CS-C3170 Web Software Development : Exam

20.02.2019

- All answers should easily fit on a single answer sheet.
- Write on each paper your **name**, your **student number** including any checking characters, the **code and name of this course**, **examination hall**, **date**, the **number of papers returned** and **your signature**.
- **If the question number is followed by an asterisk ✪, you should select all options that apply.** If there is no asterisk, select only one.
- No additional materials, calculators etc. allowed.

HTML & CSS

1. **(2 points)** Consider the following code:

```
<form action="A" method="post">
  <div>
    <input type="checkbox" name="B" id="C">
    <label for="D">I accept terms and conditions</label>
  </div>
  <button type="submit">register</button>
</form>
```

There are four attributes A-D in the form. Please explain each of these using 1-2 sentences. Tell also which two of the values A-D should be the same?

2. For the following fragment of HTML **(2 points total => 1+1)**

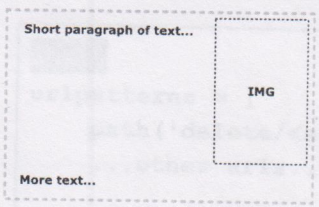
```
<div>
  <img src="myFigure.png" alt="" width="100" height="200"/>
  <p id="first">Short paragraph of text… (there is text for multiple
lines omitted from the image for clarity)</p>
  <p id="second">More text..</p>
</div>
```

and CSS style definition

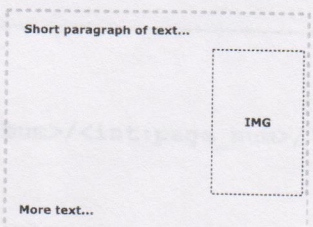
```
img { float: right; }
#first { background: white; }
#second { clear: both; }
```

Which of the following best describes the resulting layout? (1 point)

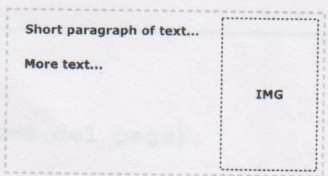
a)



b)



c)



Why? (~2 sentences) **(1 point)**

HTTP

3) Explain **briefly** the difference in how GET and POST parameters are sent to a server. (2 sentences.) **(1 point)**

4) Consider the URL **http://sample:stuff@some.info/foobar?error=500**
Explain briefly what are the following parts of the URL **(1 points)**

a. `http://`
b. `sample:stuff@`
c. `some.info`
d. `/foobar`
e. `?error=500`

5) When some web page is browsed for the first time, we get a HTTP response code **200 OK** for most of the items the browser loads. The next time the GET request for those same items receives a response code **304 Not Modified** from the server. Please give a brief answer that answers the following:

a. What is going on? (Prerequisite for any points)
b. What information (if any) gets stored after the first request on the browser and the server? **(1 point)**
c. How is that information used in the second request? **(1 point)**

JavaScript & jQuery

6) The following JavaScript code is executed. What (if anything) is printed in the console on lines 7 and 8 ? **(2 points)**

```
1) var car = {
2)   previous_owner: 'None',
3)   price: 20000
4) };
5)
6) car.owner = 'None';
7) console.log( car['owner'] );
8) console.log( car.user );
```

6. Explain briefly **what happens** in the following line of jQuery code snippet. You can refer to the line numbers in your explanation. **(1 point)**
When exactly are the different parts of the code executed? **(1 point)**

```
1.  $(".btn").click(
2.    function() {
3.      $("#contents").append("<p>Hello.</p>");
4.    }
5.  );
```

APIs

7) You see a client sending the following requests to a REST API at example.com. Explain what you assume each request does. (one sentence per request, **2 points**)

a. *PUT http://www.example.com/customers/12345*

b. *GET http://www.example.com/customers/12345/orders*

c. *POST http://www.example.com/customers/12345/orders*

Sessions & Security

8) Briefly explain the basic idea of Cross-Site Request Forgery (CSRF) attack. (Only the attack, not how to protect from it) **(max 3 sentences) (1 point)**

9) How does a server set cookies? **(1 point)**

a. Cookies are included in the `head` element of html pages

b. Browser automatically requests for cookies from a standardized URL

c. Cookies are transmitted in the HTTP headers

d. Cookies can only be set using Javascript

e. None of the above

Django

10) **(total 4 points)**

The following snippets are a Django view and the corresponding urls.py that could have been in someone's course project (they weren't) The service hosts **private** photo albums for a number of users. *There are no syntax or other errors in the code.*

views.py

```
1     @login_required(login_url="/login/")
2     def del_page(request, album, page_num):
3         page =
Page.objects.get_object_or_404(album=album,number=page_num)
4         page.delete()
5         return HttpResponseRedirect("/albums/")
```

urls.py

```
urlpatterns = [
    path('delete/<str:album>/<int:page_num>/', views.del_page),
    ...other urls...
```

(3 points) Briefly explain 3 **fundamentally** different scenarios that can what happen when a user visits the URL:

`http://someserver.com/delete/vacation/5`

Use the line numbers if necessary.

(1 point) There is an **authorization** problem in the code. What is it? (Max 2 sentences.)