USER AND UPDATING CODE

Open pom.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
      <modelVersion>4.0.0</modelVersion>
      <parent>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-parent</artifactId>
            <version>2.4.3</version>
            <relativePath /> <!-- lookup parent from repository -->
      </parent>
      <groupId>com.p3</groupId>
      <artifactId>UserManager</artifactId>
      <version>0.0.1-SNAPSHOT</version>
      <name>UserManager</name>
      <description>Searching for a Specific User and Updating the User
Information.</description>
      <properties>
            <java.version>1.8</java.version>
      </properties>
      <dependencies>
            <dependency>
                  <groupId>org.springframework.boot</groupId>
                  <artifactId>spring-boot-starter-data-jpa</artifactId>
            </dependency>
            <dependency>
                  <groupId>org.springframework.boot</groupId>
                  <artifactId>spring-boot-starter-web</artifactId>
            </dependency>
            <dependency>
                  <groupId>org.projectlombok</groupId>
                  <artifactId>lombok</artifactId>
                  <optional>true</optional>
```

```xml
        </dependency>
        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-test</artifactId>
            <scope>test</scope>
        </dependency>
        <dependency>
            <groupId>org.apache.tomcat.embed</groupId>
            <artifactId>tomcat-embed-jasper</artifactId>
            <scope>provided</scope>
        </dependency>

        <dependency>
            <groupId>javax.xml.bind</groupId>
            <artifactId>jaxb-api</artifactId>
        </dependency>

        <dependency>
            <groupId>org.javassist</groupId>
            <artifactId>javassist</artifactId>
            <version>3.25.0-GA</version>
        </dependency>

        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-devtools</artifactId>
            <scope>runtime</scope>
            <optional>true</optional>
        </dependency>
    </dependencies>

    <build>
        <plugins>
            <plugin>
                <groupId>org.springframework.boot</groupId>
                <artifactId>spring-boot-maven-plugin</artifactId>
                <configuration>
```

```xml
                    <excludes>
                        <exclude>

    <groupId>org.projectlombok</groupId>
                            <artifactId>lombok</artifactId>
                        </exclude>
                    </excludes>
                </configuration>
            </plugin>
        </plugins>
    </build>

</project>
```
Src/main/java

```java
package com.p3.UserManager;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class UserManagerApplication {

        public static void main(String[] args) {

                SpringApplication.run(UserManagerApplication.class, args);

        }

}
```

Create package com.p3.UserManager.controller

```java
package com.example.UserManager.controller;

import org.springframework.boot.web.servlet.error.ErrorController;

import org.springframework.web.bind.annotation.RequestMapping;

public class AppErrorController implements ErrorController {

@RequestMapping("/error")
```

```java
public String handleError() {

    //do something like logging

    return "error";

}
@Override

public String getErrorPath() {

    return null;

}
}
```

MainController.java

```java
package com.p3.UserManager.controller;

import org.springframework.stereotype.Controller;

import org.springframework.ui.ModelMap;

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

import org.springframework.web.bind.annotation.RequestParam;

@Controller

public class MainController {

    @GetMapping(value = "/")

    public String showIndexPage(ModelMap model,

@RequestParam(value = "name", required = false, defaultValue = "World") String name)
{

            model.addAttribute("name", name);

            return "index";

    }
```

```
        }
```

UserController.java

```java
package com.p3.UserManager.controller;

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.stereotype.Controller;

import org.springframework.ui.ModelMap;

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

import org.springframework.web.bind.annotation.ModelAttribute;

import org.springframework.web.bind.annotation.PostMapping;

import org.springframework.web.bind.annotation.RequestMapping;

import org.springframework.web.bind.annotation.RequestMethod;

import org.springframework.web.bind.annotation.RequestParam;

import com.example.UserManager.entities.User;

import com.example.UserManager.services.UserService;

@Controller

public class UserController {

//controls the functionality of the user entity

        @Autowired

        private UserService userService;

        Logger logger = LoggerFactory.getLogger(UserController.class);

        @GetMapping("/users")

        public String showUsers(ModelMap model) {
```

```java
                logger.info("Getting all users");

                Iterable<User> users = userService.GetAllUsers();

                logger.info("Passing users to view");

                model.addAttribute("users", users );

                return "users";

        }

        @RequestMapping(value ="/search/{id}", method = RequestMethod.POST)

        public String searchUser(ModelMap model, @RequestParam("id") int id) {

                logger.info("Searching for a user");

                User user = userService.GetUserById(id);

                logger.info("Passing Searched User to View");

                model.addAttribute("userSearch", user);

                return "search";

        }

        @PostMapping("search/update")

        public String updateUser(ModelMap model, @ModelAttribute("update") User
    user) {

                logger.info("Updating a User");

                userService.UpdateUser(user);

                model.addAttribute("updatedUser", user);

                return "update";

        }

    }
```

UserExceptionController.java

```java
package com.p3.UserManager.controller;

import org.springframework.http.HttpStatus;

import org.springframework.http.ResponseEntity;

import org.springframework.web.bind.annotation.ControllerAdvice;

import org.springframework.web.bind.annotation.ExceptionHandler;

import com.example.UserManager.exceptions.UserNotFoundException;

@ControllerAdvice

public class UserExceptionController {

        @ExceptionHandler(value=UserNotFoundException.class)

        public ResponseEntity<Object> exception(UserNotFoundException ex) {

                return new ResponseEntity<>("Product not found",
HttpStatus.NOT_FOUND);

        }

}
```

User.java

```java
package com.p3.UserManager.entities;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.GenerationType;

import javax.persistence.Id;

@Entity

public class User { //The Entity of a User; What it is.

        @Id

        @GeneratedValue(strategy=GenerationType.AUTO)
```

```java
private Integer id;

private String name;

private String email;

private String password;

public User() {

        super();

}

public User(Integer id, String name, String email, String password) {

        super();

        this.id = id;

        this.name = name;

        this.email = email;

        this.password = password;

}

public Integer getId() {

        return id;

}

public void setId(Integer id) {

        this.id = id;

}

public String getName() {

        return name;

}

public void setName(String name) {
```

```java
            this.name = name;

        }

        public String getEmail() {

            return email;

        }

        public void setEmail(String email) {

            this.email = email;

        }

        public String getPassword() {

            return password;

        }

        public void setPassword(String password) {

            this.password = password;

        }

        @Override

        public String toString() {

            return (id.toString() + " " + name + " " + email + " " + password);

        }

    }
```

UserNotFoundException.java

```java
    package com.p3.UserManager.exceptions;

    public class UserNotFoundException extends RuntimeException {
    private static final long serialVersionUID = 1L;
    }
```

Create package com.p3.UserManager.repositories

```java
package com.p3.UserManager.repositories;

import org.springframework.data.repository.CrudRepository;

import org.springframework.stereotype.Repository;

import com.example.UserManager.entities.User;

@Repository

public interface UserRepository extends CrudRepository<User, Integer> {

public User findByName(String name);

}
```

Create package com.p3.UserManager.services

```java
package com.p3.UserManager.services;

import java.util.Optional;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.stereotype.Service;

import com.example.UserManager.entities.User;

import com.example.UserManager.exceptions.UserNotFoundException;

import com.example.UserManager.repositories.UserRepository;

@Service

public class UserService {

    @Autowired

    private UserRepository userRepository;

    public Iterable<User> GetAllUsers() {

    return userRepository.findAll();

    }
```

```java
        public User GetUserByName(String name) {

        return userRepository.findByName(name);

        }

        public User GetUserById(Integer id) {

        Optional<User> foundUser = userRepository.findById(id);

        if(!foundUser.isPresent()) throw new UserNotFoundException();

        return foundUser.get();

        }

        public User UpdateUser(User userToUpdate) {

        return userRepository.save(userToUpdate);

        }

    }
```

Src/main/resources

application.proprties

```
spring.jpa.hibernate.ddl-auto=update
spring.datasource.url=jdbc:mysql://localhost:3306/work
spring.datasource.username=root
spring.datasource.password=12345
logging.level.org.springframework.web: DEBUG
spring.mvc.view.prefix=/WEB-INF/jsp/
spring.mvc.view.suffix=.jsp
server.port=8080
```

src/main/webapp/WEB-INF/jsp

error.jsp

```html
<!DOCTYPE html>
<html>
<body>
<h1>Something went wrong! </h1>
```

```html
<h2>Our Engineers are on it</h2>
<a href="/">Go Home</a>
</body>
</html>
```

index.jsp

```html
<html>
<body>
<h2>Spring Application</h2>

<h2 class="hello-title">Hello ${name}!</h2>
<a href="users">List Users</a>
<form action="search/{id}" method="post">
Enter ID Number: <input name="id" type="text" id="id" placeholder="1" required/>
<input name="Submit" type="submit"/>
</form>

</body>
</html>
```

search.jsp

```html
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<%@ taglib prefix="form" uri="http://www.springframework.org/tags/form"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
    "http://www.w3.org/TR/html4/loose.dtd">

<html>
<style>
table {
        float: left;
}

th {
        border-bottom: 1px solid black;
        text-align: left;
}
</style>
<body>

        <h2>Search for User</h2>

        <table>
```

```html
            <tr>
                    <th>ID</th>
                    <th>Name</th>
                    <th>Email</th>
                    <th>Password</th>
            </tr>
            <tr>

                    <td>${userSearch.id}</td>
                    <td>${userSearch.name}</td>
                    <td>${userSearch.email}</td>
                    <td>${userSearch.password}</td>
            </tr>
        </table>

        <br />
        <br />
        <br />
        <br />
        <br />
        <br />
        <form:form action="update" method="post" commandName="update">
                <h3>Update This User?</h3>
                        <p>User ID: ${userSearch.id}</p>
                        <input type="hidden" name="id" id="id" value="${userSearch.id}"
        required/>
                        <label for="name">New Name:</label><br/>
                        <input type="text" name="name" id="name"
        value="${userSearch.name}" required/><br/>
                        <label for="email">New Email:</label> <br/>
                        <input type="text" name="email" id="email"
        value="${userSearch.email}" required/><br/>
                        <label for="password">New Password:</label><br/>
                <input type="text" name="password" id="password"
        value="${userSearch.password}" required/><br/><br/>
                        <input type="submit" value="Submit"/>
        </form:form>
        <br />
        <br />
        <a href="/">Return to Menu</a>
    </body>
    </html>
```

update.jsp

```html
    <html>
```

```
<body>
<h2>Update Successful</h2>
Updated User Credentials: ${updatedUser.toString()}
<br/><br/>
<a href="/">Return to Menu</a>
</body>
</html>
```

users.jsp

```
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>
<html>
<style>
table {
float: left;
}

table, th, td {
border: 1px solid black;
}
</style>
<head></head>
<body>
        <h2>Users Page</h2>
        <table>
        <tr><th>ID</th><th>Name</th><th>Email</th><th>Password</th></tr>
                <c:forEach items="${users}" var="user" varStatus="count">
                        <tr id="${count.index}">
                        <td>${user.id}</td>
                        <td>${user.name}</td>
                        <td>${user.email}</td>
                        <td>${user.password}</td>
                        </tr>
                </c:forEach>
        </table>
</body>
</html>
```