

Application Explanation Lab

이 문서는 Application Explanation 을 완료하기 위한 단계별 가이드를 제공합니다.

Application Explanation Lab covers:

- 깃 허브에서 제공된 코드를 다운로드 받아 주세요.
- `modresrots` 애플리케이션을 살펴봐 주세요.
- `modresrots` 애플리케이션 설명에 대해 알아보세요.

1. Code Asset Download

로컬 환경에 [GitHub repository](#)를 clone 해 주세요.

2. Build Application Project

- 터미널을 열고 프로젝트 폴더로 가주세요. 이후 `was_dependency` 를 찾아 가주세요

```
cd <your-path>/wca4ej-workshop/modresorts-twaz-j8/was_dependency
```

- 해당 폴더에서 다음 커맨드를 이용하여 프로젝트를 빌드 해 주세요

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

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
zsh - was_dependency + ~ □ ⚡ ... ^ ×
nanshi1@Nans-MBP ~ ~/Documents/1_Clients_and_Projects_APAC/HK_WCA_Incubation_Nov/Lab cd modresorts-twaz-j8/was_dependency
nanshi1@Nans-MBP ~ ~/Documents/1_Clients_and_Projects_APAC/HK_WCA_Incubation_Nov/Lab/modresorts-twaz-j8/was_dependency
mvn install:install-file -Dfile=was_public.jar -DpomFile=was_public-9.0.0.pom
[INFO] Scanning for projects...
[INFO]
[INFO] -----< org.apache.maven:standalone-pom >-----
[INFO] Building Maven Stub Project (No POM) 1
[INFO] [ pom ]
[INFO]
[INFO] --- install:3.1.2:install-file (default-cli) @ standalone-pom ---
[INFO] Installing /Users/nanshi1/Documents/1_Clients_and_Projects_APAC/HK_WCA_Incubation_Nov/Lab/modresorts-twaz-j8/was_dependency/was_public.jar to /Users/nanshi1/.m2/repository/com/ibm/websphere/appserver/was_public/9.0.0/was_public-9.0.0.jar
[INFO] Installing /Users/nanshi1/Documents/1_Clients_and_Projects_APAC/HK_WCA_Incubation_Nov/Lab/modresorts-twaz-j8/was_dependency/was_public-9.0.0.pom to /Users/nanshi1/.m2/repository/com/ibm/websphere/appserver/was_public/9.0.0/was_public-9.0.0.pom
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 0.185 s
[INFO] Finished at: 2024-11-13T11:10:01+08:00
[INFO]
```

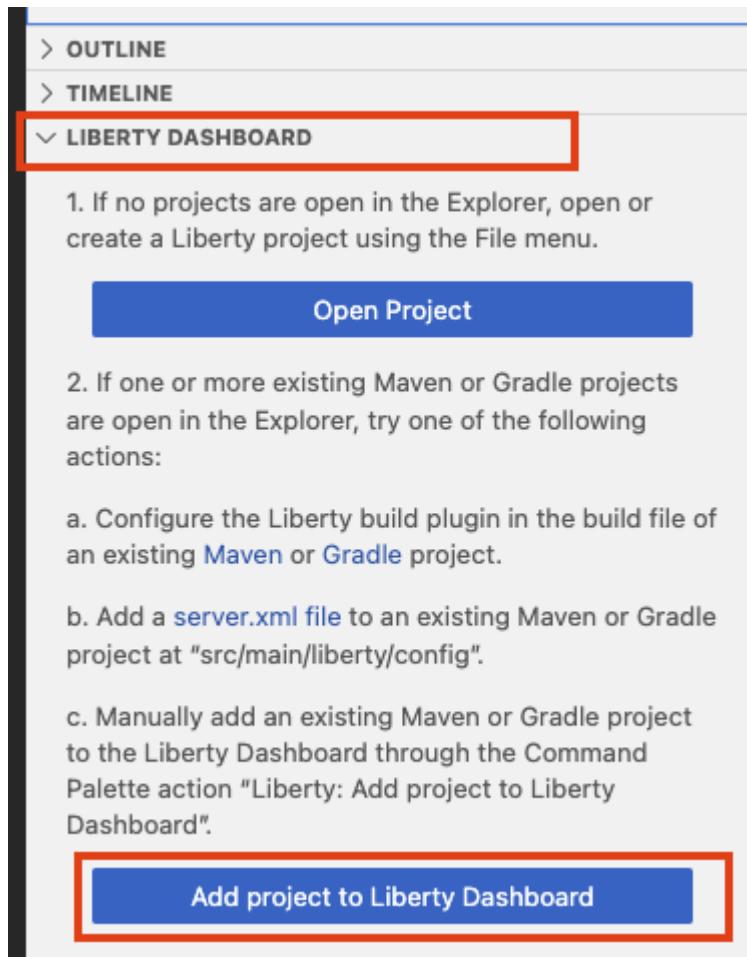
윈도우 사용자는 `was_public.jar` 와 `was_public-9.0.0.pom` 파일에 전체 경로를 주어야 합니다.

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

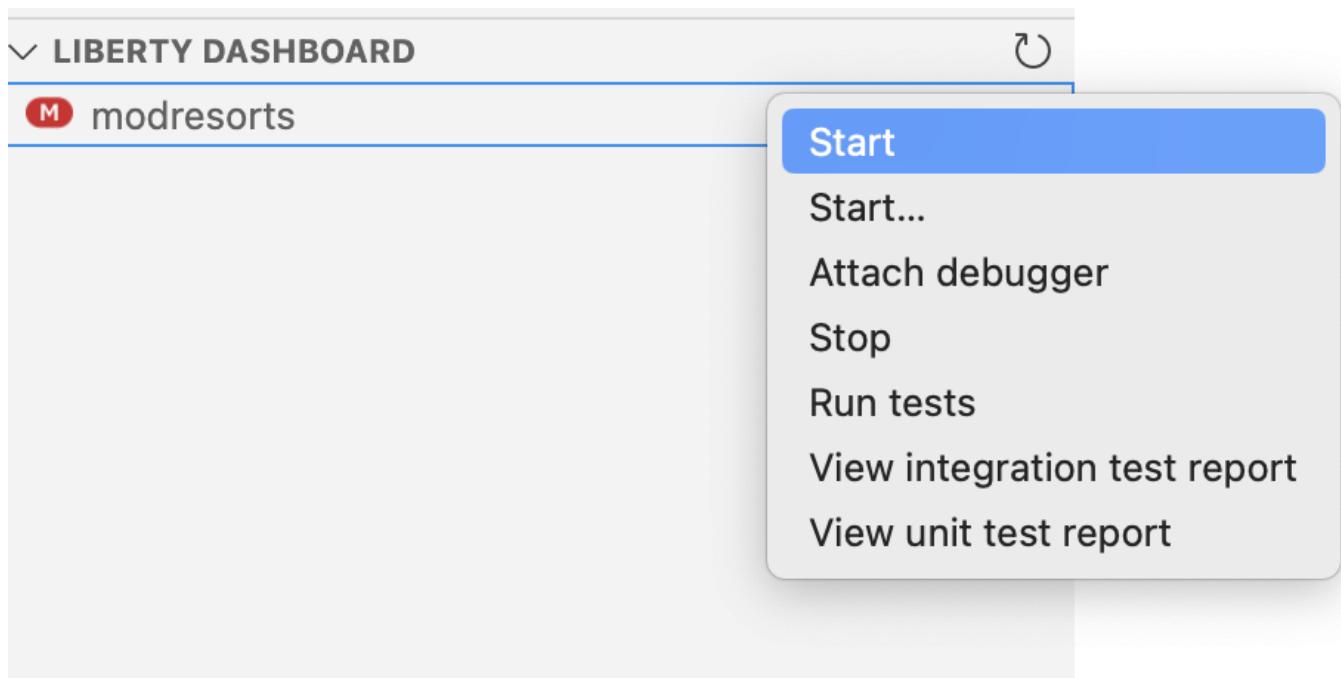
3. View Liberty App

VSCODE extention marketplace로 부터 LibertyTools를 설치 한 후에, Liberty Dashboard가 있는 것을 확인 해 주세요.

Add project to Liberty Dashboard를 클릭한 다음 modresorts-twas-j8 폴더를 dashboard에 추가해 주세요 ("이 프로젝트를 열면 자동으로 추가 됩니다.").



프로젝트를 선택한 후, modresorts 앱이 나타나면 앱을 마우스 오른쪽 버튼으로 클릭하여 시작하세요.

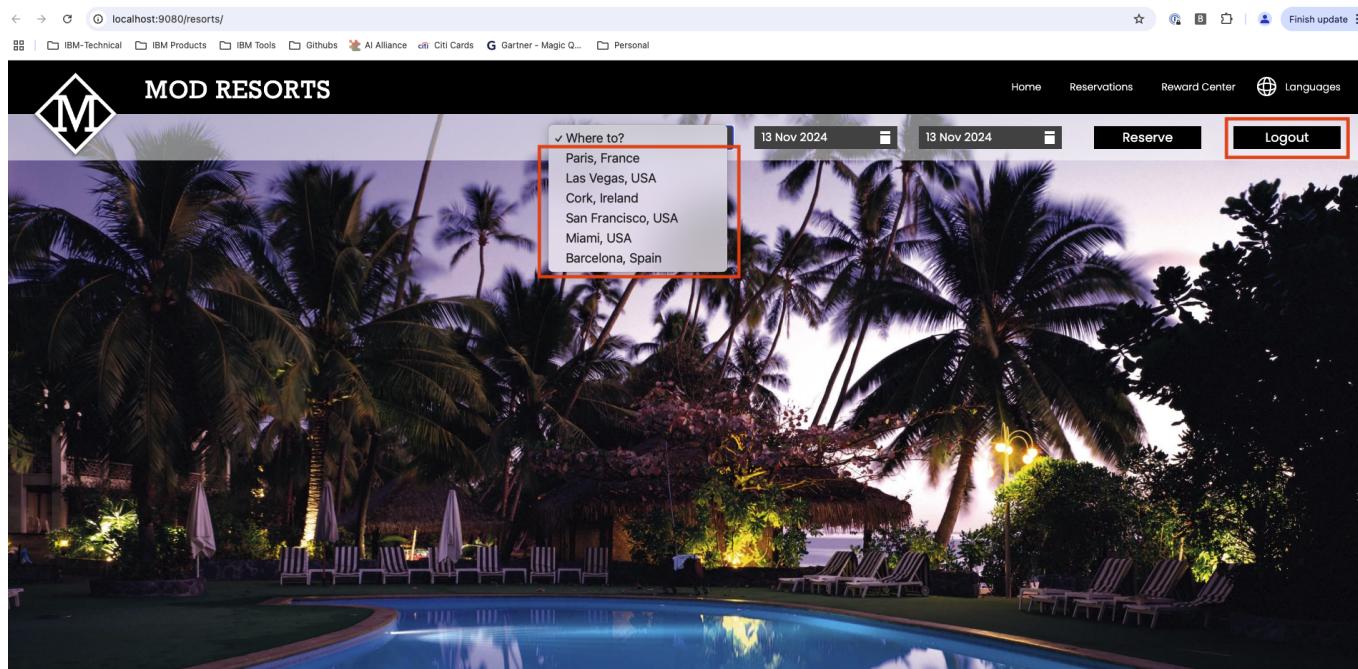


터미널을 보면 VSCode가 필요한 패키지를 다운로드하는 과정을 확인할 수 있습니다.

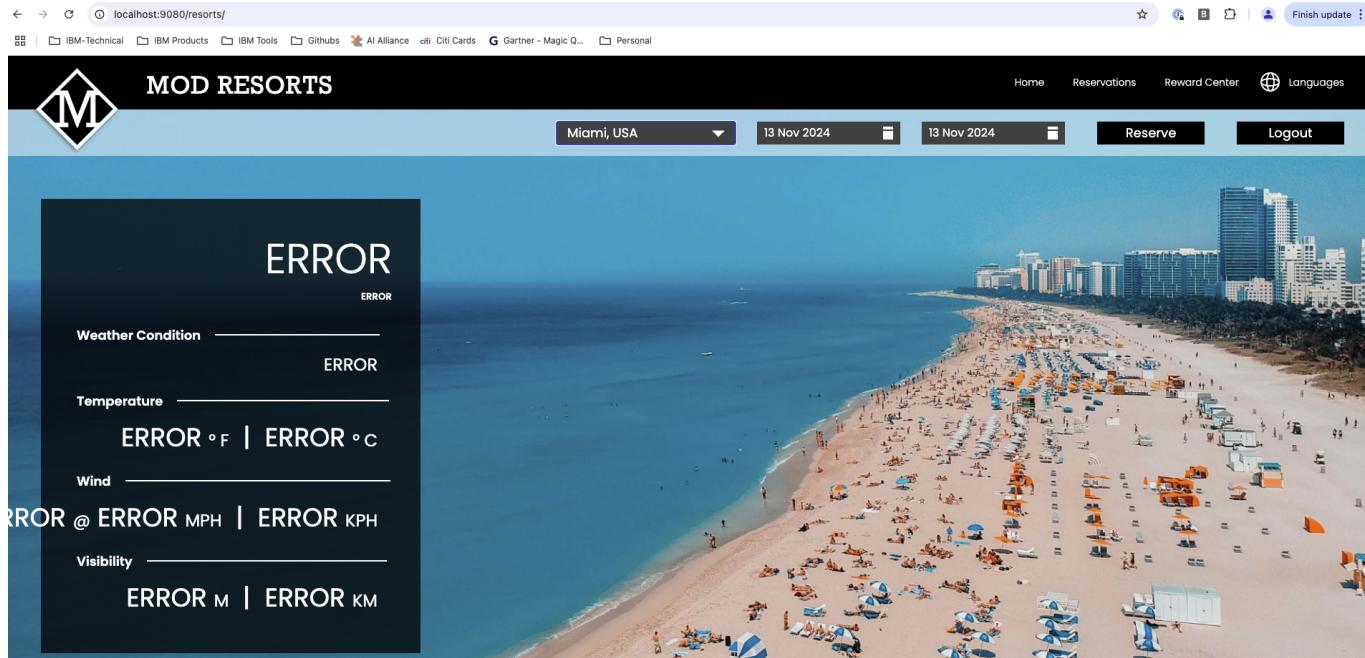
```
PROBLEMS 28 OUTPUT DEBUG CONSOLE TERMINAL PORTS
[INFO] ****
[INFO] * Liberty is running in dev mode.
[INFO] * Automatic generation of features: [ Off ]
[INFO] * h - see the help menu for available actions, type 'h' and press Enter.
[INFO] * q - stop the server and quit dev mode, press Ctrl-C or type '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-twaz-j8/src/main/java/com/acme/modres/WeatherServlet.java uses uncheck ed 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.
```

앱이 시작되면 URL(<http://localhost:9080/resorts/>)을 확인할 수 있고, 이 URL을 브라우저에서 열어 앱을 확인할 수 있습니다.

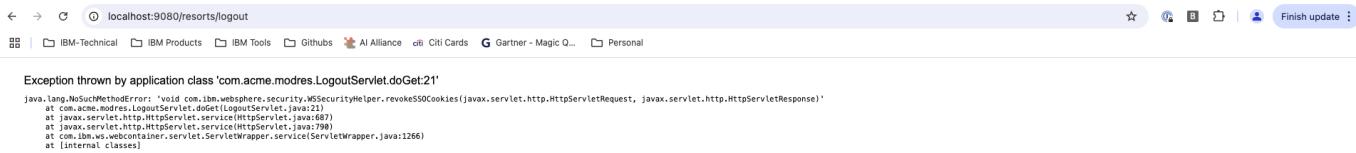
[IMPORTANT] `moderescort` 애플리케이션을 Liberty에서 Java21을 사용하여 실행하고 있으며, 해당 애플리케이션은 WebSphere에서 Java8로 빌드되었기 때문에, 애플리케이션이 성공적으로 시작되었더라도 이 마이그레이션 + 업그레이드로 인해 2군데에서 오류가 발생합니다.



첫 번째로, `Where to?` 드롭다운을 선택하고 어떤 위치를 선택하면 위치 정보 모듈에서 오류가 발생하는 것을 확인할 수 있습니다.



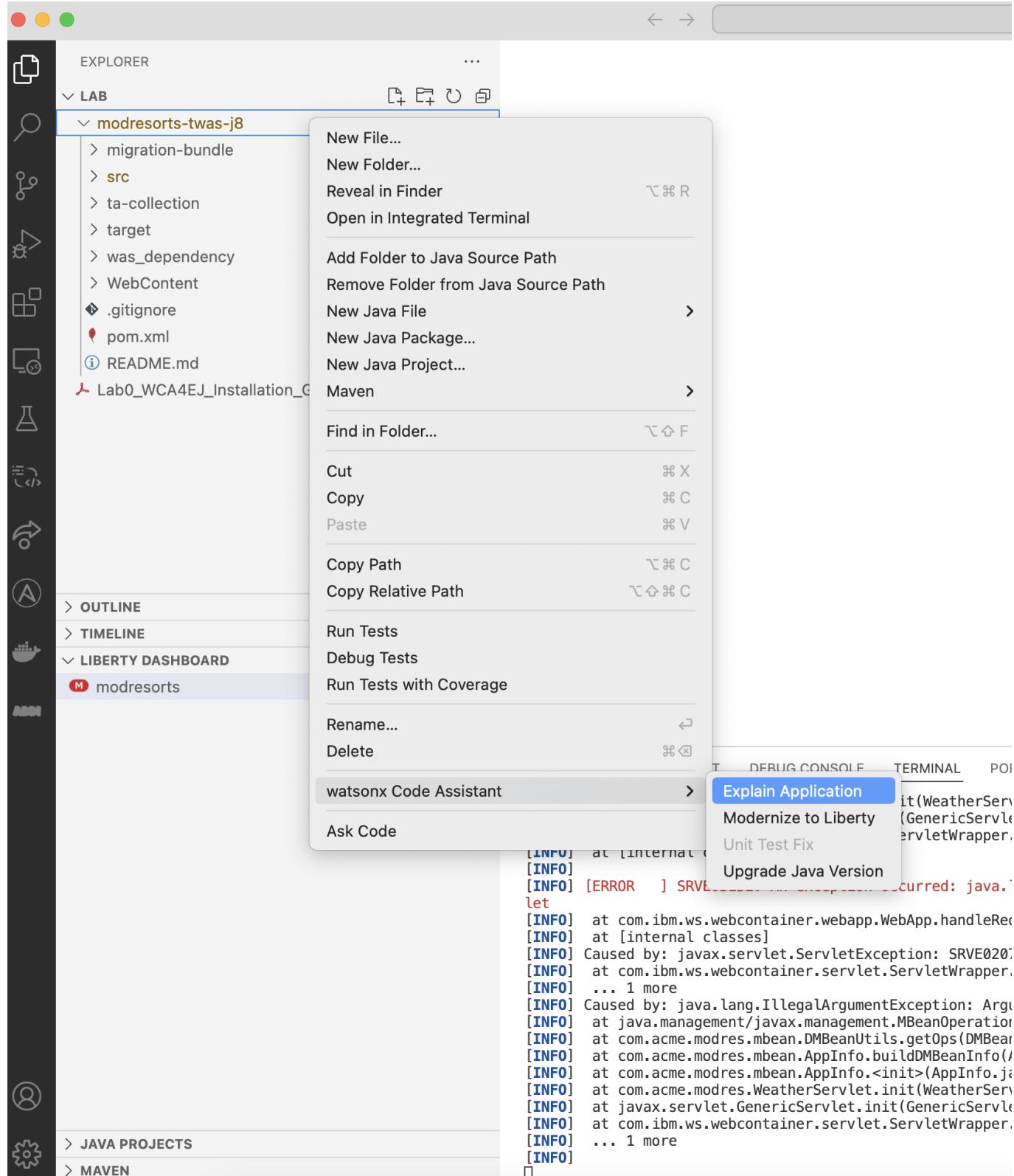
두 번째, **Logout** 을 클릭하면 에러가 발생하고 동작하지 않습니다.



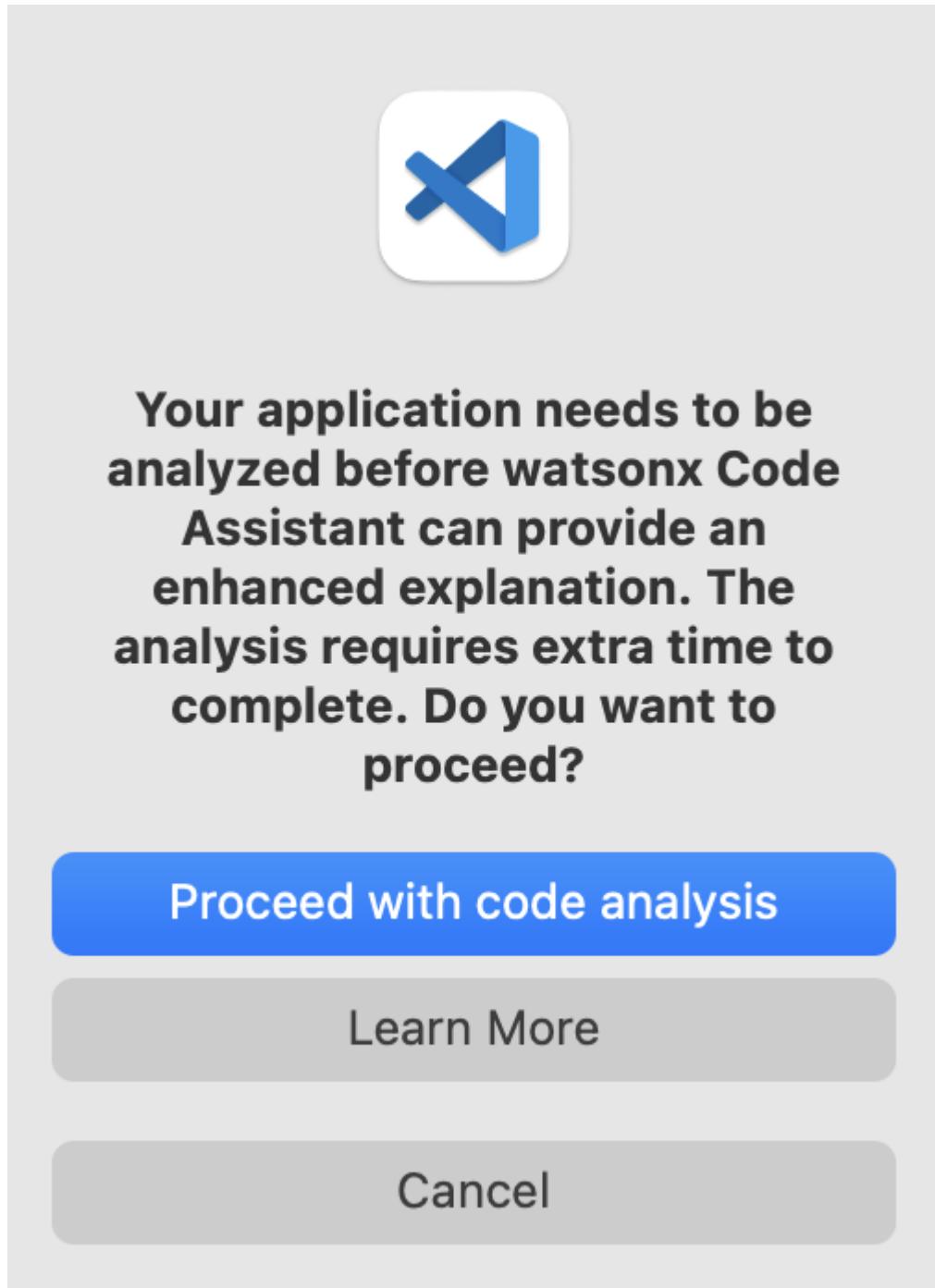
해당 에러는 다른 랩을 통해 나중에 수정 할 예정입니다.

4. Explain Application

전체 프로젝트를 이해하기 위해서, **modresorts-twars-j8** 폴더에서 오른쪽 버튼을 누르고 **watsonx Code Assistant - Explain Application**을 선택해 주세요.



VSCode에서 애플리케이션을 분석하는데 기능이 시간이 걸림을 안내해 줍니다. [Proceed with code analysis](#) 선택 해 주세요.



분석에는 1-2분 정도 소요될 수 있으며, 완료되면 오른쪽 하단에 프롬프트가 표시됩니다.

A screenshot of the VS Code terminal window. The title bar shows tabs for PROBLEMS (28), OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The terminal itself displays Java application logs. A red box highlights a message at the bottom right: "The explanation of Lab has been completed." with a "Open explanation" button. The message also includes "Source: watsonx Code Assistant for Enterprise Java...".

```
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)

The explanation of Lab has been completed.
Source: watsonx Code Assistant for Enterprise Java...
Open explanation
```

이제 보고서를 열고 세부 사항을 읽어볼 수 있습니다.

This screenshot shows the Watsonx Code Assistant interface for an application named "Lab". The main title is "Application explanation - Lab". A note at the top states: "This explanation was generated by watsonx Code Assistant for Enterprise Java Applications on November 13, 2024 at 11:33:28." Below this, the "Application: Lab" section is shown. The "Executive summary of important application functionalities" section describes a Java application with various services and their functionality. It includes a detailed description of the "SecondFilter" service, its purpose, and how it intercepts and modifies requests and responses. The "Summary of service with entry method: doFilter in class: com.acme.modres.SecondFilter" section provides a code snippet from the terminal output, showing Java logs related to the application's startup and environment setup.

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)
```