The Spring Framework

CSE 331

University of Washington
What is the Spring Framework?

• Spring is an application framework for Java
  • Provides standard functionality so you don’t have to
  • Contains extensions for web applications

• Libraries vs frameworks:
  • Using a library: your code owns `main` and makes calls to the library
  • Using a framework: the framework owns `main` and makes callbacks to your code

• Today’s lecture: demo a web application that manages subscribers to a mailing list
Architecture of a Spring application

- **Config**: Runs before the app starts
- **Repository**: Interface to JPA, Closest connection to data source
- **Service**: Model of the MVC Core/Business Logic
- **Rest Controller**: Not part of the Spring application
- **Javascript UI**: Not part of the Spring application

- **JPA**: Database Connector
Architecture

- **Config**: Runs before the app starts
- **Service**: Model of the MVC Core/Business Logic
- **Repository**: Interface to JPA, Closest connection to data source
- **Rest Controller**: Closest connection to data source
- **API**: Not part of the Spring application
- **JPA**: Database Connector
- **Javascript UI**: Not part of the Spring application

- **Must be implemented for HW10**
- **May be implemented for HW10**
Implementing an architecture

Each **module** is a Java class

In an ordinary application, each **arrow** $A \rightarrow B$ represents:

- A has a field of type B
  - You need to set it
- A has a parameter or return of type B
  - You need to make the call

In Spring, you write **annotations**
- Spring finds the appropriate objects, sets fields, and makes calls for you
How to specify dependencies

- **Config**
  - `@Configuration`
  - `@Autowired`

- **Service**
  - `@Service`
  - `@Autowired`
  - `@Autowired`
  - `@Autowired`

- **Repository**
  - `@Repository`

- **RestController**
  - `@RestController`

- **Javascript UI**
Campus Paths does not use a database

Since we don’t use a database, you will have to implement your own repository (Data Parser?)