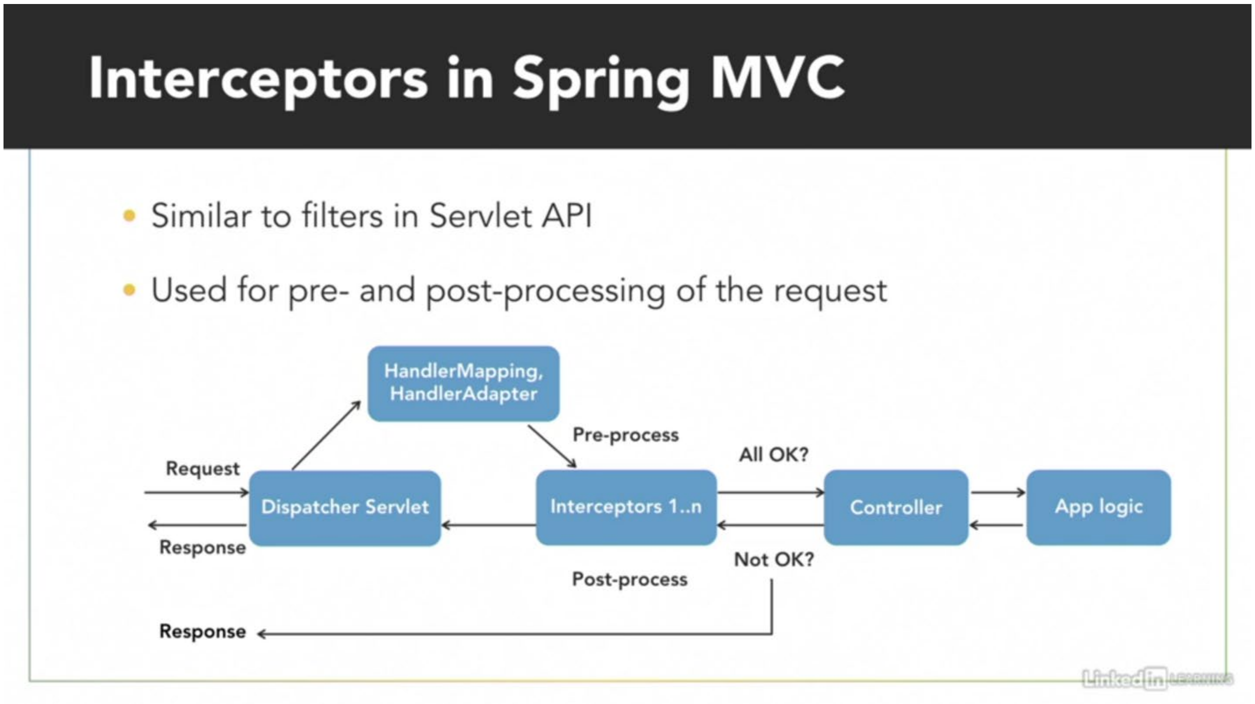
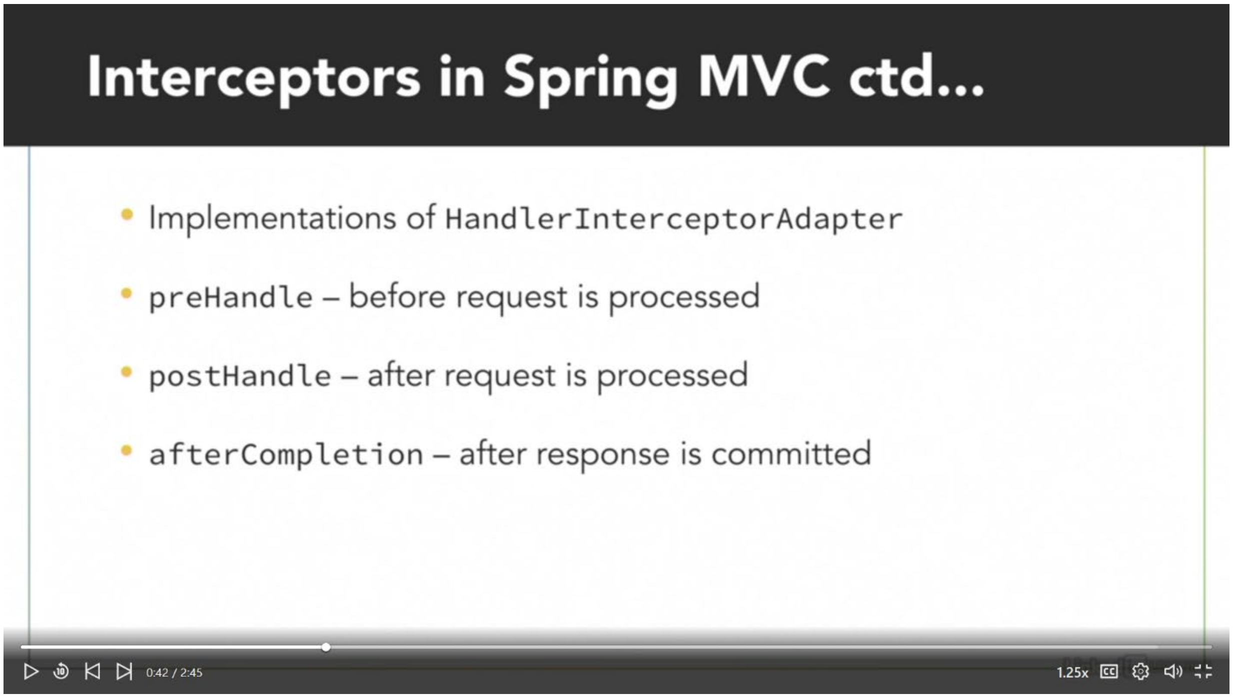
Interceptors and in Spring MVC



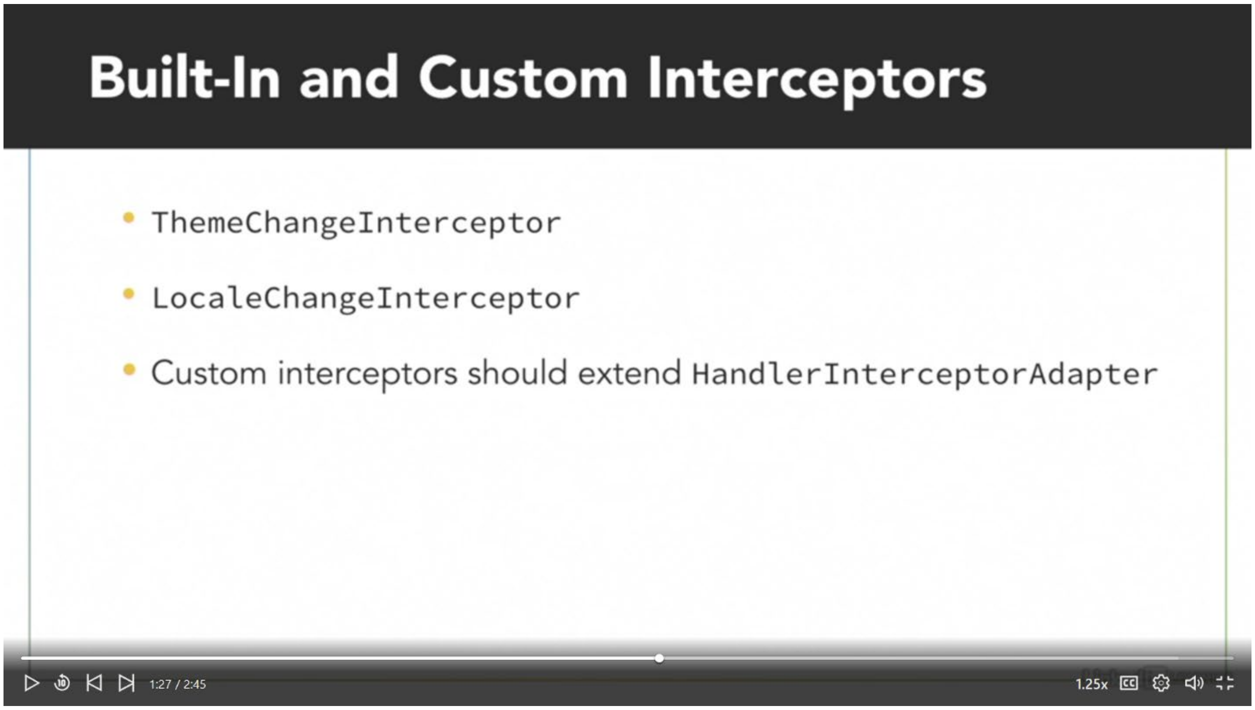
Interceptors in Spring MVC

- Similar to filters in Servlet API
- Used for pre- and post-processing of the request



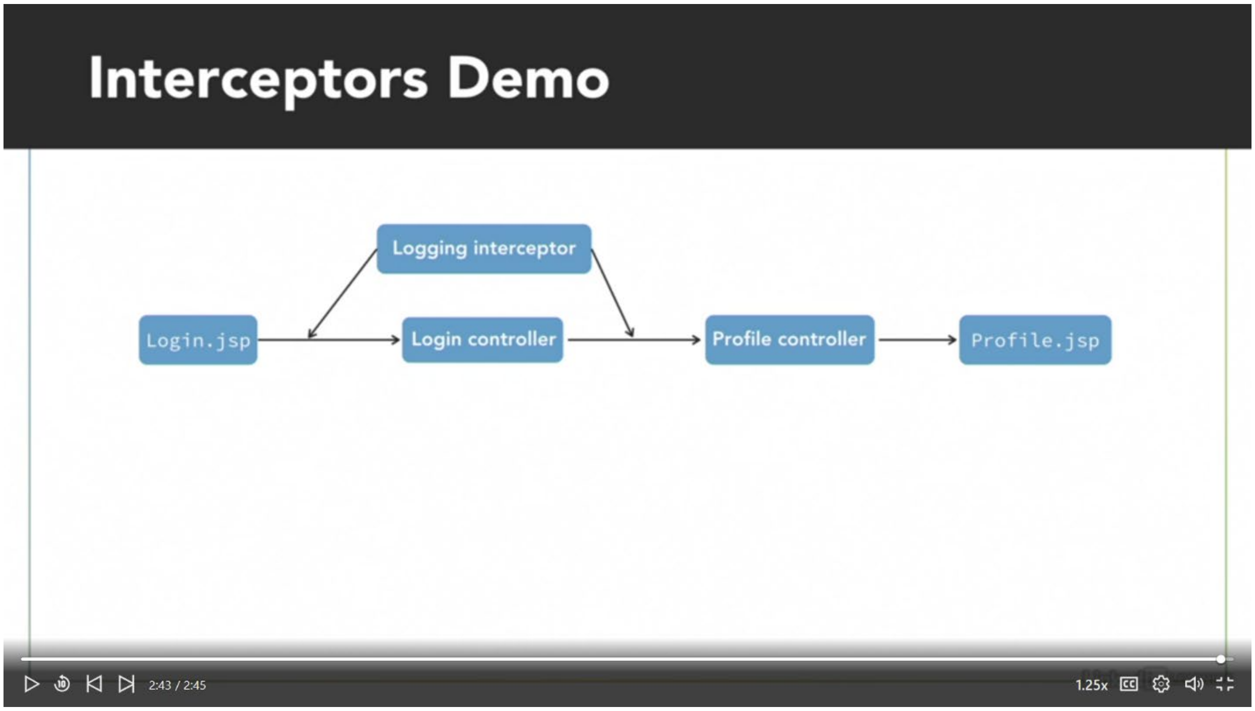
Interceptors in Spring MVC ctd...

- Implementations of `HandlerInterceptorAdapter`
- `preHandle` – before request is processed
- `postHandle` – after request is processed
- `afterCompletion` – after response is committed

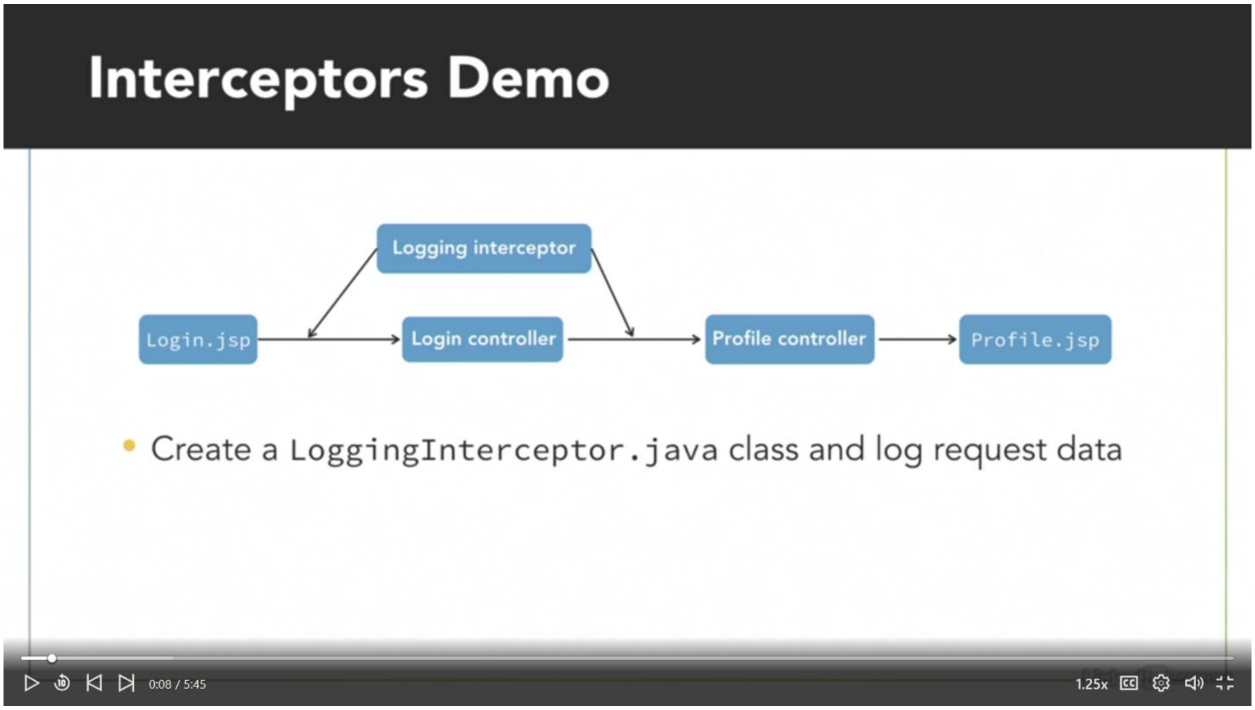


Built-In and Custom Interceptors

- ThemeChangeInterceptor
- LocaleChangeInterceptor
- Custom interceptors should extend HandlerInterceptorAdapter



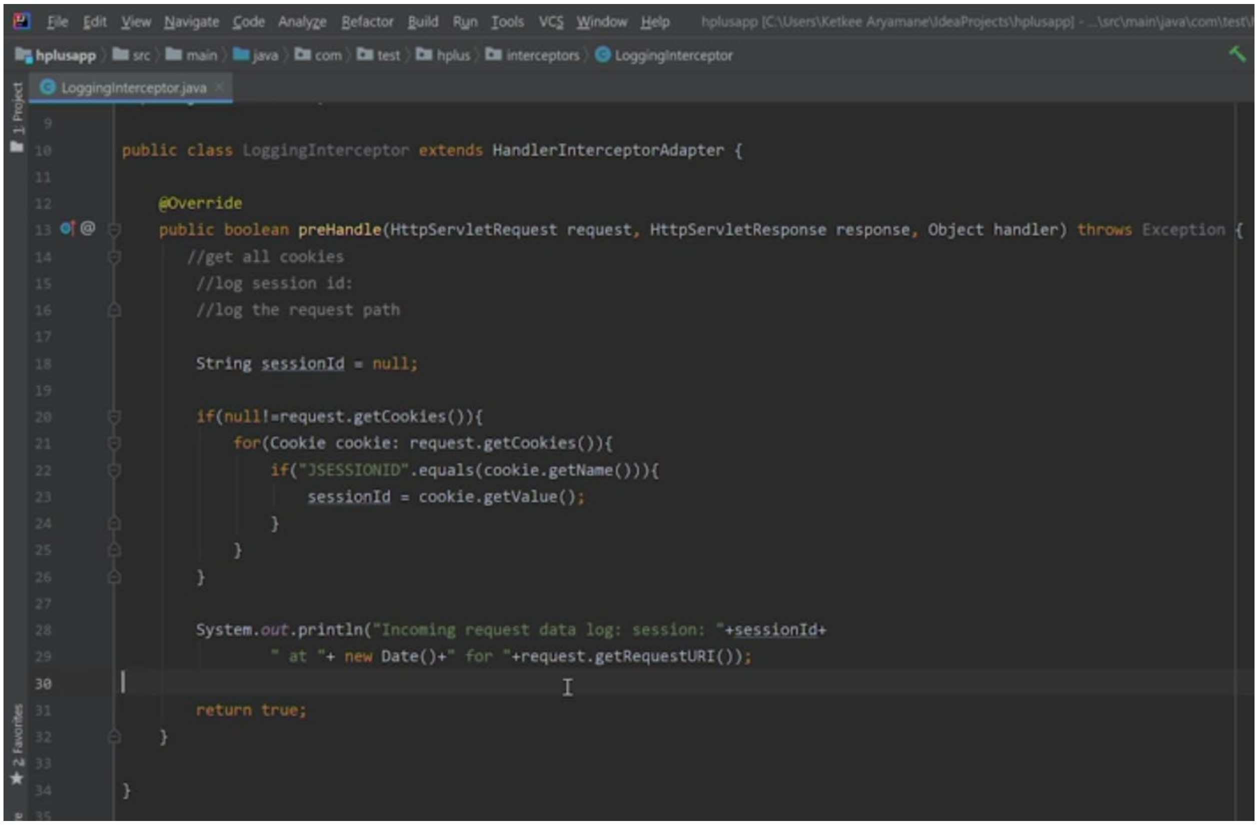
Interceptors Demo



Interceptors Demo

- Create a `LoggingInterceptor.java` class and log request data

Create a LoggingInterceptor class that extends HandlerInterceptorAdapter and override its functions.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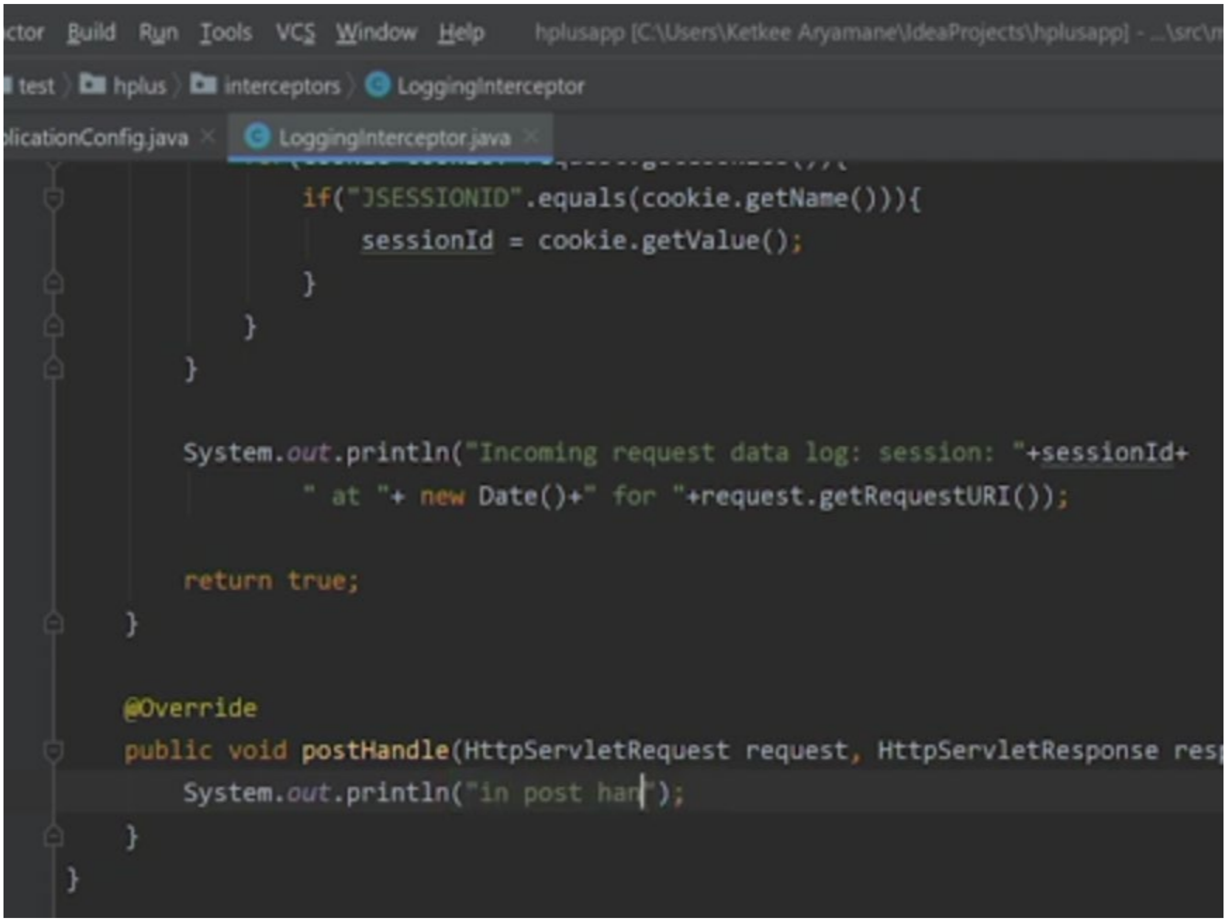
hplusapp
src
main
java
com
test
hplus
interceptors
LoggingInterceptor
LoggingInterceptor.java
1: Project
2: Favorites

```java
public class LoggingInterceptor extends HandlerInterceptorAdapter {

    @Override
    public boolean preHandle(HttpServletRequest request, HttpServletResponse response, Object handler) throws Exception {
        //get all cookies
        //log session id:
        //log the request path

        String sessionId = null;

        if(null!=request.getCookies()){
            for(Cookie cookie: request.getCookies()){
                if("JSESSIONID".equals(cookie.getName())){
                    sessionId = cookie.getValue();
                }
            }
        }

        System.out.println("Incoming request data log: session: "+sessionId+
                " at "+ new Date()+" for "+request.getRequestURI());

        return true;
    }

}
```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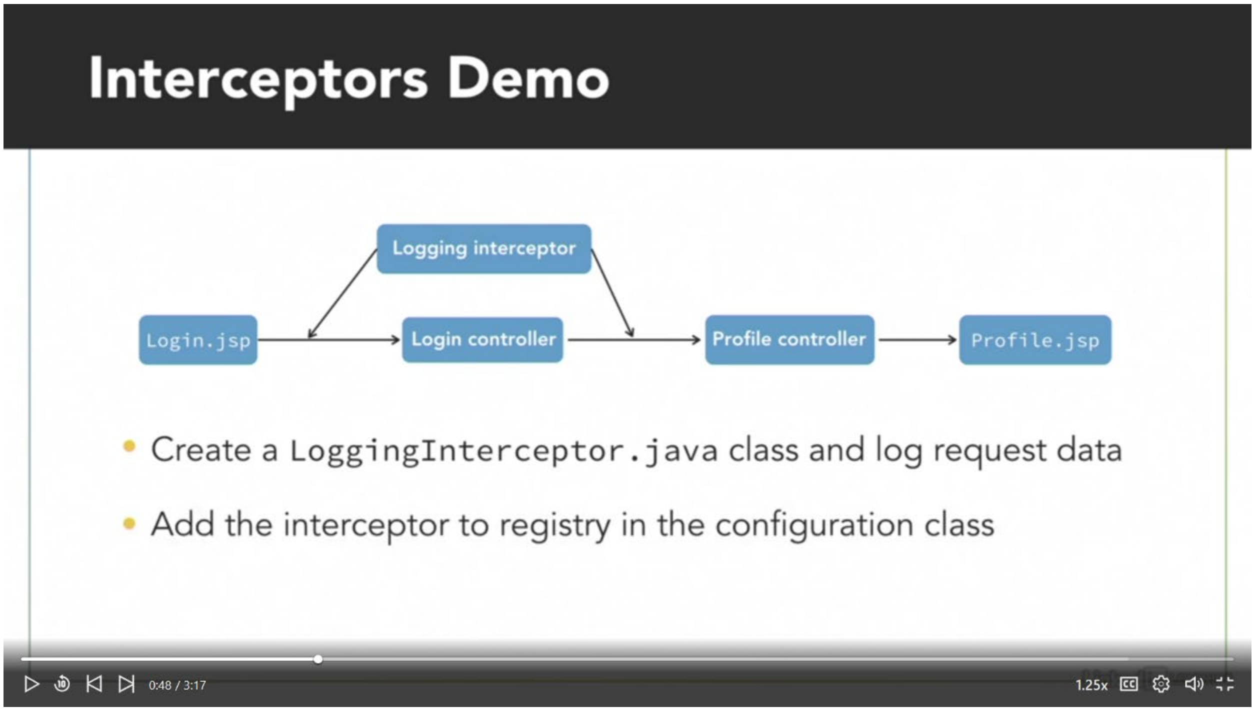
test 〉 hplus 〉 interceptors 〉 LoggingInterceptor
plicationConfig.java
LoggingInterceptor.java

```
                if("JSESSIONID".equals(cookie.getName())){
                    sessionId = cookie.getValue();
                }
            }
        }

        System.out.println("Incoming request data log: session: "+sessionId+
                " at "+ new Date()+" for "+request.getRequestURI());

        return true;
    }

    @Override
    public void postHandle(HttpServletRequest request, HttpServletResponse res
        System.out.println("in post han");
    }
}
```



Interceptors Demo

Logging interceptor

Login.jsp

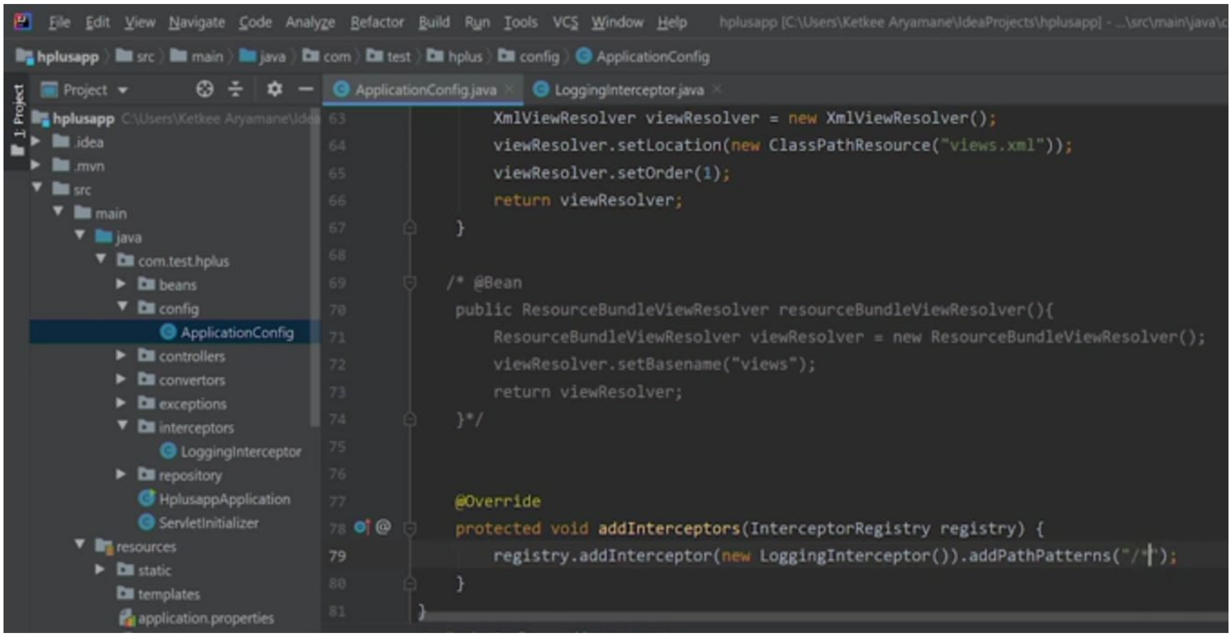
Login controller

Profile controller

Profile.jsp

- Create a `LoggingInterceptor.java` class and log request data
- Add the interceptor to registry in the configuration class

Override the addInterceptor() method in ApplicationConfig.java class to register the newely created LoggingInterceptor with pathPattern to all urls /*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Project
ApplicationConfig.java
LoggingInterceptor.java
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.idea
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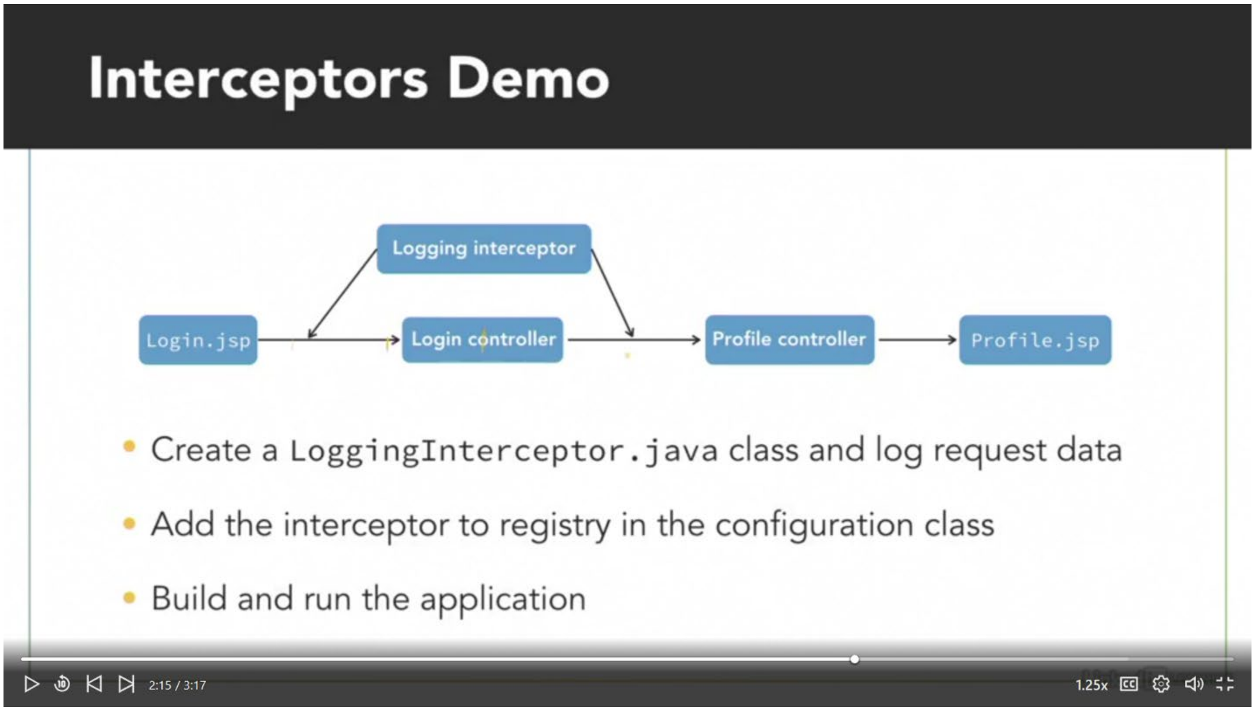
src
main
java
com.test.hplus
beans
config
ApplicationConfig
controllers
convertors
exceptions
interceptors
LoggingInterceptor
repository
HplusappApplication
ServletInitializer
resources
static
templates
application.properties

```
        XmlViewResolver viewResolver = new XmlViewResolver();
        viewResolver.setLocation(new ClassPathResource("views.xml"));
        viewResolver.setOrder(1);
        return viewResolver;
    }

   /* @Bean
    public ResourceBundleViewResolver resourceBundleViewResolver(){
        ResourceBundleViewResolver viewResolver = new ResourceBundleViewResolver();
        viewResolver.setBasename("views");
        return viewResolver;
    }*/


    @Override
    protected void addInterceptors(InterceptorRegistry registry) {
        registry.addInterceptor(new LoggingInterceptor()).addPathPatterns("/*");
    }
}
```

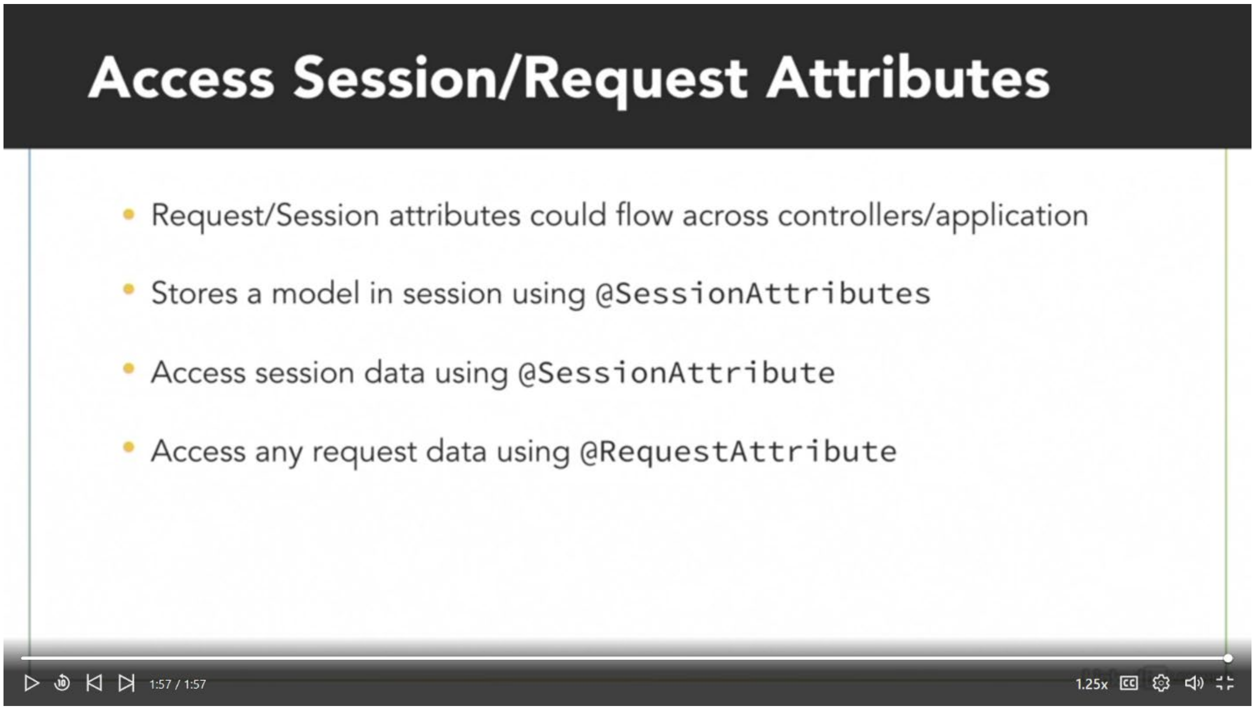


Interceptors Demo

Logging interceptor

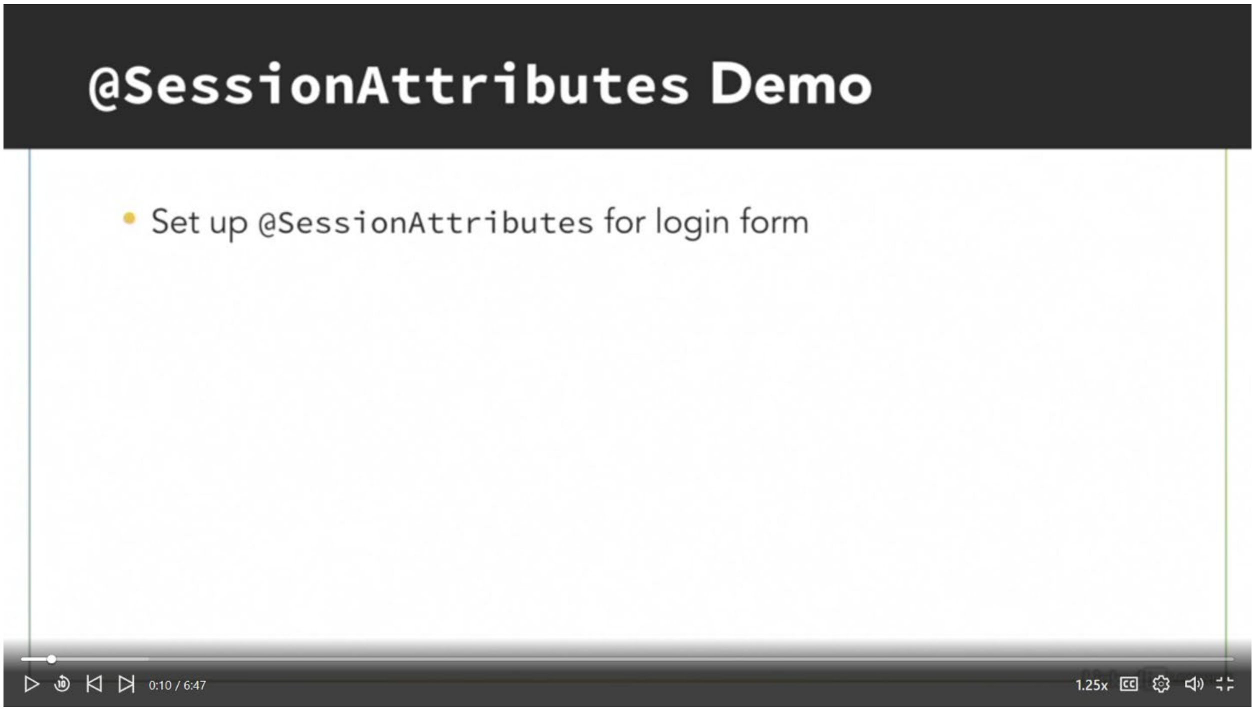
Login.jsp → Login controller → Profile controller → Profile.jsp

- Create a LoggingInterceptor.java class and log request data
- Add the interceptor to registry in the configuration class
- Build and run the application



Access Session/Request Attributes

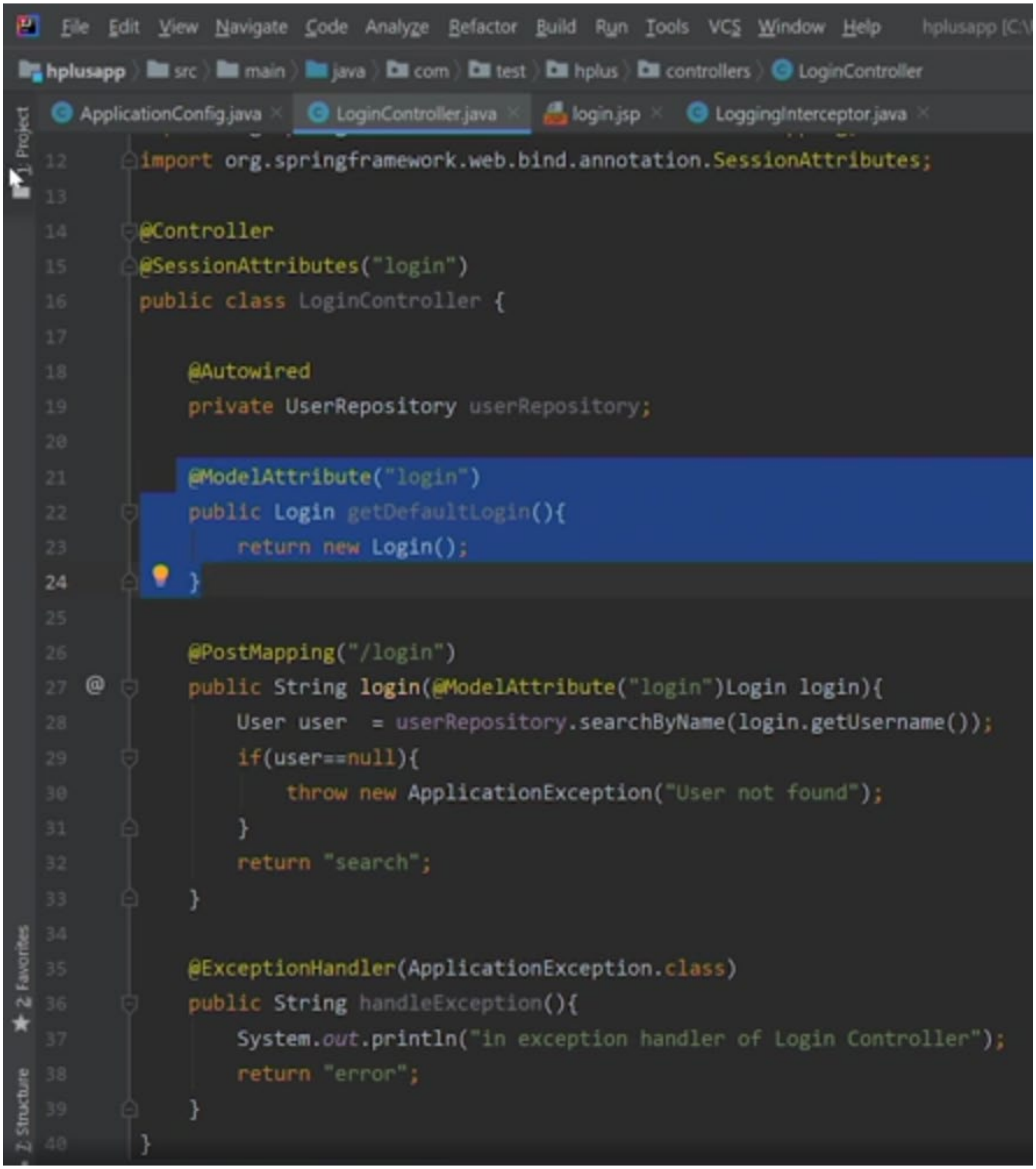
- Request/Session attributes could flow across controllers/application
- Stores a model in session using `@SessionAttributes`
- Access session data using `@SessionAttribute`
- Access any request data using `@RequestAttribute`



`@SessionAttributes` Demo

- Set up `@SessionAttributes` for login form

So for SessionAttribute to set values in a session Model, the Model should exists before it sets the values in a Model in SessionAttribute. So the controller should have a getDefaultLogin method to return that model.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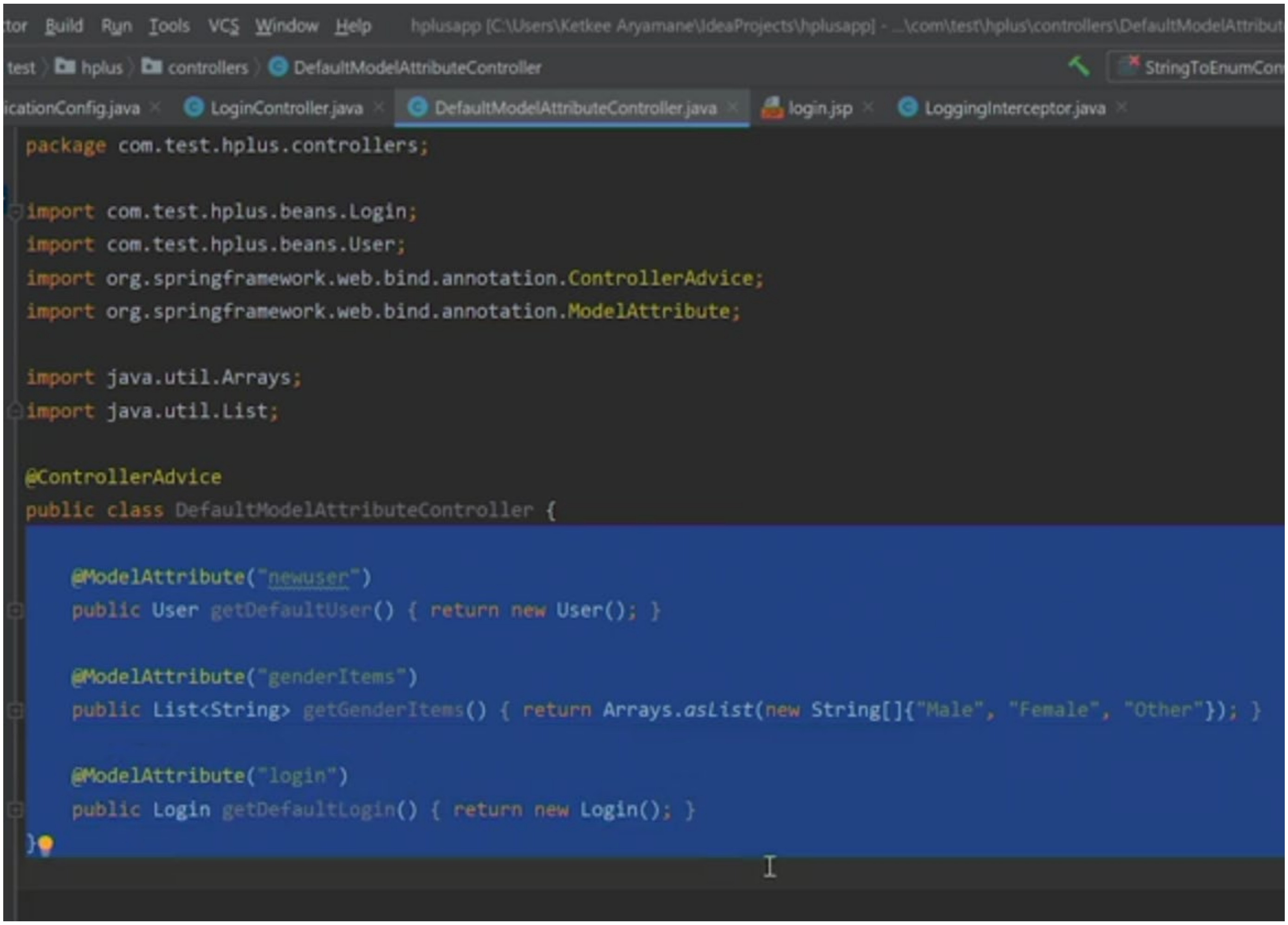
hplusapp › src › main › java › com › test › hplus › controllers › LoginController
ApplicationConfig.java
LoginController.java
login.jsp
LoggingInterceptor.java
1: Project
2: Favorites
7: Structure

```java
import org.springframework.web.bind.annotation.SessionAttributes;

@Controller
@SessionAttributes("login")
public class LoginController {

    @Autowired
    private UserRepository userRepository;

    @ModelAttribute("login")
    public Login getDefaultLogin(){
        return new Login();
    }

    @PostMapping("/login")
    public String login(@ModelAttribute("login")Login login){
        User user  = userRepository.searchByName(login.getUsername());
        if(user==null){
            throw new ApplicationException("User not found");
        }
        return "search";
    }

    @ExceptionHandler(ApplicationException.class)
    public String handleException(){
        System.out.println("in exception handler of Login Controller");
        return "error";
    }
}
```

However we have already have these defaults model in one of our ControllerAdvice that is DefaultModelAttribute so our Loginontroller do not need to reimplement the login ModelAttribute.



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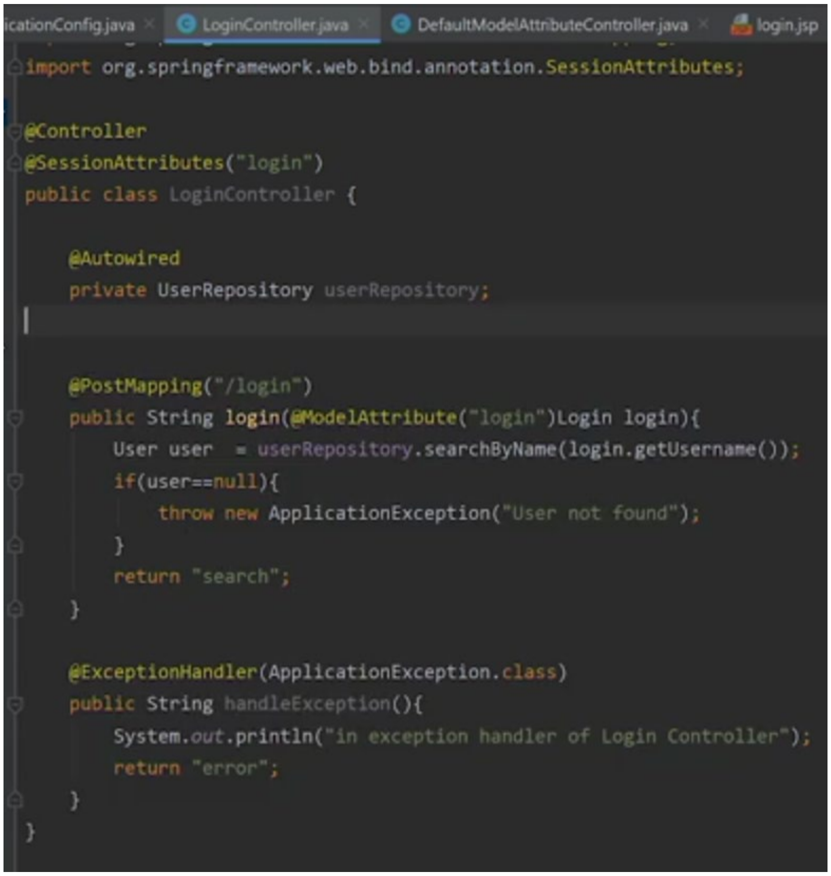
test hplus controllers DefaultModelAttributeController
StringToEnumCon
icationConfig.java LoginController.java DefaultModelAttributeController.java login.jsp LoggingInterceptor.java

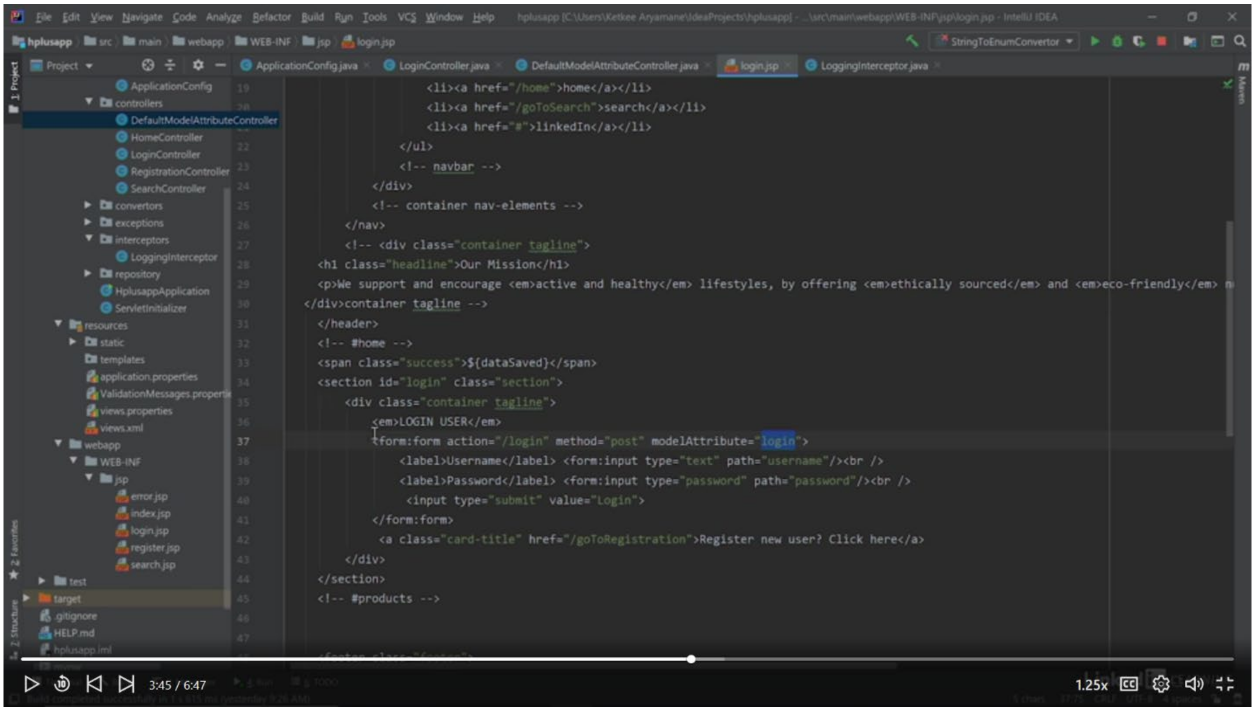
```java
package com.test.hplus.controllers;

import com.test.hplus.beans.Login;
import com.test.hplus.beans.User;
import org.springframework.web.bind.annotation.ControllerAdvice;
import org.springframework.web.bind.annotation.ModelAttribute;

import java.util.Arrays;
import java.util.List;

@ControllerAdvice
public class DefaultModelAttributeController {

    @ModelAttribute("newuser")
    public User getDefaultUser() { return new User(); }

    @ModelAttribute("genderItems")
    public List<String> getGenderItems() { return Arrays.asList(new String[]{"Male", "Female", "Other"}); }

    @ModelAttribute("login")
    public Login getDefaultLogin() { return new Login(); }
}
```

So no need to reimplement LoginAttribute in LoginController

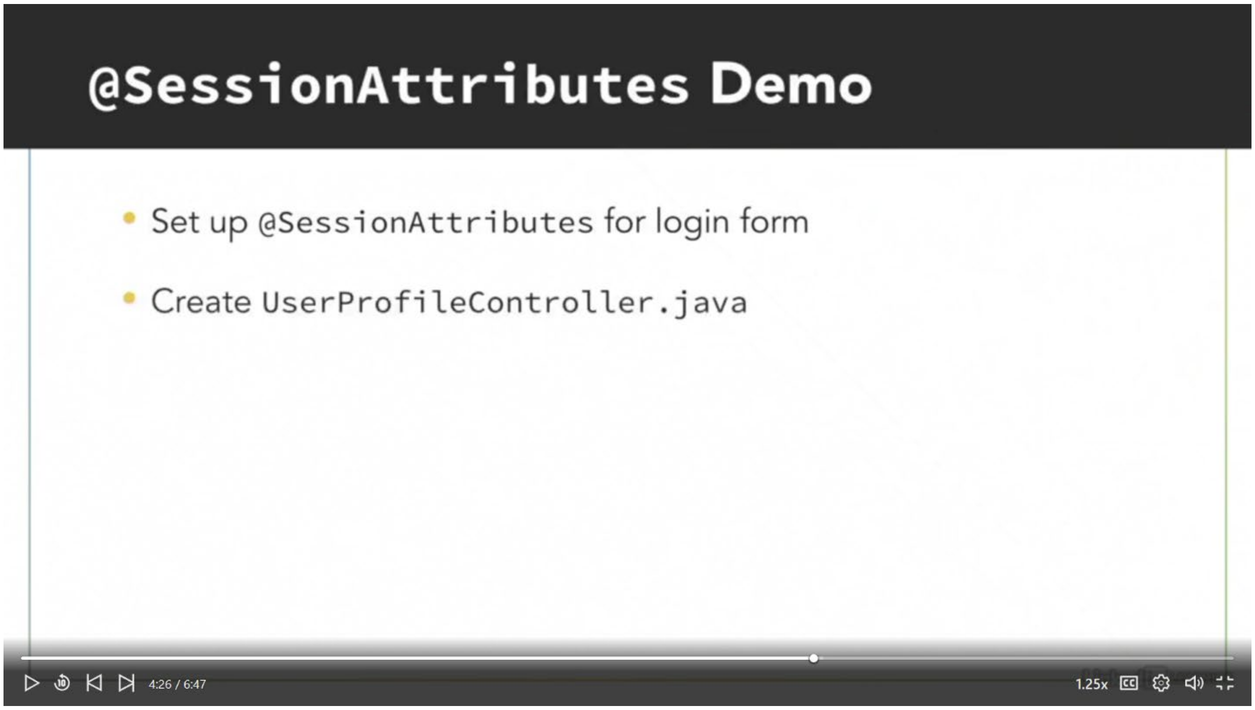


```java
import org.springframework.web.bind.annotation.SessionAttributes;

@Controller
@SessionAttributes("login")
public class LoginController {

    @Autowired
    private UserRepository userRepository;


    @PostMapping("/login")
    public String login(@ModelAttribute("login")Login login){
        User user  = userRepository.searchByName(login.getUsername());
        if(user==null){
            throw new ApplicationException("User not found");
        }
        return "search";
    }

    @ExceptionHandler(ApplicationException.class)
    public String handleException(){
        System.out.println("in exception handler of Login Controller");
        return "error";
    }
}
```

Get the login ModelAttribute from the login.jsp page

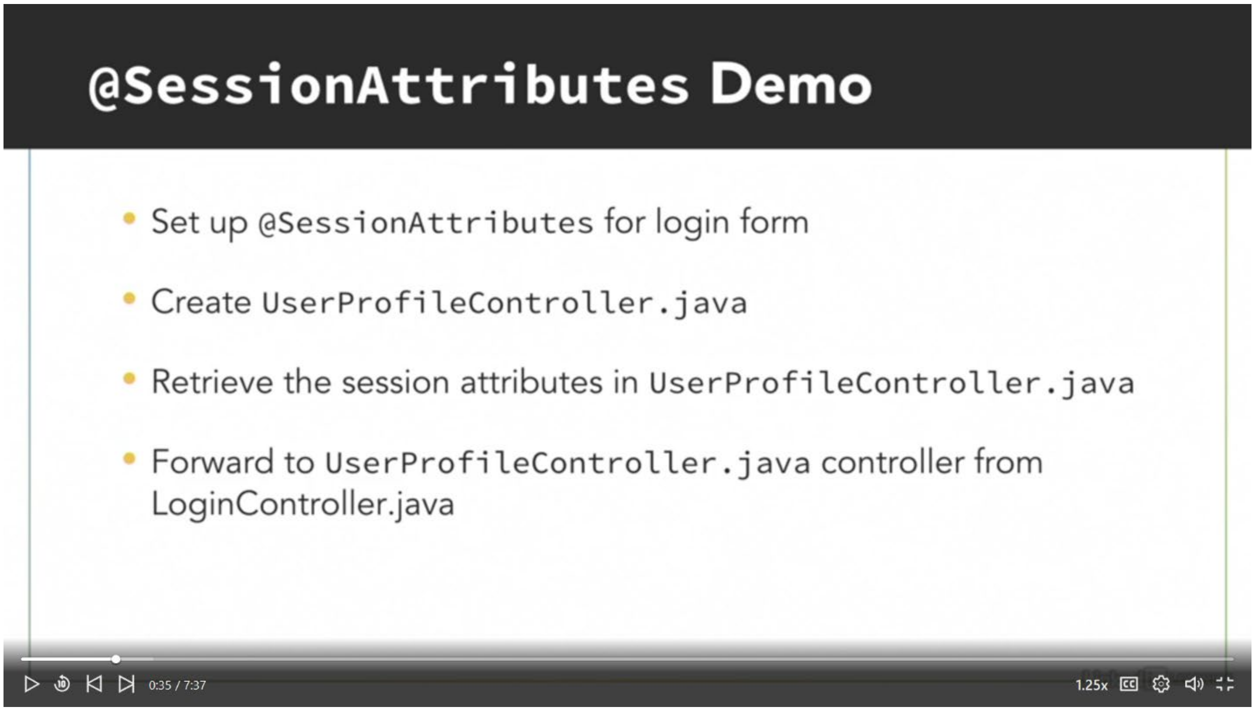


```html
                    <li><a href="/home">home</a></li>
                    <li><a href="/goToSearch">search</a></li>
                    <li><a href="#">linkedIn</a></li>
                </ul>
                <!-- navbar -->
            </div>
            <!-- container nav-elements -->
        </nav>
        <!-- <div class="container tagline">
    <h1 class="headline">Our Mission</h1>
    <p>We support and encourage <em>active and healthy</em> lifestyles, by offering <em>ethically sourced</em> and <em>eco-friendly</em> n
  </div>container tagline -->
    </header>
    <!-- #home -->
    <span class="success">${dataSaved}</span>
    <section id="login" class="section">
        <div class="container tagline">
            <em>LOGIN USER</em>
            <form:form action="/login" method="post" modelAttribute="login">
                <label>Username</label> <form:input type="text" path="username"/><br />
                <label>Password</label> <form:input type="password" path="password"/><br />
                 <input type="submit" value="Login">
            </form:form>
             <a class="card-title" href="/goToRegistration">Register new user? Click here</a>
        </div>
    </section>
    <!-- #products -->
```



@SessionAttributes Demo

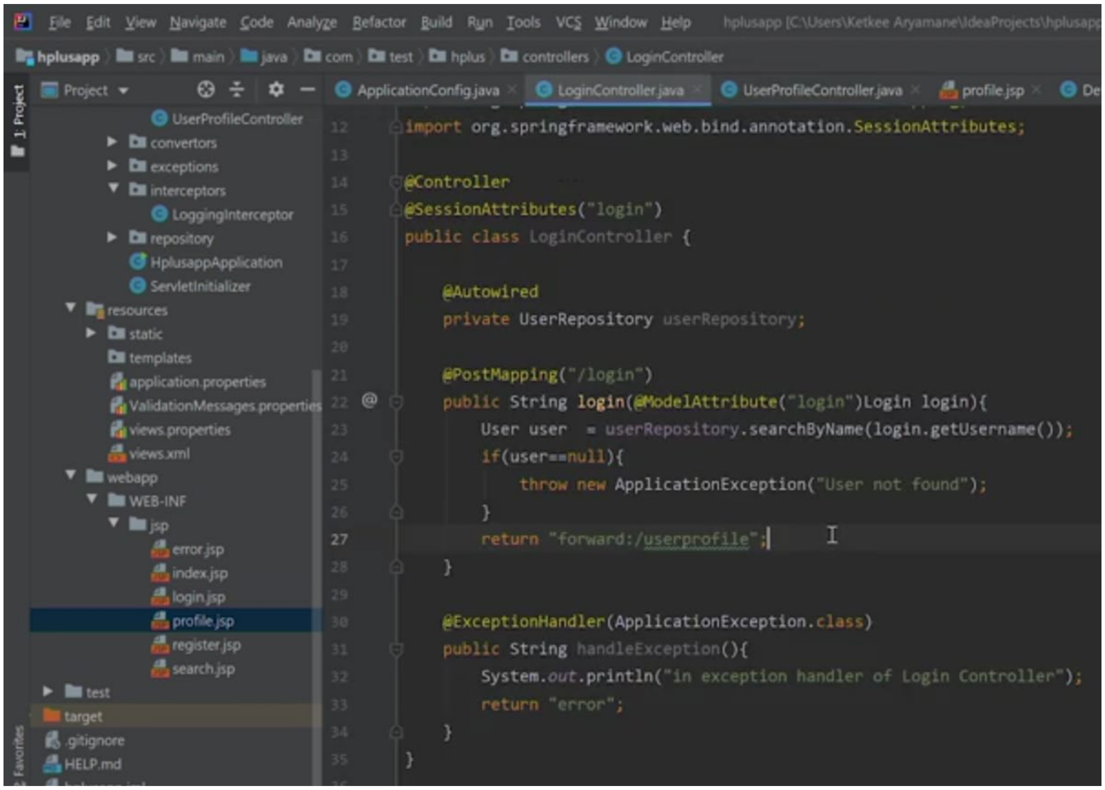
- Set up @SessionAttributes for login form
- Create UserProfileController.java



@SessionAttributes Demo

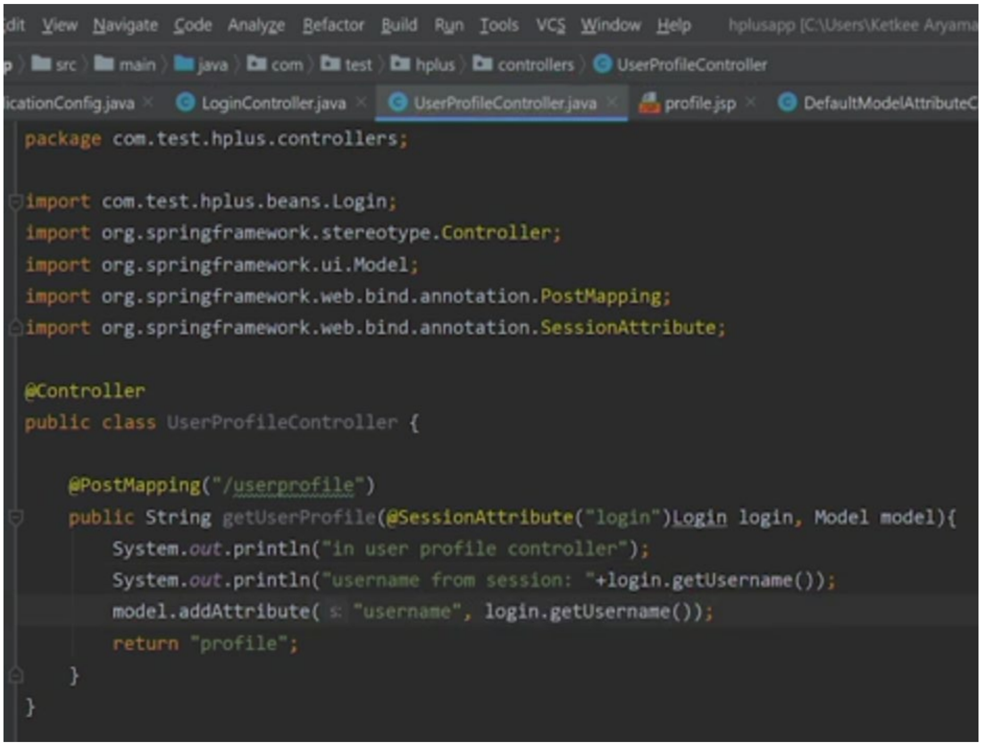
- Set up @SessionAttributes for login form
- Create UserProfileController.java
- Retrieve the session attributes in UserProfileController.java
- Forward to UserProfileController.java controller from LoginController.java

Set the login ModelAttribute on SessionAttribute and forward the controller request to user profile controller from LoginController



```java
import org.springframework.web.bind.annotation.SessionAttributes;

@Controller
@SessionAttributes("login")
public class LoginController {

    @Autowired
    private UserRepository userRepository;

    @PostMapping("/login")
    public String login(@ModelAttribute("login")Login login){
        User user  = userRepository.searchByName(login.getUsername());
        if(user==null){
            throw new ApplicationException("User not found");
        }
        return "forward:/userprofile";
    }

    @ExceptionHandler(ApplicationException.class)
    public String handleException(){
        System.out.println("in exception handler of Login Controller");
        return "error";
    }
}
```

Create a UserProfileController and access username from the SessionAttribute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icationConfig.java
LoginController.java
UserProfileController.java
profile.jsp
DefaultModelAttributeC

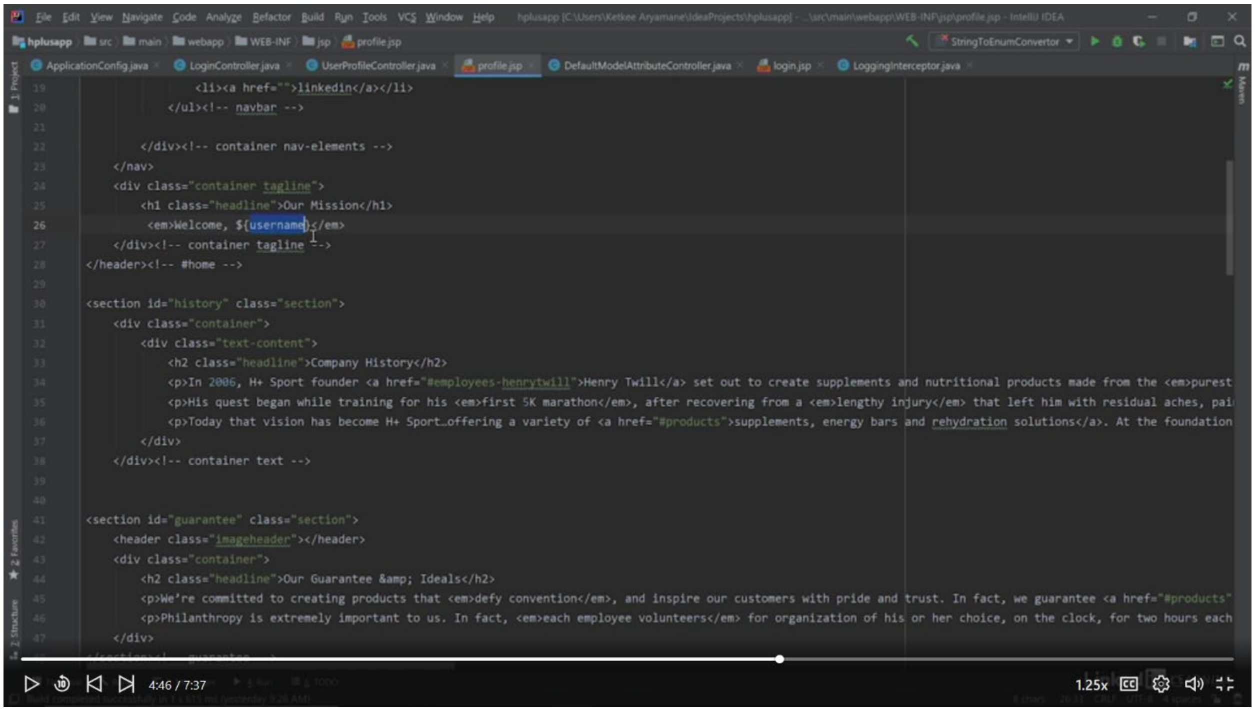
```java
package com.test.hplus.controllers;

import com.test.hplus.beans.Login;
import org.springframework.stereotype.Controller;
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.PostMapping;
import org.springframework.web.bind.annotation.SessionAttribute;

@Controller
public class UserProfileController {

    @PostMapping("/userprofile")
    public String getUserProfile(@SessionAttribute("login")Login login, Model model){
        System.out.println("in user profile controller");
        System.out.println("username from session: "+login.getUsername());
        model.addAttribute( s: "username", login.getUsername());
        return "profile";
    }
}
```

Create a userProfile.jsp and access the username from the stored in ModelAttribute that is set via the SessionAttribute in UserProfileController.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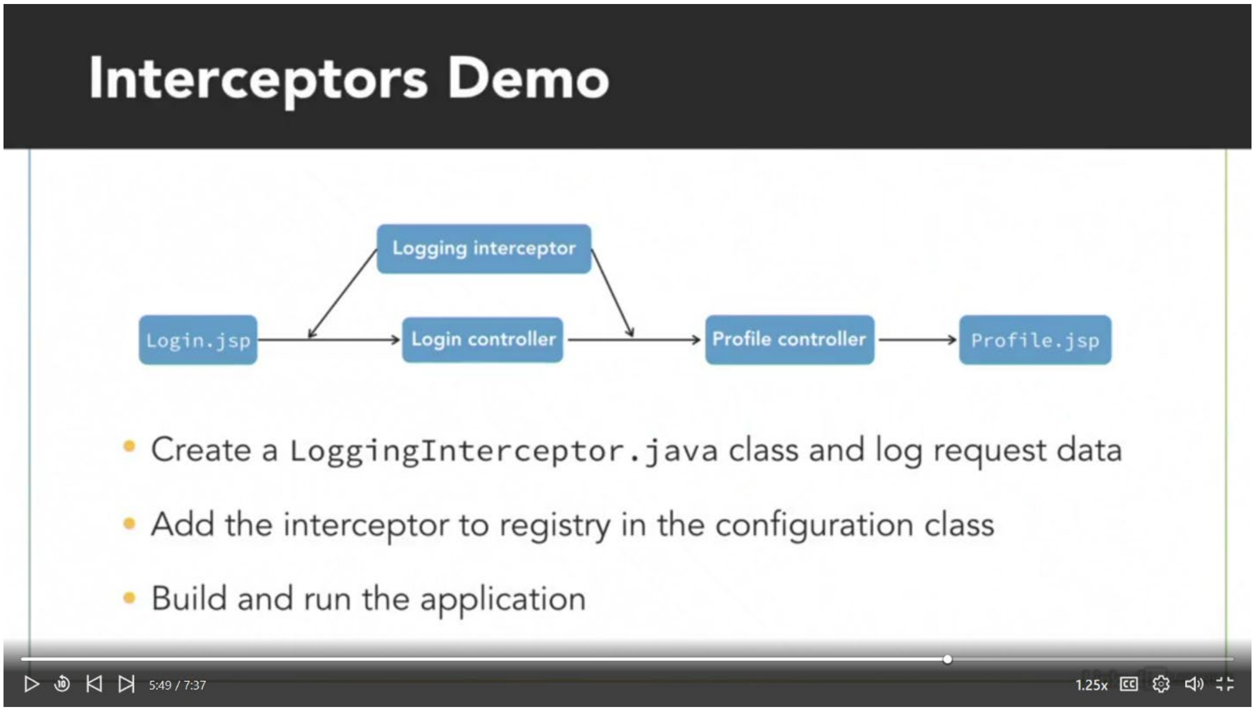
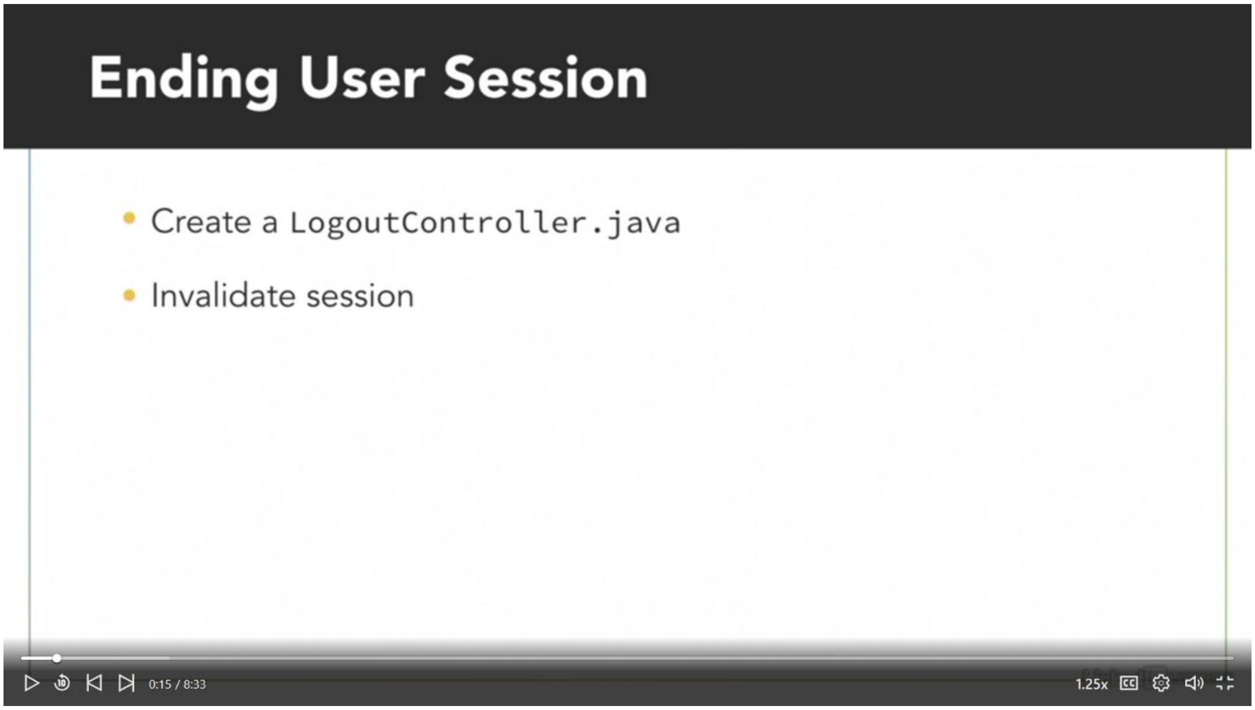
hplusapp › src › main › webapp › WEB-INF › jsp › profile.jsp
StringToEnumConvertor
ApplicationConfig.java
LoginController.java
UserProfileController.java
profile.jsp
DefaultModelAttributeController.java
login.jsp
LoggingInterceptor.java
4:46 / 7:37
1.25x

```
                <li><a href="">linkedin</a></li>
            </ul><!-- navbar -->

        </div><!-- container nav-elements -->
    </nav>
    <div class="container tagline">
        <h1 class="headline">Our Mission</h1>
         <em>Welcome, ${username}</em>
    </div><!-- container tagline -->
</header><!-- #home -->

<section id="history" class="section">
    <div class="container">
        <div class="text-content">
            <h2 class="headline">Company History</h2>
            <p>In 2006, H+ Sport founder <a href="#employees-henrytwill">Henry Twill</a> set out to create supplements and nutritional products made from the <em>purest
            <p>His quest began while training for his <em>first 5K marathon</em>, after recovering from a <em>lengthy injury</em> that left him with residual aches, pai
            <p>Today that vision has become H+ Sport…offering a variety of <a href="#products">supplements, energy bars and rehydration solutions</a>. At the foundation
        </div>
    </div><!-- container text -->


<section id="guarantee" class="section">
    <header class="imageheader"></header>
    <div class="container">
        <h2 class="headline">Our Guarantee &amp; Ideals</h2>
        <p>We're committed to creating products that <em>defy convention</em>, and inspire our customers with pride and trust. In fact, we guarantee <a href="#products"
        <p>Philanthropy is extremely important to us. In fact, <em>each employee volunteers</em> for organization of his or her choice, on the clock, for two hours each
    </div>
```



Interceptors Demo

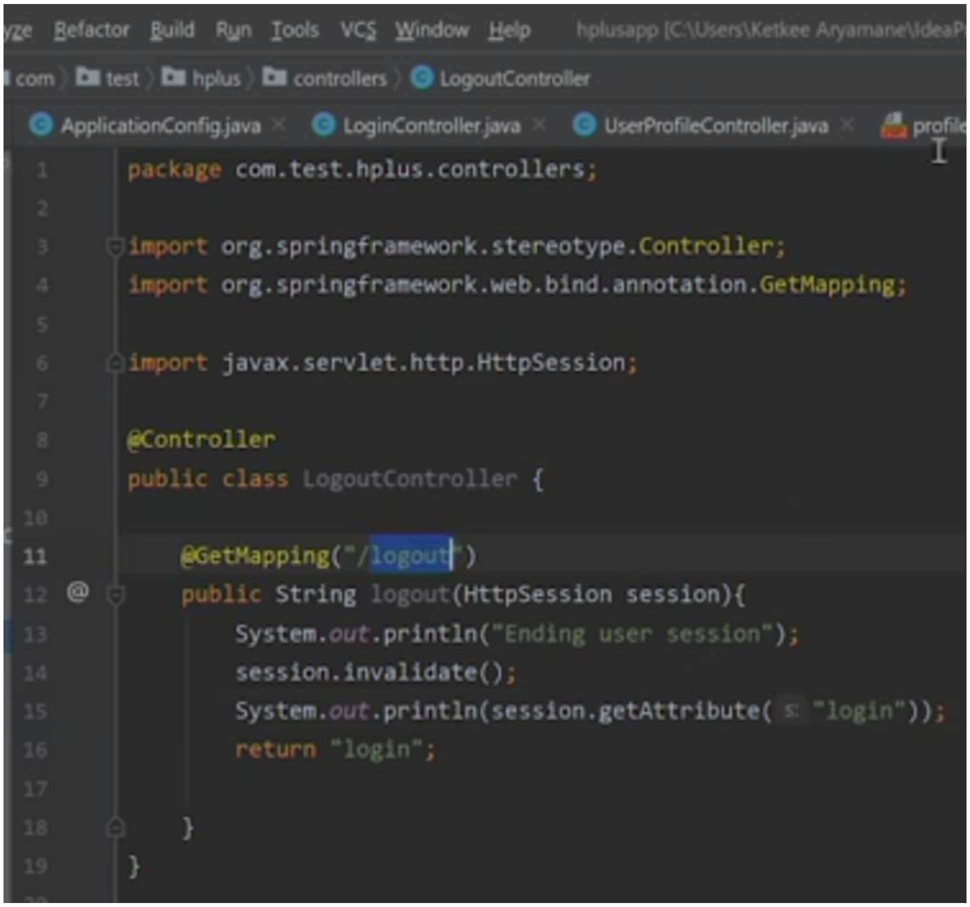
- Create a LoggingInterceptor.java class and log request data
- Add the interceptor to registry in the configuration class
- Build and run the application



Ending User Session

- Create a `LogoutController.java`
- Invalidate session

Create a LogOutController and create a @GetMapping(“logout”) and in the logout() method invalidate the session as session.invalidate();



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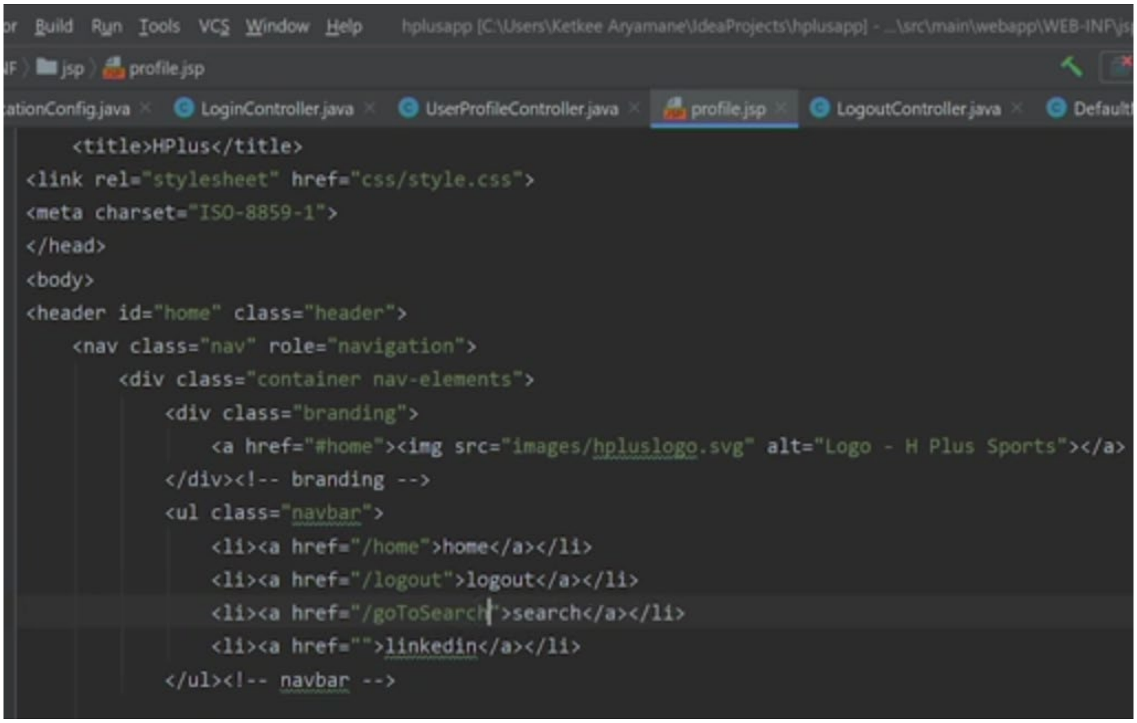
com 〉 test 〉 hplus 〉 controllers 〉 LogoutController
ApplicationConfig.java × LoginController.java × UserProfileController.java × profile

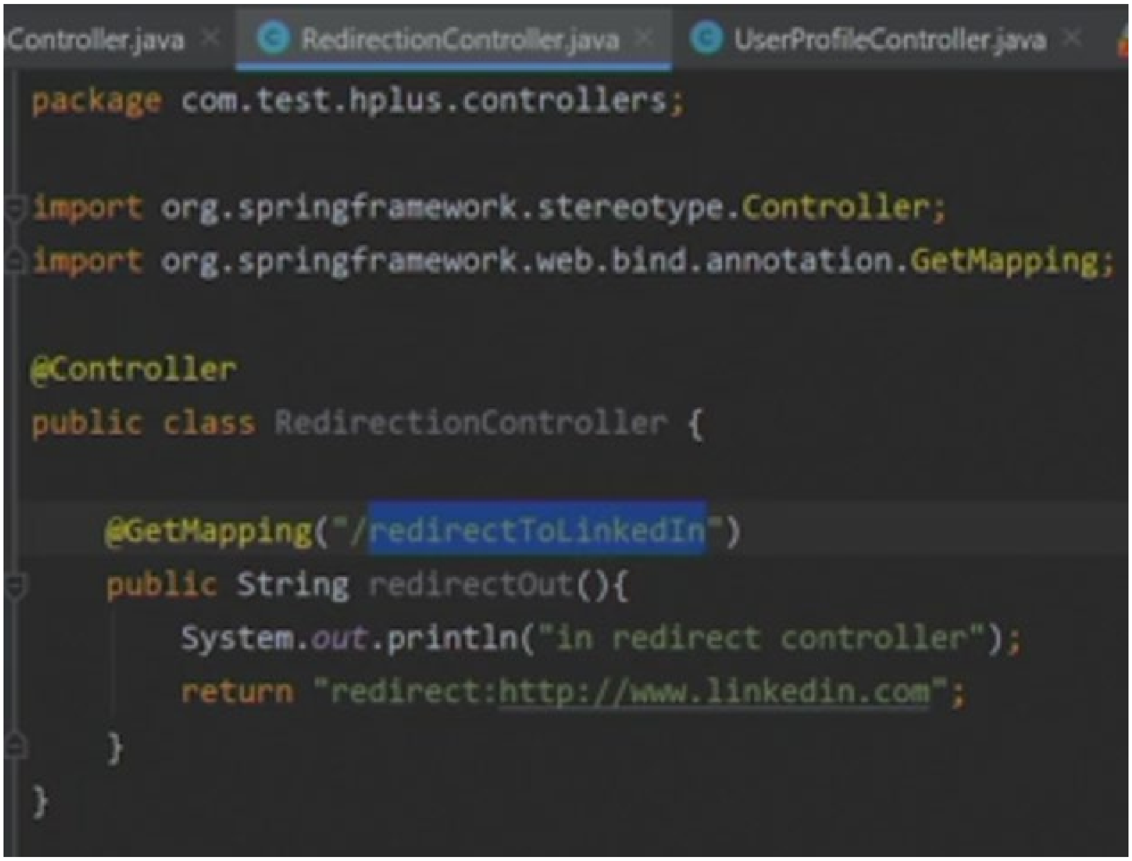
```java
package com.test.hplus.controllers;

import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.GetMapping;

import javax.servlet.http.HttpSession;

@Controller
public class LogoutController {

    @GetMapping("/logout")
    public String logout(HttpSession session){
        System.out.println("Ending user session");
        session.invalidate();
        System.out.println(session.getAttribute( s: "login"));
        return "login";

    }
}
```

Inside userprofile.jsp just have the link of logout to /logout


or Build Run Tools VCS Window Help
hplusapp [C:\Users\Ketkee Aryamane\IdeaProjects\hplusapp] - ...\src\main\webapp\WEB-INF\js
IF jsp profile.jsp
ationConfig.java
LoginController.java
UserProfileController.java
profile.jsp
LogoutController.java
Default

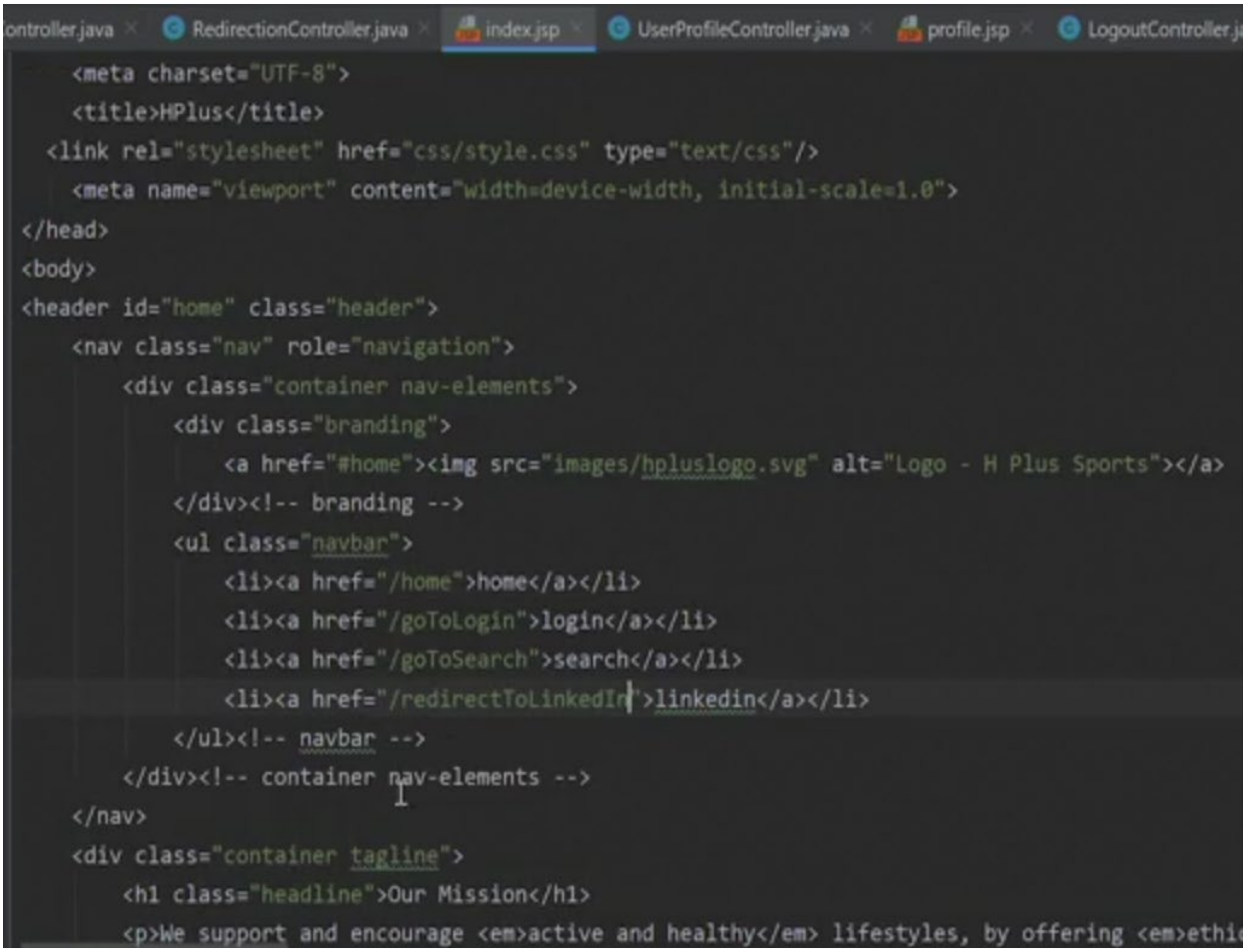
```
    <title>HPlus</title>
<link rel="stylesheet" href="css/style.css">
<meta charset="ISO-8859-1">
</head>
<body>
<header id="home" class="header">
    <nav class="nav" role="navigation">
        <div class="container nav-elements">
            <div class="branding">
                <a href="#home"><img src="images/hpluslogo.svg" alt="Logo - H Plus Sports"></a>
            </div><!-- branding -->
            <ul class="navbar">
                <li><a href="/home">home</a></li>
                <li><a href="/logout">logout</a></li>
                <li><a href="/goToSearch">search</a></li>
                <li><a href="">linkedin</a></li>
            </ul><!-- navbar -->
```

Redirecting outside of an application : Create a RedirectionController for it



```
package com.test.hplus.controllers;

import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.GetMapping;

@Controller
public class RedirectionController {

    @GetMapping("/redirectToLinkedIn")
    public String redirectOut(){
        System.out.println("in redirect controller");
        return "redirect:http://www.linkedin.com";
    }
}
```

Now for all the linekedIn urls map the url in jsps



```
    <meta charset="UTF-8">
    <title>HPlus</title>
  <link rel="stylesheet" href="css/style.css" type="text/css"/>
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
</head>
<body>
<header id="home" class="header">
    <nav class="nav" role="navigation">
        <div class="container nav-elements">
            <div class="branding">
                <a href="#home"><img src="images/hpluslogo.svg" alt="Logo - H Plus Sports"></a>
            </div><!-- branding -->
            <ul class="navbar">
                <li><a href="/home">home</a></li>
                <li><a href="/goToLogin">login</a></li>
                <li><a href="/goToSearch">search</a></li>
                <li><a href="/redirectToLinkedIn">linkedin</a></li>
            </ul><!-- navbar -->
        </div><!-- container nav-elements -->
    </nav>
    <div class="container tagline">
        <h1 class="headline">Our Mission</h1>
        <p>We support and encourage <em>active and healthy</em> lifestyles, by offering <em>ethi
```

Now run your application .