

Exam 1 - E-Technologies

Name _____

October 9, 2003

I. Define the following

A. MIME

B. PHP

C. SGML

D. XSLT

E. W3C

F. CDATA

G. DOM

H. cookies

II. What are the five primitive data types in JavaScript?

III. Compare JavaScript and CGI. What are the advantages and disadvantages of each compared to the other?

IV. Distinguish between SGML, XML, XHTML, and HTML

V. In JavaScript, describe the two ways an Array object can be created.

VI. In both Perl and JavaScript, built in methods are available to help implement stacks and queues. Identify them and describe how they work.

VII. In JavaScript, describe the approach to addressing HTML elements using getElementById.

VIII. Describe what the following lines of code are doing in general. Provide annotations that describe the details of what all the code is doing.

```
<!DOCTYPE html PUBLIC "-//w3c//DTD XHTML 1.0 Strict//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">

<html>
<head> <title> Median Computation </title>
<script type = "text/javascript">
<!--
function median(list) {
  list.sort(function (a, b) {return a - b;});
  var list_len = list.length;

  if ((list_len % 2) == 1)
    return list[Math.floor(list_len / 2)];
  else
    return Math.round((list[list_len / 2 - 1] +
      list[list_len / 2]) / 2);
}
// -->
</script>
</head>
<body>
<script type = "text/javascript">
<!--
var my_list_1 = [8, 3, 9, 1, 4, 7];
var my_list_2 = [10, -2, 0, 5, 3, 1, 7];

var med = median(my_list_1);
document.write("Median of [" , my_list_1, "] is: ",
  med, "<br />");
med = median(my_list_2);
document.write("Median of [" , my_list_2, "] is: ",
  med, "<br />");
// -->
</script>
</body>
</html>
```

IX. Describe what the following lines of code are doing in general. Provide annotations that describe the details of what all the code is doing.

```
#!/usr/local/bin/perl -w

use CGI ":standard";

sub error {
    print "Error -file could not be opened in conecl.pl <br/>";
    print end_html();
    exit(1);
}

my($age, $gender, $vote) = (param("age"), param("gender"),
    param("vote"));
# Produce the header for the reply page - do it here so
# error messages appear on the page

print header();

$LOCK = 2;
$UNLOCK = 8;

$index = 0;
if ($gender eq "male") {
    $index = 4;
}
if ($age eq "b2640") { $index += 1 }
elsif ($age eq "b4160") { $index += 2 }
```

```

elseif ($age eq "o60") { $index += 3 }

open(SURVDAT, "<survdat.dat") or error();
flock(SURVDAT, $LOCK);

for ($count = 0; $count <= 7; $count++) {
    chomp($file_lines[$count] = <SURVDAT>);
}

flock(SURVDAT, $UNLOCK);
close(SURVDAT);

@file_votes = split //, $file_lines[$index];
$file_votes[$vote]++;
$file_lines[$index] = join(" ", @file_votes);

open(SURVDAT, ">survdat.dat") or error();
flock(SURVEY, $LOCK);

for ($count = 0; $count <= 7; $count++) {
    $line = $file_lines[$count];
    print SURVDAT "$line\n";
}

flock(SURVDAT, $UNLOCK);
close(SURVDAT);

print start_html("Thankyou"),
print "Thanks for participating in our survey <br/><br/>\n";
print end_html();

```

X. Identify and describe the two main methods by which HTML form data is sent to the Web server, and in each case how the data is passed to a Perl CGI program.

XI. Why is XML potentially so important?

XII. Why might you wish to "bounce" (i.e., restart) your httpd server?

XIII. Provide at least two ways that you could "bounce" your httpd server.

XIV. What is the purpose of the directives in the httpd.conf file of an Apache server?

XV. What are the document root and server root of a Web server?

XVI. Using the following DTD file, create below a well-formed and valid XML document with at least one full <ad> record.

```
<?xml version = "1.0"?>
<!-- planes.dtd - a document type definition for
      the planes.xml document, which specifies
      a list of used airplanes for sale -->
<!ELEMENT planes_for_sale (ad+)>
<!ELEMENT ad (year, make, model, color, description,
      price?, seller, location)>
<!ELEMENT year (#PCDATA)>
<!ELEMENT make (#PCDATA)>
<!ELEMENT model (#PCDATA)>
<!ELEMENT color (#PCDATA)>
<!ELEMENT description (#PCDATA)>
<!ELEMENT price (#PCDATA)>
<!ELEMENT seller (#PCDATA)>
<!ELEMENT location (city, state)>
<!ELEMENT city (#PCDATA)>
<!ELEMENT state (#PCDATA)>
<!ATTLIST seller phone CDATA #REQUIRED>
<!ATTLIST seller email CDATA #IMPLIED>
<!ENTITY c "Cessna">
<!ENTITY p "Piper">
<!ENTITY b "Beechcraft">
```