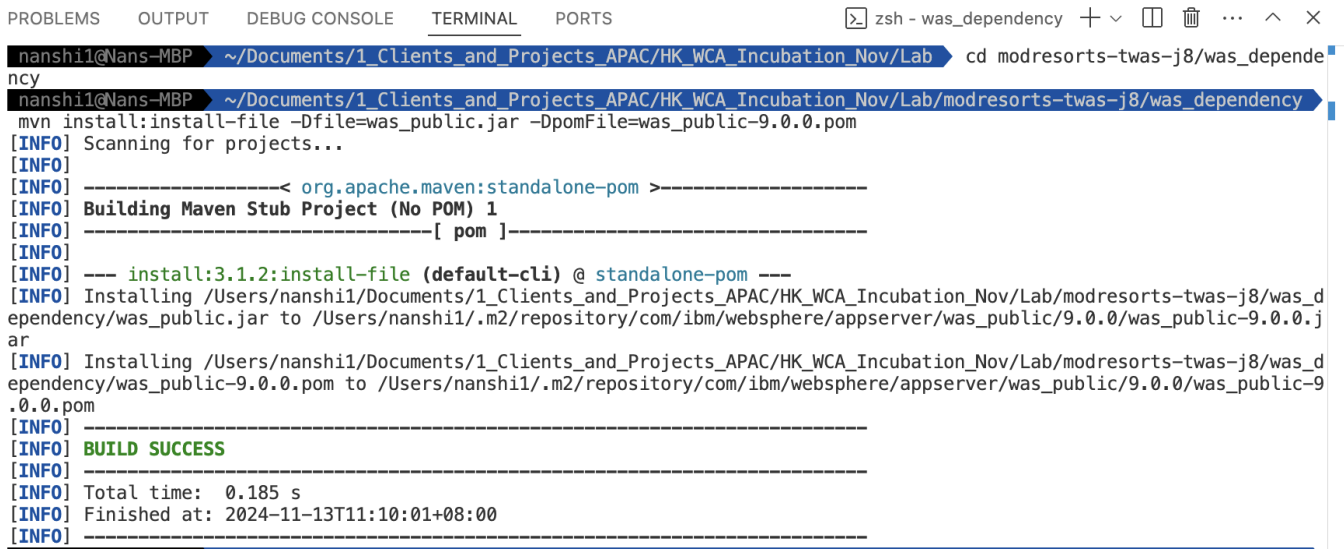
2. Build Application Project

- Open a terminal, and go to your project folder, and navigate to `was_dependency` folder.

```
cd <your-path>/modresorts-twas-j8/was_dependency
```

- Once inside the folder, run the following command to build project:

```
mvn install:install-file -Dfile=was_public.jar -DpomFile=was_public-9.0.0.pom
```

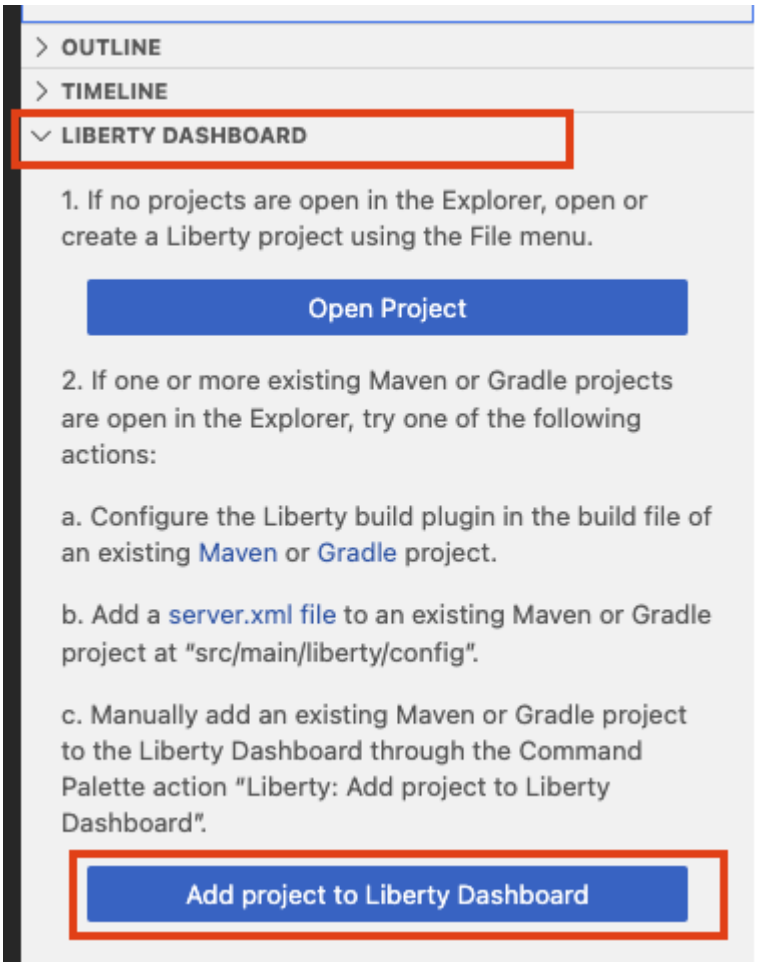


For Windows users, you might need to give full path for the build files `was_public.jar` and `was_public-9.0.0.pom`.

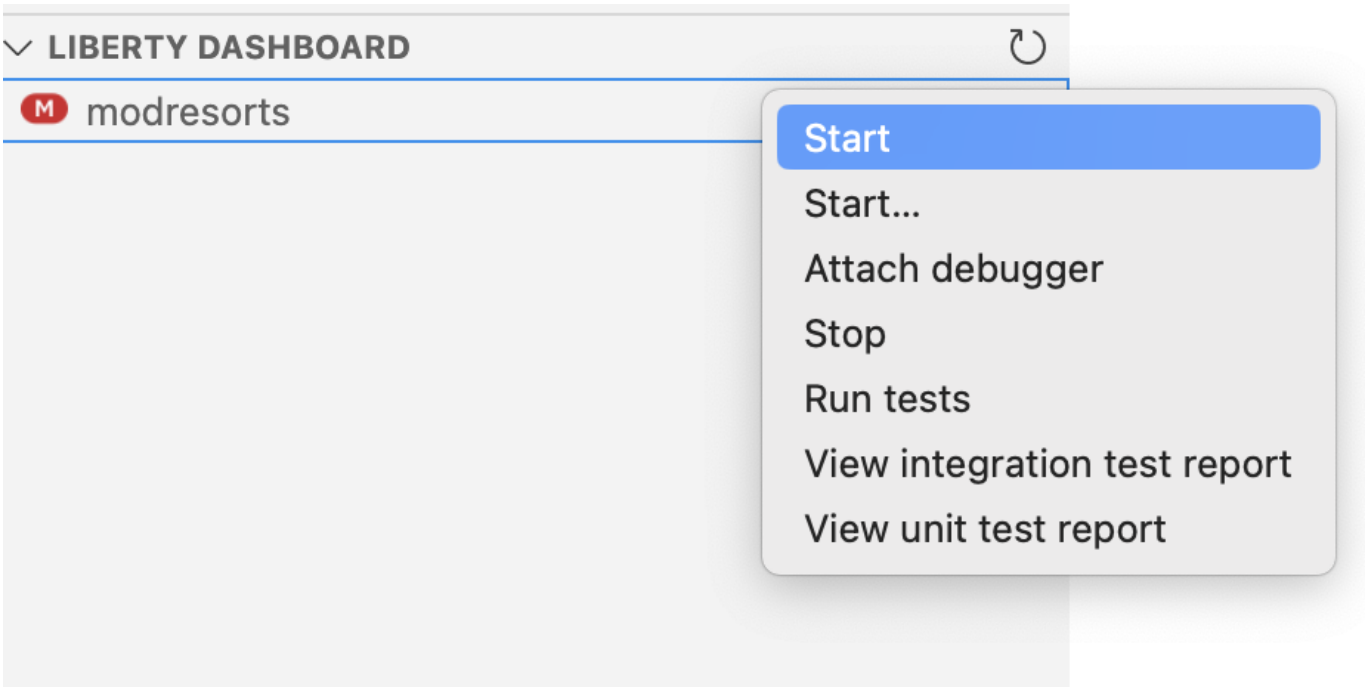
```
mvn install:install-file -Dfile=C:\Users\Administrator.CE-APAC-WIND202\Documents\wca4ej-workshop\modresorts-twas-j8\was_dependency\was_public.jar -DpomFile=C:\Users\Administrator.CE-APAC-WIND202\Documents\wca4ej-workshop\modresorts-twas-j8\was_dependency\was_public-9.0.0.pom
```

3. View Liberty App

After you installed LibertyTools from VSCode marketplace, there should be a Liberty Dashboard section in your explorer. Click `Add project to Liberty Dashboard` and put the path to the `modresort-twas-j8` folder (this would be automatic if you open in this project).



Once you selected the right project, a `modresrots` app will show up. Right click on the app to start.

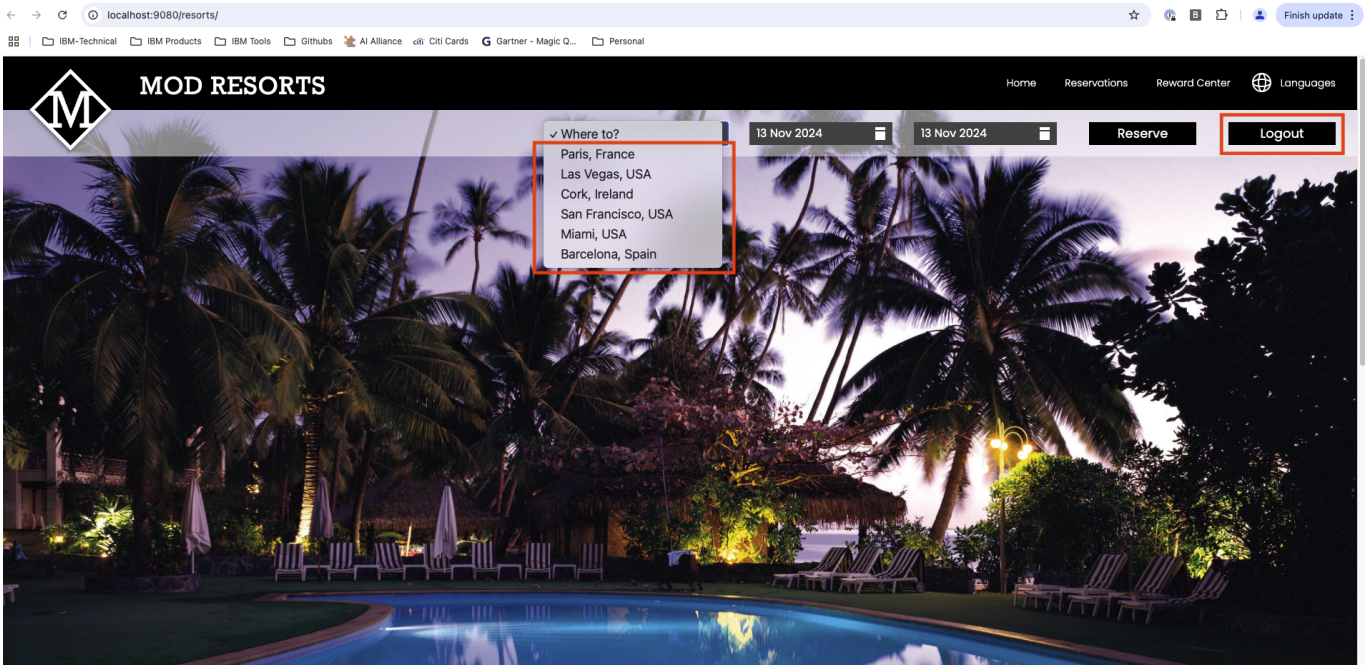


VSCode will go through downloading required packages, which you can see in terminal.

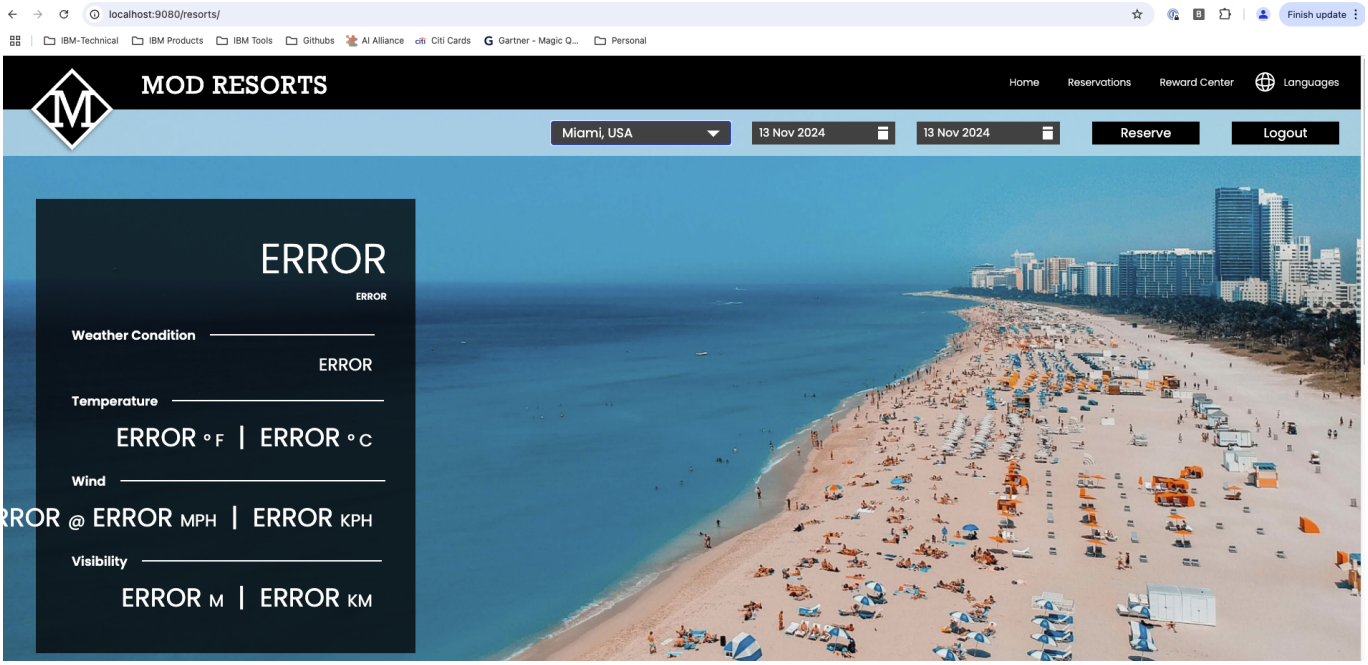
```
PROBLEMS 28  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

[INFO] ********************************************************************************
[INFO] *    Liberty is running in dev mode.
[INFO] *        Automatic generation of features: [ Off ]
[INFO] *        h - see the help menu for available actions, type 'h' and press Enter.
[INFO] *        q - stop the server and quit dev mode, press Ctrl-C or type 'q' and press Enter.
[INFO] *
[INFO] *    Liberty server port information:
[INFO] *        Liberty server HTTP port: [ 9080 ]
[INFO] *        Liberty debug port: [ 7777 ]
[INFO] ********************************************************************************
Note: Some input files use or override a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
Note: Some input files use or override a deprecated API that is marked for removal.
Note: Recompile with -Xlint:removal for details.
Note: /Users/nanshi1/Documents/1_Clients_and_Projects_APAC/HK_WCA_Incubation_Nov/Lab/modresorts-twas-j8/src/main/java/com/acme/modres/WeatherServlet.java uses unchec
ked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
[INFO] Source compilation was successful.
[INFO] [AUDIT   ] CWWKT0017I: Web application removed (default_host): http://localhost:9080/resorts/
[INFO] [AUDIT   ] CWWKZ0009I: The application modresorts-2.0.0 has stopped successfully.
[INFO] [AUDIT   ] CWWKT0016I: Web application available (default_host): http://localhost:9080/resorts/
[INFO] [AUDIT   ] CWWKZ0003I: The application modresorts-2.0.0 updated in 0.062 seconds.
```

Once the app started, you can get the url (in my case `http://localhost:9080/resorts/`) and open in your browser to checkout the web app.

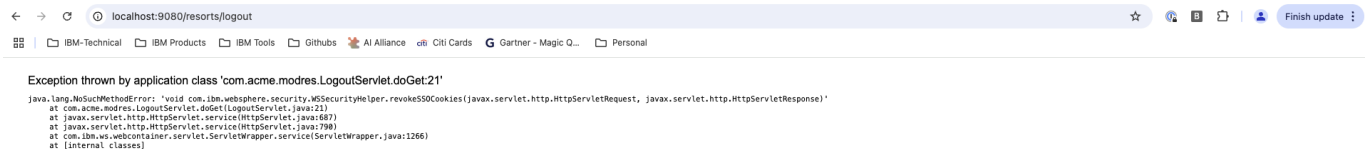
[IMPORTANT] Because we are running this application using Liberty in Java21, while this application is built for WebSphere in Java8, even though the application started successfully, **there are 2 places that have error because of this migration + upgrade**.



The first one, if you click the `Where to?` dropdown and select any location, you will find the location information module showing errors.



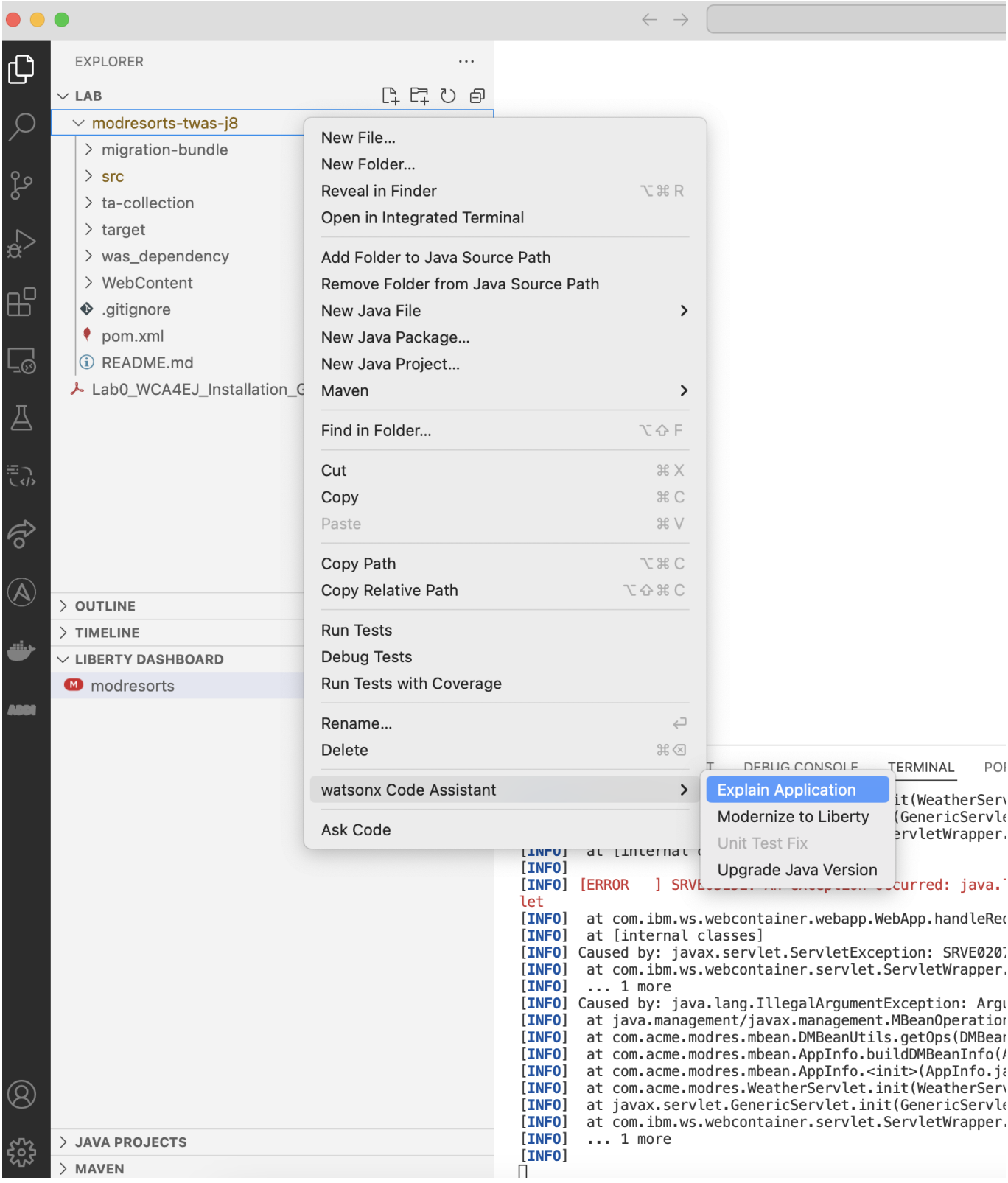
The Second one, the `Logout` buttom does not work if you click on it.



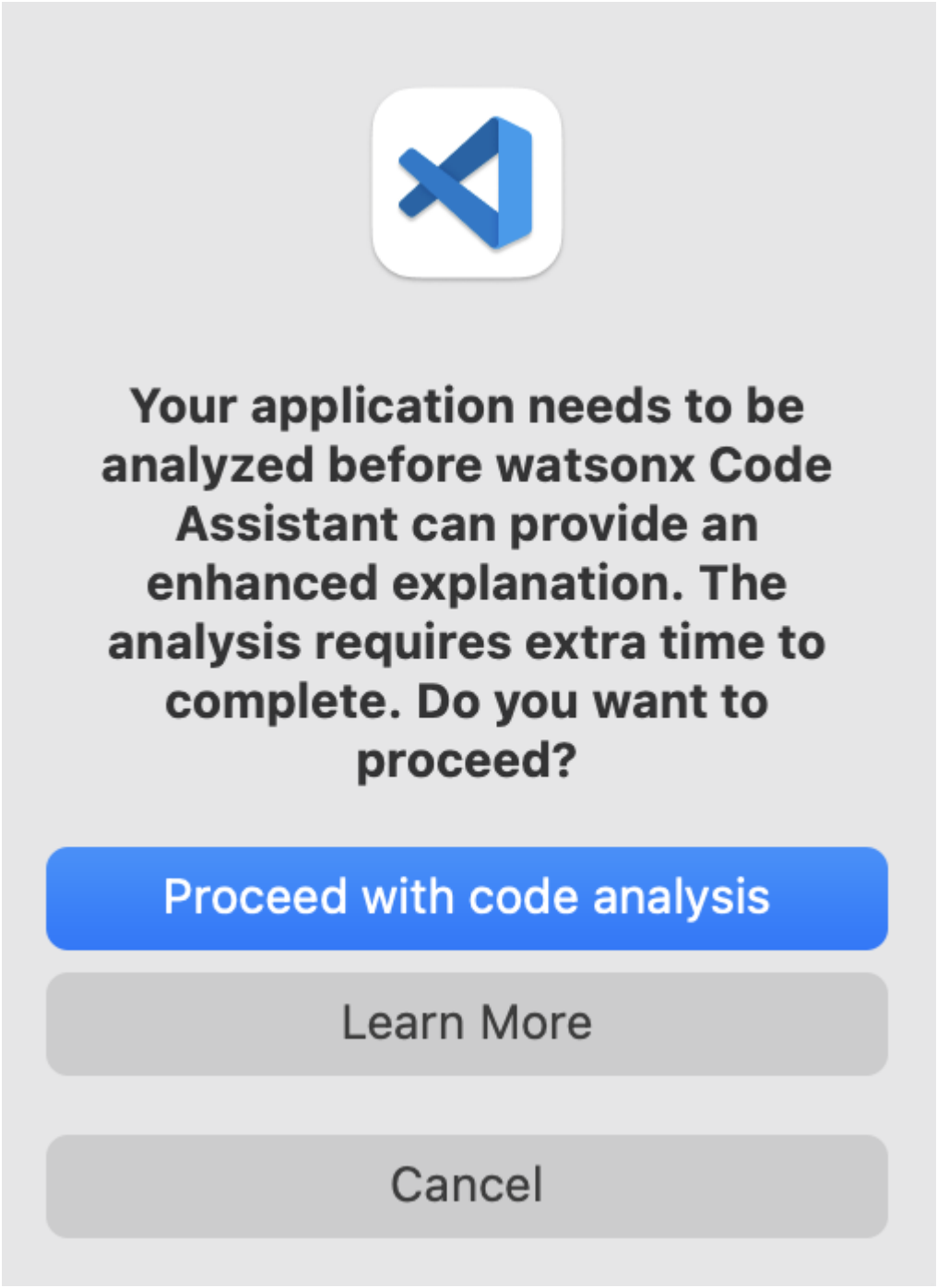
We will **fix these errors** in the later labs.

4. Explain Project Code

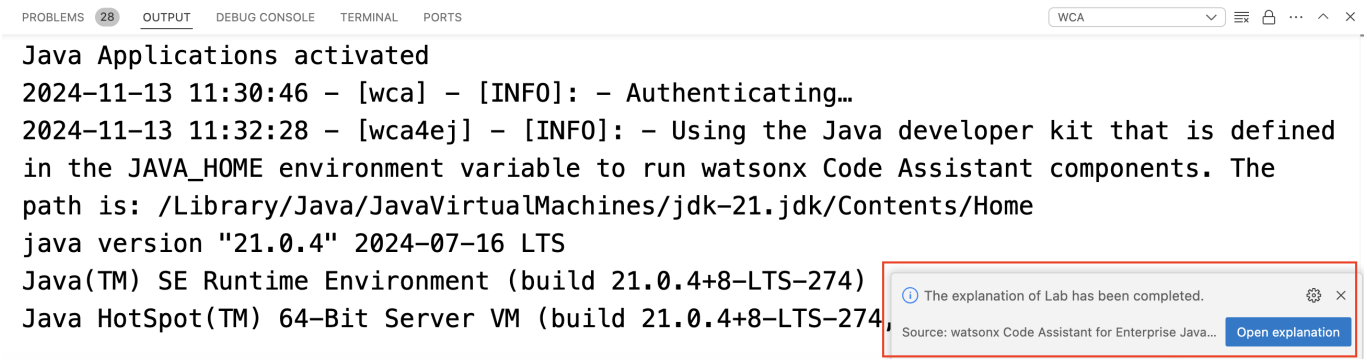
To understand the whole project, right click on the `modresorts-twas-j8` folder and select `watsonx Code Assistant` - `Explain Application`.



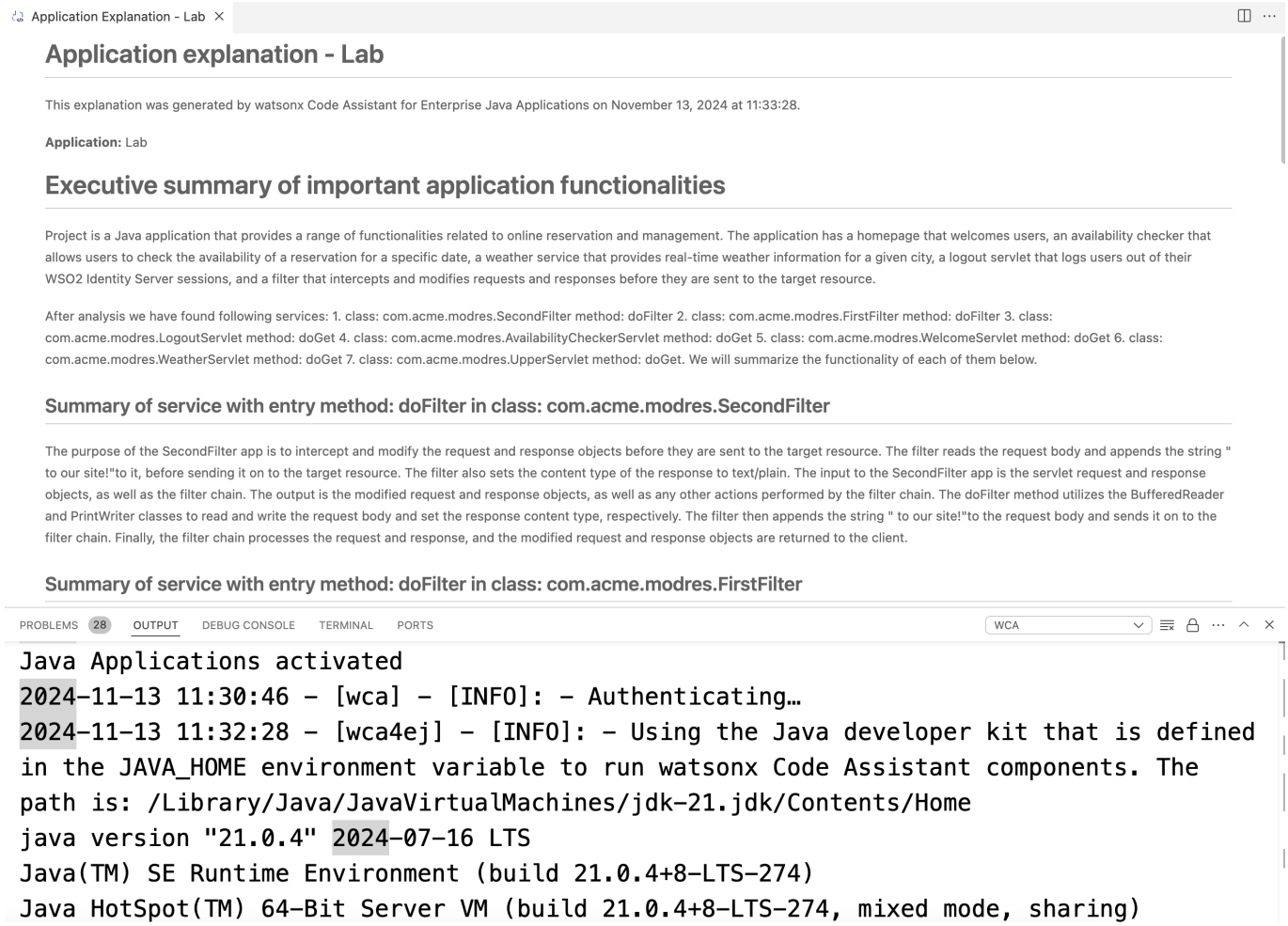
VSCode will prompt you that the process takes extra time. Click `Proceed with code analysis`.



The analysis might take 1-2 minutes to finish and a prompt will show up in the bottom right cornor.



Now we can open the report and read through the details.


Application Explanation - Lab
Application explanation - Lab
This explanation was generated by watsonx Code Assistant for Enterprise Java Applications on November 13, 2024 at 11:33:28.
Application: Lab
Executive summary of important application functionalities
Project is a Java application that provides a range of functionalities related to online reservation and management. The application has a homepage that welcomes users, an availability checker that allows users to check the availability of a reservation for a specific date, a weather service that provides real-time weather information for a given city, a logout servlet that logs users out of their WSO2 Identity Server sessions, and a filter that intercepts and modifies requests and responses before they are sent to the target resource.
After analysis we have found following services: 1. class: com.acme.modres.SecondFilter method: doFilter 2. class: com.acme.modres.FirstFilter method: doFilter 3. class: com.acme.modres.LogoutServlet method: doGet 4. class: com.acme.modres.AvailabilityCheckerServlet method: doGet 5. class: com.acme.modres.WelcomeServlet method: doGet 6. class: com.acme.modres.WeatherServlet method: doGet 7. class: com.acme.modres.UpperServlet method: doGet. We will summarize the functionality of each of them below.
Summary of service with entry method: doFilter in class: com.acme.modres.SecondFilter
The purpose of the SecondFilter app is to intercept and modify the request and response objects before they are sent to the target resource. The filter reads the request body and appends the string " to our site!"to it, before sending it on to the target resource. The filter also sets the content type of the response to text/plain. The input to the SecondFilter app is the servlet request and response objects, as well as the filter chain. The output is the modified request and response objects, as well as any other actions performed by the filter chain. The doFilter method utilizes the BufferedReader and PrintWriter classes to read and write the request body and set the response content type, respectively. The filter then appends the string " to our site!"to the request body and sends it on to the filter chain. Finally, the filter chain processes the request and response, and the modified request and response objects are returned to the client.
Summary of service with entry method: doFilter in class: com.acme.modres.FirstFilter
PROBLEMS 28
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
WCA
Java Applications activated
2024-11-13 11:30:46 - [wca] - [INFO]: - Authenticating…
2024-11-13 11:32:28 - [wca4ej] - [INFO]: - Using the Java developer kit that is defined in the JAVA_HOME environment variable to run watsonx Code Assistant components. The path is: /Library/Java/JavaVirtualMachines/jdk-21.jdk/Contents/Home
java version "21.0.4" 2024-07-16 LTS
Java(TM) SE Runtime Environment (build 21.0.4+8-LTS-274)
Java HotSpot(TM) 64-Bit Server VM (build 21.0.4+8-LTS-274, mixed mode, sharing)