

## T-106.4300 Web Software Development : Exam

Exam date: December 13th 2011, Lecture Hall B

- 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.
- Return all papers, including scratch papers.
- If the question number is followed by an asterisk \*, you should select all options that apply. If there is no asterisk, select only one.
- All questions except 12 are worth one point. Some are easier, some are harder.
- No additional material allowed.

### Questions

#### HTML & CSS

1. For the following fragment of HTML

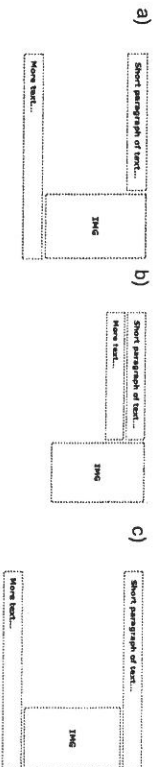
```
<div>
<p id="first">Short paragraph of text...</p>

<p id="second">More text...</p>
</div>
```

and CSS style definition

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

Which of the following best describes the resulting layout?



2. The following CSS style definition

```
p i {
font-style: italic;
}
```

makes the text italic in:

- a. all paragraph elements
- b. all paragraph elements that include an `i` element
- c. all `i` elements that are anywhere inside any `p` element
- d. all `i` elements that are located immediately after any `p` element

3. Explain briefly the different (a-e) parts of the URL:

```
http://www.example.org:8201/foo?bar=32
--a-- -----b-----c--d-----e--
```

#### Python

4. What are the values of `dLength`, `dBreadth`, and `dArea` after the following Python code has been executed?

```
dLength = 0
dBreadth = 0
dArea = dLength * dBreadth
dLength = 5
dBreadth = 4
```

- a. 0, 0, 0
- b. 0, 0, 20
- c. 5, 4, 0
- d. 5, 4, 20

#### JavaScript & jQuery

5. Which of the following specify a function that will return a number?
  - a. `function myFunction() { return 3; }`
  - b. `public Number function myFunction() { return 3; }`
  - c. `var myFunction = function() { return 3; }`
  - d. `Number function myFunction() { return 3; }`

6. With jQuery, the easiest way to load new HTML content from URL `/products/2/` and replace elements (id `examplediv`) content is:

- a. `jQuery("#examplediv").update("/products/2/");`
- b. `jQuery("#examplediv").load("/products/2/");`
- c. `jQuery().get("/products/2/").update("#examplediv");`
- d. `jQuery().get("/products/2/").html("#examplediv");`

7. What does the following JavaScript function do when given an array of numbers as a parameter? Explain briefly on a higher level instead of explaining each line.

```
function myFunction(arr) {  
  var found = Number.MAX_VALUE;  
  for (var i = arr.length; --i; ) {  
    if (arr[i] < found) {  
      found = arr[i];  
    }  
  }  
  return found;  
}
```

### Sessions & Security

8. When you are using Django's session framework, what data is stored on the server and what on client (ie. browser)? (max 3 sentences)
9. Briefly explain the basic idea of Cross-Site Request Forgery (CSRF) attack. You don't need to explain how to protect from CSRF attacks. (max 5 sentences)

### Django

The rest of the questions are related to code in Appendix 1. You can expect that the polls application is in INSTALLED\_APPS in settings.py and that all setup is done correctly for the application to work. The templates in the code include only the relevant parts and not head and body elements, for example.

10. What should TODO1 and TODO2 on line 4 of `index.html` be replaced with if you want to include the id of the Poll in the url and question of the poll inside the element?
- a. `{ { poll.id } }` and `{ { poll.question } }`
  - b. `{ % poll.id % }` and `{ % poll.question % }`
  - c. `{ { latest_poll_list.id } }` and `{ { latest_poll_list.question } }`
  - d. `{ % latest_poll_list.id % }` and `{ % latest_poll_list.question % }`
11. How can you fetch all Poll objects from the database?
- a. `Poll.objects.all()`
  - b. `get_all_objects(Poll)`
  - c. `Poll.all()`
12. Assume that there is only one Poll object in the database and the id of that object is 1. Also, assume that you run your Django application locally in port 8000. You visit URL `http://localhost:8000/polls/1/` with your browser from the same machine. Explain what Django does and which lines from the code in the Appendix are executed. How about when requesting `http://localhost:8000/polls/2/` You don't need to explain what any possible middleware does. (max 4 points)

## Appendix 1

### urls.py

```
1. from django.conf.urls.defaults import patterns, include, url
2. urlpatterns = patterns('',
3.     url(r'^polls/$', 'polls.views.index'),
4.     url(r'^polls/(?p<poll_id>\d+)/$', 'polls.views.detail'),
5. )
```

### polls/models.py

```
1. from django.db import models
2.
3. class Poll(models.Model):
4.     question = models.CharField(max_length=200)
5.     pub_date = models.DateTimeField('date published')
6.
7. class Choice(models.Model):
8.     poll = models.ForeignKey(Poll)
9.     choice = models.CharField(max_length=200)
10.    votes = models.IntegerField()
```

### polls/views.py

```
1. from django.template import Context, loader
2. from django.shortcuts import render_to_response, get_object_or_404
3. from django.http import HttpResponse
4. from polls.models import Poll
5.
6. def index(request):
7.     latest_poll_list = Poll.objects.all().order_by('-pub_date')[:5]
8.     t = loader.get_template('index.html')
9.     c = Context({'latest_poll_list': latest_poll_list })
10.    return HttpResponse(t.render(c))
11.
12. def detail(request, poll_id):
13.     p = get_object_or_404(Poll, pk=poll_id)
14.     return render_to_response('detail.html', {'poll': p})
```

### #index.html

```
1. {% if latest_poll_list %}
2.     <ul>
3.         {% for poll in latest_poll_list %}
4.             <li><a href="/polls/TOD01/">TOD02</a></li>
5.         {% endfor %}
6.     </ul>
7. {% else %}
8.     <p>No polls are available.</p>
9. {% endif %}
```

### #detail.html

```
1. <h1>{{ poll.question }}</h1>
2. <ul>
3.     {% for choice in poll.choice_set.all %}
4.         <li>{{ choice.choice }}</li>
5.     {% endfor %}
6. </ul>
```