

## Assignment5

### Part 1

Along with the **MVC** framework—that is, a framework that divides an application's implementation into three discrete component roles: models, views, and controllers (see Assignment4 requirements)—programmers and web developers must be able to design and deploy data-driven applications. When doing so, the acronym CRUD is used, which generally means create, read, update and delete—sometimes, including SCRUD with an "S" for Search). These are the four basic functions of persistent storage.

1. Review previously cloned **lis4368\_student\_files** [Bitbucket](#) repo subdirectories and files:
  - a. Review subdirectories and files, especially **META-INF** and **WEB-INF**.
  - b. Each assignment *\*must\** have its own **global** subdirectory.

### Part 2

#### 1. Helper videos:

- a. A5a: <https://youtu.be/XPy0k1TGOPw>
- b. A5b: <https://youtu.be/MIXLqvY6Mms>
- c. Debugging (*\*required\** before seeking assistance): [https://youtu.be/Y060J5\\_V4yg](https://youtu.be/Y060J5_V4yg)

2. Include server-side validation from A4.

#### Compiling servlet files:

**Important! These are ONLY Examples: (\*your\* paths most likely will differ):**

3. Compile the following class and servlet files:

**Windows:** cd to **C:\tomcat\webapps\lis4368\WEB-INF\classes**

**javac -cp . crud/data/\*.java**

**javac -cp .;c:\tomcat\lib\servlet-api.jar crud/admin/CustomerServlet.java**

**Mac:** cd to **/Applications/tomcat/webapps/lis4368/WEB-INF/classes**

**javac -cp . crud/data/\*.java**

**javac -cp ./Applications/tomcat/lib/servlet-api.jar crud/admin/CustomerServlet.java**

4. **README** displays screenshots of pre-, post-valid user form entry, as well as MySQL customer table entry (see screenshots below).
5. Use git to push *\*all\** **lis4368** files and changes to **your** remote **course** [Bitbucket](#) repo
6. **Helper instructions:**  
**Lesson 7 - Regular Expressions:** <http://www.qcitr.com/usefullinks.htm#lesson7>

#### Note:

**Special consideration to be aware of when completing thanks.jsp:**

- 1) In **thanks.jsp** file:

```
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
```

That is, it should list **uri**, not url.

### Deliverables:

1. Provide **Bitbucket** read-only access to **lis4368** repo, include links to the other assignment repos you created in **README.md**, using **Markdown** syntax (**README.md** must also include screenshots as per above and below.)
2. **Blackboard Links:** lis4368 **Bitbucket** repo

### Valid User Form Entry (customerform.jsp)

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## Assignment 5

### Basic server-side validation

Prepared statements to help prevent SQL injection.  
JSTL to prevent XSS. Also, adds insert functionality to A4.

(Table: customer)

Display Customers

FName:	<input type="text" value="John"/>
LName:	<input type="text" value="Doe"/>
Street:	<input type="text" value="123 Main St."/>
City:	<input type="text" value="Tallahassee"/>
State:	<input type="text" value="FL"/>
Zip:	<input type="text" value="32304"/>
Phone:	<input type="text" value="8505551212"/>
Email:	<input type="text" value="jdoe@aol.com"/>
Balance:	<input type="text" value="3000"/>
Total Sales:	<input type="text" value="5000"/>
Notes:	<input type="text" value="Just another test."/>

Submit

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# My Online Portfolio

## Thanks for joining our customer list!

Here is the information that you entered:

**FName:** John  
**LName:** Doe  
**Street:** 123 Main St.  
**City:** Tallahassee  
**State:** FL  
**Zip:** 32304  
**Phone:** 8505551212  
**Email:** jdoe@aol.com  
**Balance:** 3000  
**Total Sales:** 5000  
**Notes:** Just another test.

To enter another record click Return.

Return

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## Associated Database Entry

```

Command Prompt - mysql -u mjowett -p --port 3308
c:\mysql\bin>mysql -u mjowett -p --port 3308
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 6
Server version: 5.6.22 MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use mjowett;
Database changed
mysql> show tables;
+-----+
| Tables_in_mjowett |
+-----+
| customer           |
| pet                |
| petstore            |
+-----+
3 rows in set (0.00 sec)

mysql> select * from customer;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| cus_id | cus_fname | cus_lname | cus_street | cus_city | cus_state | cus_zip | cus_phone | cus_email | cus_balance | cus_total_sales | cus_notes |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1      | Billy    | Bob       | 502 Shady Dr. | Minneapolis | MN       | 0004011238 | 6124567890 | bbob@aol.com | 139.52      | 987.61          | notes1    |
| 2      | Bobby    | Sue       | 19567 Rutherford Cir. | Charleston | WV       | 0058349012 | 3016731278 | sbobby@hotmail.com | 49.87       | 1356.89         | notes2    |
| 3      | Stevie   | Ray       | 8624 Baldwin Dr. | Panama City Beach | FL       | 0324059134 | 8509980123 | sray@fsu.edu | 9.34        | 567.63          | notes3    |
| 4      | Felicia | Fuller    | 7831 Tempest Ln. | Sturgis    | SD       | 0598431021 | 5052875412 | ffuller@msn.com | 0.00        | 784.29          | notes4    |
| 5      | Victoria | Vallis    | 63178 Northshore Dr. | Laramie    | WY       | 0000457612 | 7071236547 | vvallis@yahoo.com | 1189.32     | 9999.99         | notes5    |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> select * from customer;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| cus_id | cus_fname | cus_lname | cus_street | cus_city | cus_state | cus_zip | cus_phone | cus_email | cus_balance | cus_total_sales | cus_notes |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1      | Billy    | Bob       | 502 Shady Dr. | Minneapolis | MN       | 0004011238 | 6124567890 | bbob@aol.com | 139.52      | 987.61          | notes1    |
| 2      | Bobby    | Sue       | 19567 Rutherford Cir. | Charleston | WV       | 0058349012 | 3016731278 | sbobby@hotmail.com | 49.87       | 1356.89         | notes2    |
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| 5      | Victoria | Vallis    | 63178 Northshore Dr. | Laramie    | WY       | 0000457612 | 7071236547 | vvallis@yahoo.com | 1189.32     | 9999.99         | notes5    |
| 6      | John     | Doe       | 123 Main St. | Tallahassee | FL       | 0000052306 | 8505551212 | jdoe@aol.com | 3000.00     | 3000.00         | Just another test. |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql>

```

### Part 3

#### Answer the following questions (Chs. 13 - 15):

1. A Session object contains information about the mail session such as
  - a. the protocol
  - b. the host
  - c. the port
  - d. all of the above
  - e. none of the above
2. A digital secure certificate is provided
  - a. usually for a fee from a certificate authority
  - b. free from a certificate authority
  - c. for a fee from a registration authority
  - d. free from a registration authority
3. An example of mail client software would be
  - a. the email app on a mobile device
  - b. the Microsoft Outlook application on a computer
  - c. Gmail in a web browser
  - d. all of the above
  - e. none of the above
4. Before a secure connection is established, the server uses a \_\_\_\_\_ to authenticate itself.
  - a. a client certificate
  - b. a server certificate
  - c. both a and b
  - d. none of the above
5. Once you establish a secure connection, the application
  - a. returns to a non-secure connection for subsequent requests
  - b. uses absolute URLs to continue using the secure connection
  - c. continues to use a secure connection until an absolute URL specifies a non-secure connection
  - d. continues to use a secure connection until until a relative URL specifies a non-secure connection
6. SSL strength can depend on
  - a. the strength provided by the certificate
  - b. the strength supported by the web server
  - c. the strength supported by the browser
  - d. all of the above
7. The maximum SSL strength for an application's connections is determined by
  - a. the SSL methods that you use
  - b. the certification authority
  - c. the registration authority
  - d. the digital secure certificate
8. To create a self-signed certificate, you need to create a/an \_\_\_\_\_ file.
  - a. HTML
  - b. keystore
  - c. JAR
  - d. none of the above

9. To specify a named parameter in a JPQL query string, code a/an \_\_\_\_\_ followed by the name of the parameter.

- a. semicolon (;)
- b. colon (:)
- c. question mark (?)
- d. none of the above

10. To specify that a business class is an entity, you use the \_\_\_\_\_ annotation.

- a. @Id
- b. @Entity
- c. @GeneratedValue
- d. none of the above

11. To specify the relationships between your business classes, you can use the \_\_\_\_\_ annotation.

- a. @OneToMany
- b. @ManyToOne
- c. @OneToOne
- d. all of the above
- e. none of the above

12. To use SSL to transmit data, the \_\_\_\_\_ must provide authentication.

- a. the client
- b. both the client and the server
- c. the server
- d. none of the above

13. To use a secure connection, you need to

- a. install a digital secure certificate on your web server
- b. configure your web server so it defines a secure connection
- c. both a and b
- d. none of the above

14. When a browser makes an initial attempt to communicate with a server over a secure connection, the server authenticates itself by

- a. providing a digital secure certificate to the client
- b. decrypting all data
- c. confirming the identity of the client
- d. authorizing the client

15. When an email is sent it goes from the

- a. mail client software to that client's mail server software to the receiving client's mail server, and then to the receiving mail client.
- b. mail client software to that client's mail server software to the receiving mail client, and then to the receiving client's mail server.
- c. mail client software to the receiving mail client to the receiving client's mail server, and then to that client's mail server software
- d. none of the above

16. When using this code:

```
Address bccAddress = new InternetAddress("jsmith@gmail.com");  
message.setRecipient(Message.RecipientType.BCC, bccAddress);
```

- a. the email address will appear in the message
- b. the email address will not appear in the message
- c. the message will go to multiple recipients
- d. none of the above

17. Which is a JPA implementation?

- a. Hibernate
- b. EclipseLink
- c. TopLink
- d. all of the above
- e. none of the above

18. Which protocol is used to send a message from one mail server to another?

- a. POP
- b. IMAP
- c. SMTP
- d. MIME

19. Which protocol is used to transfer a message from a mail server and to a mail client?

- a. POP
- b. IMAP
- c. SMTP
- d. MIME

20. You can use the \_\_\_\_\_ methods of the entity manager to insert, update, and delete data.

- a. persist
- b. merge
- c. remove
- d. all of the above
- e. none of the above

21. \_\_\_\_\_ don't use the get and set methods of the class to get and set the values of the fields. Instead they access the fields directly.

- a. Field annotations
- b. Getter annotations
- c. Named parameters
- d. all of the above
- e. none of the above

22. \_\_\_\_\_ is an object-oriented query language defined as part of the JPA specification.

- a. DDL (data definition language)
- b. DML (data manipulation language)
- c. JPQL (Java Persistence Query Language)
- d. none of the above
- e. all of the above

23. \_\_\_\_\_ use the get and set methods of the class to get and set the values of the fields.

- a. Field annotations
- b. Getter annotations
- c. Named parameters
- d. all of the above
- e. none of the above