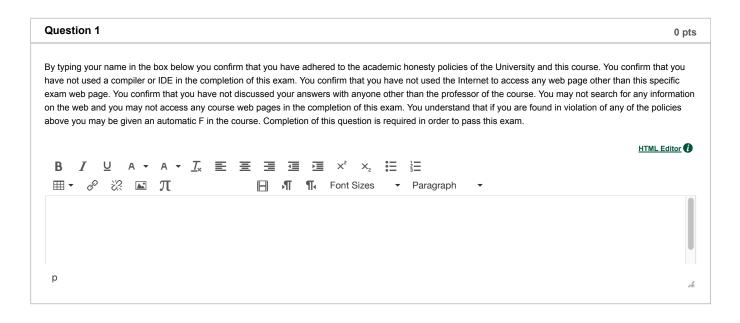# Exam 2
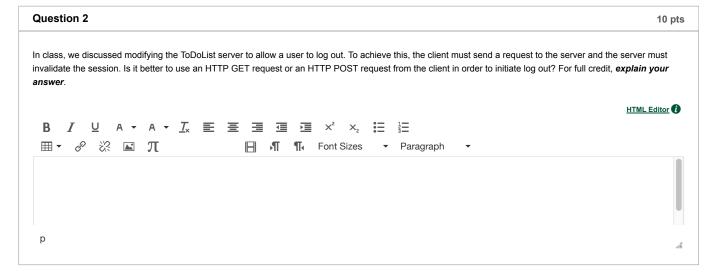
⚠ This is a preview of the published version of the quiz

Started: Apr 20 at 9:35am

Quiz Instructions

This exam must be completed during the class period on Wednesday, May 6, 2015. You may **not** use any additional resources to complete this exam. You may not use a compiler, you may not use the Internet beyond what is required to access the exam on canvas, you may not use any books or notes, and you may not discuss any part of your answers with anyone else.

Question 1	0 pts

By typing your name in the box below you confirm that you have adhered to the academic honesty policies of the University and this course. You confirm that you have not used a compiler or IDE in the completion of this exam. You confirm that you have not used the Internet to access any web page other than this specific exam web page. You confirm that you have not discussed your answers with anyone other than the professor of the course. You may not search for any information on the web and you may not access any course web pages in the completion of this exam. You understand that if you are found in violation of any of the policies above you may be given an automatic F in the course. Completion of this question is required in order to pass this exam.

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Question 2	10 pts

In class, we discussed modifying the ToDoList server to allow a user to log out. To achieve this, the client must send a request to the server and the server must invalidate the session. Is it better to use an HTTP GET request or an HTTP POST request from the client in order to initiate log out? For full credit, **_explain your answer_**.

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Question 3	10 pts

Which of the following are **_valid_** HTTP GET requests?

☐ GET /index.html HTTP/1.0

☐ GET /~srollins/teaching.htmlHTTP/1.0

☐ Get /~srollins/teaching.html HTTP/1.0

☐ GET /cs212/assignments HTTP/1.1

Question 4   5 pts

What would the URL look like for the HTTP request described as follows:

1. Domain: www.website.com
2. Port: 8080
3. Path: /my/path
4. Parameters: name=Bob, id=5

Question 5   5 pts

What is an advantage to using a ReadWriteLock to ensure thread safety rather than using synchronized methods?

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Question 6   5 pts

One of the database examples we have discussed uses two tables -- user and phones. The user table contains an id and username for each user. The phones table contains an id, phone number, and description (e.g., "Home") for each phone number. Why keep this information in two separate tables rather than just one?

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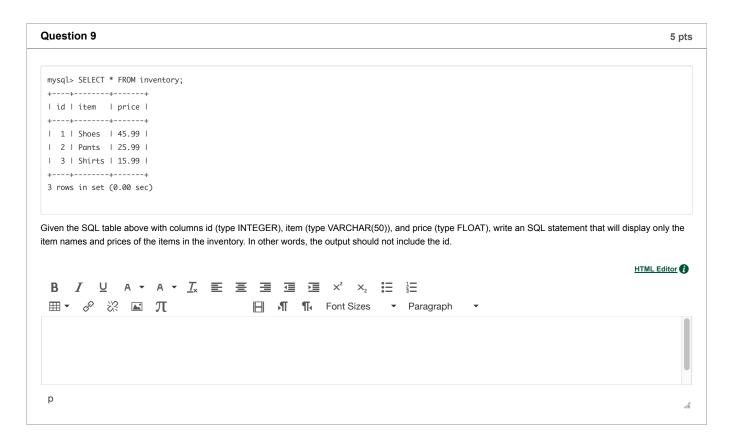### Question 7   10 pts

Project 3 requires the WorkQueue implementation discussed in class to be modified with a shutdown method and an awaitTermination method. Once the InvertedIndexBuilder adds all jobs to the WorkQueue it calls shutdown and awaitTermination before saving the index to a file. Why are the shutdown and awaitTermination methods necessary? What would happen if you did not invoke those methods before saving the index to a file? For full credit, make sure to answer both parts of this question.

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Question 8   5 pts

Give an example of why using sessions rather than cookies would be better for a web application.

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Question 9   5 pts

```
mysql> SELECT * FROM inventory;
+----+-------+-------+
| id | item  | price |
+----+-------+-------+
|  1 | Shoes | 45.99 |
|  2 | Pants | 25.99 |
|  3 | Shirts| 15.99 |
+----+-------+-------+
3 rows in set (0.00 sec)
```

Given the SQL table above with columns id (type INTEGER), item (type VARCHAR(50)), and price (type FLOAT), write an SQL statement that will display only the item names and prices of the items in the inventory. In other words, the output should not include the id.

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Question 10   5 pts

```
mysql> SELECT * FROM inventory;
+----+-------+-------+
| id | item  | price |
+----+-------+-------+
|  1 | Shoes | 45.99 |
|  2 | Pants | 25.99 |
|  3 | Shirts| 15.99 |
+----+-------+-------+
```

```
3 rows in set (0.00 sec)
```

Given the SQL table above with columns id (type INTEGER), item (type VARCHAR(50)), and price (type FLOAT), write an SQL statement that will display the items in the inventory ordered alphabetically by item.

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Question 11 5 pts

```
mysql> SELECT * FROM inventory;
+----+--------+-------+
| id | item   | price |
+----+--------+-------+
|  1 | Shoes  | 45.99 |
|  2 | Pants  | 25.99 |
|  3 | Shirts | 15.99 |
+----+--------+-------+
3 rows in set (0.00 sec)
```

Given the SQL table above with columns id (type INTEGER), item (type VARCHAR(50)), and price (type FLOAT), write an SQL statement that will display only the items in the inventory that have a price of greater than $20.

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Question 12 5 pts

```
mysql> SELECT * FROM inventory;
+----+--------+-------+
| id | item   | price |
+----+--------+-------+
|  1 | Shoes  | 45.99 |
|  2 | Pants  | 25.99 |
|  3 | Shirts | 15.99 |
+----+--------+-------+
3 rows in set (0.00 sec)
```

Given the SQL table above with columns id (type INTEGER), item (type VARCHAR(50)), and price (type FLOAT), write an SQL statement that will insert a new item into the inventory. The item will be Jackets with a price of 150.00.

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Question 13   10 pts

To illustrate how to develop unit tests we discussed an EmailParser class. The constructor took as input a string and extracted the local portion, the domain, and the top-level domain.

Consider a similar class PhoneParser that parses a phone number. The constructor takes as input a string and extracts the area code, prefix, and suffix. The number 415-422-2024 would have an area code of 415, a prefix of 422, and a suffix of 2024.

Describe *three* test cases that you would use test the PhoneParser class. Make sure to explain each test case, for example one test might be to test the valid phone number 415-422-2024. The expected output would be that no exceptions are thrown and all methods return the correct information.

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Question 14   10 pts

Provide *two* HTTP status codes and describe what each means.

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Question 15   5 pts

Describe the difference between the stripElement and stripTags method in the HTMLCleaner class you completed for homework.

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Question 16   5 pts

Write **and answer** a question about a topic you studied that does not appear on this exam.

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