Spring Boot Web Application



CPSC 4970 Applied Cyber Security



Why Spring Boot?

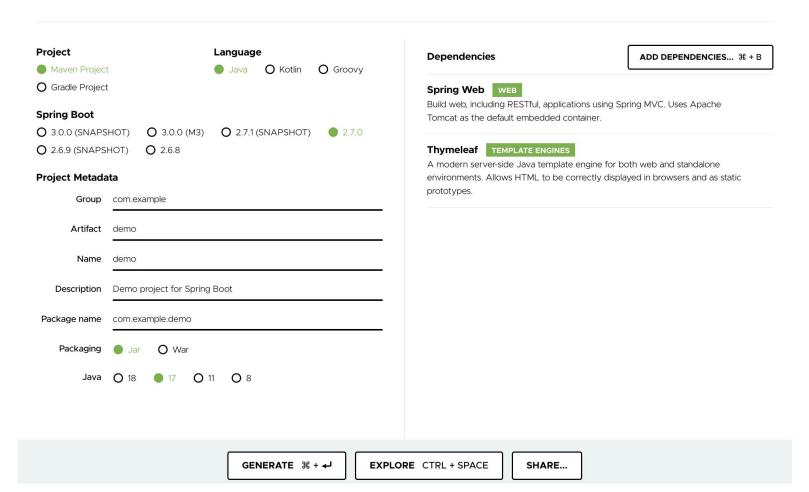
- Extremely fast to create web applications
- Eliminates complexities of build Java Web App directly (war file)
- Production grade software
- Eliminates "rolling your own" for many web application common capabilities
 - Security
 - Form Handling
 - Database & Object to Relationship Mapping
 - APIs
- Convention over Configuration
 - Minimal configuration files
 - Extensive use of Java Annotations
- Embedded Tomcat or Jetty web server
- Requirements
 - Java JDK
 - Maven or Gradle



Spring Boot Initializer

https://start.spring.io/







Spring Boot Maven Plugin

- Maven Tasks/Goals specific for Spring Boot Application
- Run Embedded web server
- Package into a single executable jar file



Simple Web App - All the Code

Annotation: **HTTP Request Handler Class** Annotation: Spring **Boot App Class** Annotation Indicating method to handle **URL** path **Spring Application** Startup

```
import ...
@RestController
@SpringBootApplication
public class WebappApplication {
    @RequestMapping(©>"/")
    public String indexPage() { return "War Eagle!!!!!"; }
    public static void main(String[] args) {
        SpringApplication.run(WebappApplication.class, args);
```



Application Properties File

- Key configuration file
 - application.yaml or application.properties
 - located on classpath

- Configuration of application configuration values
 - Example configuring embedded server can be as easy as:

Properties Syntax

server.address=127.0.0.1 server.port=5566

YAML Syntax

server:

address: 127.0.0.1

port: 5566



Build Executable JAR File

- Package into single jar file
 - "mvn package" command
 - Spring Boot will repackage it into an executable one.
- Run jar file
 - "java -jar target/webapp-0.0.1-SNAPSHOT.jar
- Runs embedded web server on default port
 - http://localhost:8080
- The jar is completely self-contained, you can deploy and run it anywhere (with Java)
 - Ideal for microservices and docker containers



AUBURN UNIVERSITY