

W3101 Scripting Languages — Javascript Midterm exam Oct 01, 2010

Name:

1. Write a small program that checks if a browser supports Javascript or not. If it does not support Javascript, it should ask the user to use a different browser. ... (1 mark)

Solution:

```
<html>
  <head><title>noscript example</title></head>
  <body>
    <noscript> Please use a browser that supports Javascript<
  </body>
</html>
```

2. What is the output when you run the following programs: ... (4 marks)

```
var i = 25;
var j = "25";
var k = 2 + "5"
var l = "2" + "5";
```

- (a) document.write (i == j); **true**
- (b) document.write (i === j); **false**
- (c) document.write (j == k); **true**
- (d) document.write (j === k); **true**
- (e) document.write (i == k); **true**
- (f) document.write (i === k); **false**
- (g) document.write (k == l); **true**
- (h) document.write (k === l); **true**

3. What are Javascript events? List at least six events, and explain briefly what they do. Show with code segments how you can call a function for two events. You can assume the functions exist — you don't have to write the code for the function. Just show the code for the event, and how the functions are called. ... (2 marks)

Solution: Javascripts events are occurrences on a browser computer – a key press or key release, like a mouse click or double click, an error condition in a Javascript program, etc. Some of the Javascript events are as follows:

- (I) onload: Web page has finished loading
- (II) onunload: Web page is about to be unloaded, that is, the user is navigating away from the current web page.
- (III) onerror: An error condition (e.g., an undefined function call) has occurred
- (IV) onkeypress: A keyboard key has been pressed.
- (V) onkeydown: A keyboard key has been pressed and held down.
- (VI) onkeyup: A key has been released after it was pressed.

4. Answer the following questions briefly and precisely: ... (3 marks)

- (a) What is a “cookie” in web jargon? Why is it required?

Solution: A cookie is some piece of information that a web server stores on a user computer. A cookie has primarily has a *name*, *value* pair. This pair is used when the user visits the web server (that initially set this particular cookie) again. There are many reasons why a web server would set a cookie on a browser computer — for session management, personalization, to remember login and password information, last visit, etc. Each cookie has an expiration time, and is deleted after it expires. Users can manually any of the cookies set by any web server.

- (b) What particular field does a server use in its HTTP response to put a cookie on the browser computer?

Solution: Set-Cookie

- (c) Assume that you clean up all your cookies on your browser. Then you visit a site like BBC. Would you see any cookies on your browser? Why or why not? If you do see cookies, do you see cookies from only BBC? Explain briefly what happens.

Solution: The browser would have “BBC” site cookie (assuming the server sets it, and the browser allows cookies). In addition, the browser would also set cookies from any third party sites that it would send a “HTTP Request” to, as part of the the HTTP references it would make from the BBC web page.

5. Write a Javascript program/function that shows the numbers [1-10] in an alert box, one after another sleeping for 100, 200, ..., 900 msec. That is, when the program starts,

it should show “1”. Then it should sleep for 100 msec. and show “2”, sleep for 200 msec. and show “3” and so on, finally showing “10” before returning. ... (2 marks)

Solution:

```
var a = 1;
function showNumbers()
{
    alert (a++);
    if (a < 11)
        setTimeout ("showNumbers()", (a-1) * 100);
}
```

6. Write a javascript program that sets 10 numbers in the range 1 to 100 as given below: ... (3 marks)

- (a) Create an array of ten numbers. Initialize them all to -1. Initialize a variable i to 0.
- (b) Prompt the user to enter a value in the range 1 to 10. If the value is less than 1, throw an exception *excp1* saying the value is too low. If the value is greater than 100, throw an exception *excp2* saying the value is too high. If the value is not a number throw an exception *excp3*. For any of these three error condions, prompt the user to enter the value agin.
- (c) If the number is in the range 1 to 100, set the i^{th} value of the array to the number the user just entered.
- (d) Repeat the above steps 10 times. Then print all the ten numbers.

Solution:

```
<html>
<head><title>Midterm solutions</title></head>

<body>
<script type="text/javascript">
    var count = 0;
    var nums = new Array(10);
    for (i = 0; i < 10; i++)
        nums[i] = -1;

    while (count < 10)
    {
        var val = prompt ("Enter a value in the range 1-100", "0")
        try
        {
```

```

        if (isNaN (val))
            throw ("excp3");

        else if (val < 1)
            throw ("excp1");

        else if (val > 100)
            throw ("excp2");

        else
            nums[count++] = val;
    }
    catch (er)
    {
        if (er == "excp3")
        {
            alert ("Not a Number, try again");
            continue;
        }
        else if (er == "excp1")
        {
            alert ("Too low a value, try again");
            continue;
        }
        else if (er == "excp2")
        {
            alert ("Too high a value, try again");
            continue;
        }
        else
        {
            alert ("Caught unknown error");
            continue;
        }
    }
}
for (i = 0; i < count; i++)
    document.write (nums[i] + "  ");
document.write ("<br />");
</script>
</body>
</html>

```