DALHOUSIE UNIVERSITY

FACULTY OF
COMPUTER SCIENCE

DEPENDENCIES DOCUMENTATION

PlantOne

CSCI 5308

ADVANCED TOPICS IN SOFTWARE DEVELOPMENT

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INSTRUCTOR

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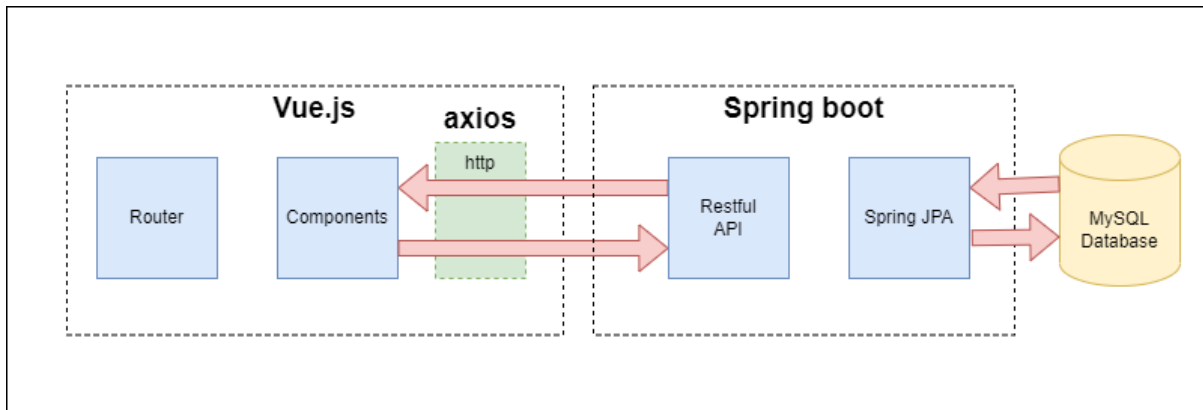
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Tech stack

Frontend: Vue.js

Backend: Spring boot

Database: MySQL

1) Dependencies [1] – [6]:

Backend dependencies

No.	Dependency	Reason
1.	spring-boot-starter-data-jpa	This dependency is used to effectively link a Spring application to a relational database. The spring-boot-starter-data-jpa dependency is used internally by the spring-boot-starter-data-jpa. When developing a new application, we should prioritise business logic above technological complexity and boilerplate code. As a result, we're utilising spring-boot-starter-data-jpa.
2.	spring-boot-starter-security	Spring Security is an authentication and access-control framework that is both robust and very flexible. Support for both authentication and authorization are comprehensive and extendable. We secure the application by configuring Spring Security in it. Spring Boot automatically protects all HTTP endpoints with "basic" authentication if Spring Security is in the classpath. As a result, spring-boot-starter-security includes all dependencies required to launch Spring security.
3.	spring-boot-starter-web	This dependencies package contains all of the classes required to protect an application from a web application. The WebSecurityConfig class is annotated with @EnableWebSecurity in order to enable Spring Security's web security functionality and give a bridge to Spring integration. It also extends the WebSecurityConfigurerAdapter, which is used to validate HttpServletRequest and HttpServletResponse. This class is used to receive requests and responses.
4.	spring-boot-starter-mail	This dependencies package contains all of the classes required to implement JavaMail functionalities in a spring boot application. When a user forgets their password, our programme sends an email using JavaMail.

5.	spring-boot-starter-validation	This set of dependencies is used to perform basic validation on Entity fields. When we acquire data from the frontend and try to save it to the database with Spring JPA, we check for data validation. As a result, these dependencies offer the default annotation that we utilised in our application.
6.	mysql-connector-java	MySQL Connector/J, a driver that implements the Java Database Connectivity (JDBC) API, connects client applications written in the Java programming language. In our application, we used a MySQL database as the backend. As a result, this dependency contains all of the classes required to connect a spring boot application to a MySQL database.
7.	springfox-swagger2	Swagger is assisting in the creation of API documentation for a Spring Boot application. As a result, we included these requirements in order to allow documentation. It is critical to have correct back-end API definitions. Simultaneously, the API documentation should be informative, legible, and simple to understand.
8.	springfox-swagger-ui	When we launch our application, swagger information defining our API is already produced. So, to make that data more visually appealing, we've introduced swagger-ui dependencies. Swagger-ui is a graphical user interface that displays HTML documentation based on JSON input. If we create a GUI-based API documentation, it will be much easier for developers to understand API endpoints.
9.	spring-boot-starter-test	The key dependent for the test is spring-boot-starter-test. It contains the vast majority of the items needed for our testing. We may develop several different sorts of tests to assist test and automate the quality of an application. We must first connect the testing framework before we can begin testing.
10.	spring-security-test	This dependency contains classes required for testing spring security. We introduced spring security to our application so that when we use some API that is going through spring security, spring security testing dependencies can assist us bypass the spring security or sometimes actual testing in integration test.
11.	junit	JUnit is a Java unit testing framework and one of the finest testing techniques. It is an open-source framework for writing and running repeatable automated tests. A broad tool set means that we can effectively test all aspects of our application without having to write our own test utilities. JUnit performs admirably in fulfilling our expectations. As a result, we used JUnit to create test cases.
12.	junit-jupiter	These dependencies are used for Spring Boot testing using JUnit. As a result, these dependencies are used in our programme.
13.	java-jwt	Java-jwt is used for a number of classes related to jwtToken. When a user is authorised in our application, a jwtToken is created, and this token is used every time a user calls API from the frontend.
14.	Modelmapper	ModelMapper is a refactoring-safe object mapping package that maps objects to one other automatically. We are mapping JPA entities to request and response objects in our application.

15.	hibernate-entitymanager	The EntityManager API is used to connect to a database in a specific unit of work. It is used to create and remove permanent entity instances, to locate entities based on their main key identification, and to query all entities. EntityManager was utilised in our application to store entity objects.
16.	commons-fileupload	The Commons FileUpload package makes it simple to add dependable, high-performance file upload functionality to your servlets and web applications. We are uploading user profile pictures and post pictures from the frontend of our programme. So, using this package, we can simply control file types in the backend.
17.	h2	H2 is an in-memory, embedded, open-source database. It is most commonly used in unit testing. It keeps data in memory rather than on disc. So, when we run unit and integration tests, we use the H2 database in the application.

Frontend Dependencies

No.	Dependency	Reason
1.	axios	Axios is a library for http communication, making ajax requests, and so on.
2.	bootstrap	We imported bootstrap framework inside the project, because at different places, the UI of the project mainly relies on the bootstrap and pug. It's more convenient to use the framework than the raw HTML and CSS to make the website responsive.
3.	bootstrap-vue	Bootstrap is the most popular HTML, CSS, and JS framework for developing responsive, mobile first projects on the web. On the other hand, Bootstrap Vue is detailed as "A front end CSS And Vue component library". As we are using a vue framework, we need this library to develop UI while using bootstrap framework.
4.	lodash	Lodash helps programmers write more concise and easier to maintain JavaScript code. Lodash contains tools to simplify programming with strings, numbers, arrays, functions and objects. The project is relying on the javascript a lot so we imported the library.
5.	vue-advanced-cropper	This library is been imported to crop the photos uploaded by the user in the user profile module or posts module. The advanced library to create your own croppers suited for any website design.
6.	vue-cookies	This is a vue plugin to use and manage the cookies inside the project. It includes storing the common information, which can be used at multiple places inside the project.
7.	vue-quill-editor	This is imported to use rich text editor inside the program at multiple places. In the createBlog as well as createEvent functionality, the quill rich textbox editor is been used.
8.	vue-router	In the program, we used a separate router file to move from one vue page to another. To achieve this we included the vue-router library. The library helps to link between the browser's URL/History and Vue's

		components allowing for certain paths to render whatever view is associated with it.
9.	vuelidate	This is a model based validator for the vue. It's been used to validate the fields and making sure that the project achieves the level of quality, while taking the data inputs from the user.
10.	Vuex	This is a state management library. This is been imported into the project, to maintain the store and state of the web-pages when the appropriate buttons are triggered.
11.	ejs	EJS simply stands for Embedded Javascript. It is a simple templating language/engine that lets its user generate HTML with plain javascript. It's useful because the project uses lots of html and javascript together in the one vue file.
12.	express	A Simple way of using Server Side rendered Vue.js 2.0+ natively in Express using streams. It basically funnels incoming requests through a chain of middlewares (of steps) where we can do something with the request, read some data from it, manipulate it, check if the user is authenticated or basically send back a response immediately.
13.	html2pdf.js	Html2pdf library basically helps to convert the html code into the pdf. To provide the ticket with essential information, we have imported the library to make things work smoothly.
14.	compression	The middleware will attempt to compress response bodies for all request that traverse through the middleware, based on the given options. To maintain the integrity, we used this library

References

[1]   "Spring Boot", *Spring.io*, 2022. [Online]. Available: https://spring.io/projects/spring-boot. [Accessed: April 05, 2022].

[2]   "Swagger", *swagger.io*, 2022. [Online]. Available: https://swagger.io/. [Accessed: April 05, 2022].

[3]   "MySQL", *Mysql.com*, 2022. [Online]. Available: https://www.mysql.com/. [Accessed: April 05, 2022].

[4]   "JUnit 5", *Junit.org*, 2022. [Online]. Available: https://junit.org/junit5/. [Accessed: April 05, 2022].

[5]   "Vue.js - The Progressive JavaScript Framework | Vue.js", *Vuejs.org*, 2022. [Online]. Available: https://vuejs.org/. [Accessed: April 05, 2022].

[6]   "EJS -- Embedded JavaScript templates", *Ejs.co*, 2022. [Online]. Available: https://ejs.co/. [Accessed: April 05, 2022].