Online vehicle parking system

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What the project does?

1. The Online Vehicle Parking System is a system that enables customers/drivers to reserve a parking space.
2. It also allows the customers/drivers to view the parking status.
3. Parking owners can manage the parking lot. Registration and login functionality applicable for owners only.
4. Owner need to mention name, email, username and password. Password is stored in database in encrypted format using bcrypt password encoder.
5. After logging in owner can add, modify and delete parking slot information. Separate pages given for two-wheeler and four-wheeler.
6. Customer can book slots directly. Separate pages are given for two-wheeler and four-wheeler parking.
7. Customer need name and email ID for check-in. Same name and email are required for checkout.
8. After checkout user will redirected to billing page. User will be billed according to booking hours.
9. The designed system was implemented using different development tools which include HTML for creating interfaces, CSS for styling web pages, Bootstrap for developing responsive, mobile-first website and spring security as an input validation tool.
10. MySQL Workbench was used to build the database and JSP used as a server-side scripting language to connect the user interfaces to the database.

One scenario – Registration of owner

1. Presentation
    a. When user goes for registration, a form opens where user need to fill up information
    b. This data is passed to the controller
2. Service
    a. Controller receives the URL and route to the appropriate handlers
    b. Using @request param required information is received in controller is stored in object.
    c. Password is passed through bcrypt encryption method and saved in a string.
    d. One method is created to save this information in database
    e. Object is created having with parameters according to registration form
    f. This object is passed through save_information method
3. DAO
    a. This information is saved on the database

Some Scenarios Where We Got Struck and How Did We Overcome.

1. Login page problem
    a. After logout if we press back button of browser, after login page opens which should be secure page.
    b. To solve this problem, we use spring web security module.
    c. It provides security layer before controller.
    d. Using this we keep some URLs under authentication access and other URLs no need of authorization.
2. Disable link using conditions
    a. Check in check out links have no standard method to disable then using conditions
    b. We disable and enabled them logically using onclick event
    c. Sample code is given below
    d.
```
<c:if test="${listall1.booking_status eq false }">
    <c:set var="ist" value="Unavailable" />
    <c:set var="its1" value="false" />
```
    e.
```
href="checkin?id=<c:out value='${listal
onclick="return ${its1}">CheckIn</a> &n
```

Learnings during the project

1. We got thorough understanding spring boot, JSP, JSTL.
2. We learned some new topics like spring security
3. We understand working flow of web application using spring boot.
4. We understand the importance of git and git branches while working in team.
5. We learned agile methodology it's necessity.
6. We learned to break down the project and prioritize the things. Asana scrum board helped in planning and task assignments.
7. We learned many concepts in java, JPA, Hibernate
8. We understand the basic knowledge of unit testing
9. We understand that how framework improve program.
10. We learned how Spring data JPA and hibernate reduces the lines of code in dao layer.
11. We learned to implement oops concepts.