SpringBoot Actuators

The Problem:

How can we monitor and manage our application?

How can I check the health of the application?

Solution: SB Actuators

- Exposes endpoints to monitor and manage the application.
- REST endpoints are automatically added to our application.
- No need to write any additional code.

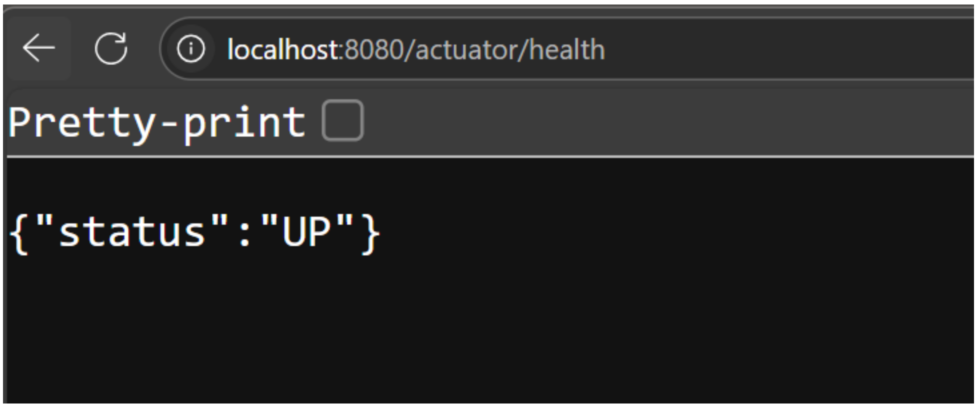
- Add dependency to pom.xml

```
<dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-actuator</artifactId>
</dependency>
```

- All the endpoints will be added prefixed with: /actuator
- /actuator/health -> To get health information about the application

localhost:8080/actuator/health

* The /info endpoint can provide information of our application



```
{"status":"UP"}
```

```
management.endpoints.web.exposure.include=*
```

/actuator/threaddump

- Lists all the threads running in our application

/actuator/mappings

- Lists all the requests mappings for our app

What about security?

```
<dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-security</artifactId>
</dependency>
```

To override default username and password

```
spring.security.user.name=Prasad
spring.security.user.password=1234
```

Running SB application without IDE

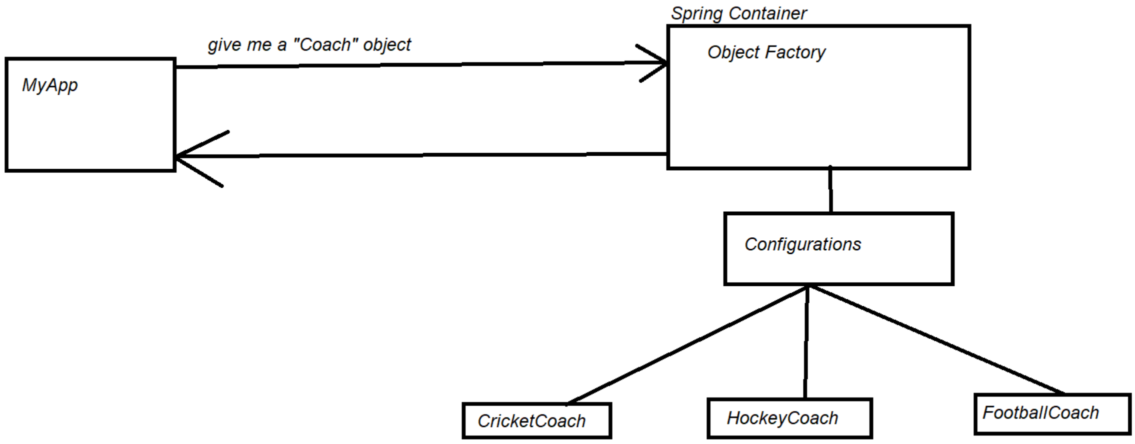
1st Step: mvnw package command

2nd Step: go inside target open cmd ->

Java –jar <name of project's JAR file>

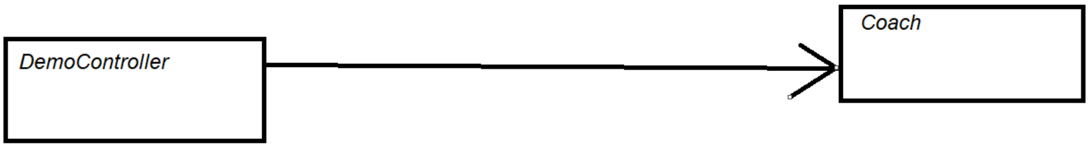
Inversion of Control

The approach of outsourcing the construction and management of objects.



1. Spring Container
   -Primary Purpose
   i. create and manage(IOC)
   ii.Inject the object dependency(Dependency Injection)

   Spring Dependency Injection
   The dependency inversion principle – the client delegates to another object – the responsibility of providing its dependencies.



- Coach is providing daily workouts
- The demoController wants to use the coach

New Helper: Coach

This is dependency

Need to inject the dependency into the controller.

Injection Types:

- Constructor Injection
- Setter Injection
- Field Injection

When to use one?

1. Constructor Injection
   - Will use it when we have all the required dependencies

2. Setter Injection

   -in the case of some optional dependencies

3. Field Injection*

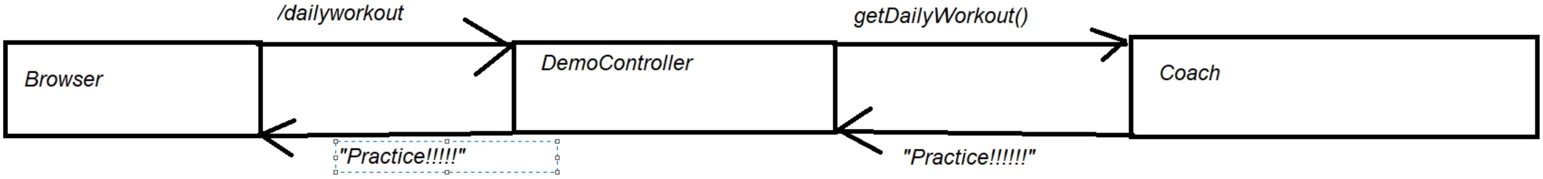
What is Spring Autowiring?

For DI, Spring Uses autowiring.

Autowiring Example:

Injecting a coach interface

1. Spring will scan for @Component or a class which is annotated with @Component
2. Will ask - does anyone implements coach interface
3. If so - lets inject them for cricket coach



Step 1: Define the dependency interface and a class(interface Coach, cricket coach implements coach)

Step 2: create DemoController

Step 3: Create a constructor in democontroller class for injections.