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| **CS4720 Internet Programming**  **Department of Computer Science**  **Kennesaw State University**  **Test 1**  **Tuesday, June 29, 2021 (due by 11:59pm)**  **Full Marks: 100**  **There are 14 Questions for a total of 100 points.**  **Answer ALL the questions** |

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***General Instructions***

* First, ensure you have all the 10 pages of this exam booklet even before starting
* This exam is closed notes and closed books. No discussions are permitted
* You may use Calculator
* Do not bring out your cell phone; don’t answer the phone; don’t read text messages
* You have 2 hour to complete the exam
* Write your answers clearly
* The size of the space given for each answer is sufficient
* Write no more than 3-4 lines for each of the short questions
* Show all your works for the Mathematical problems
* Even if your final answers are incorrect, you will get partial credit if intermediate steps are clearly shown to highlight thought process. This applies to program tracing questions as well.

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| Good Luck! |

**SHORT QUESTIONS. Write no more than 3-4 lines for each of the following questions.**

1. **[20] HTML Review**

Write a shot description for each of the following frequently used HTML tags:

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| **HTML Tag** | **Description** |
| <html> | The html tag is the root of the html file used to tell the browser what kind of file it is |
| <head> | The head tag is used to hold all of the elements that will go into the head element of the html file. Like the , all of which will be expanded upon below, title style and meta and many more. |
| <title> | The title tag is one that goes into the head and it allows you to name the html file when the user is using it. So the tab will display what the title is. |
| <body> | The body is used to give the html file its body. So that means that the body will contain, all of which will be expanded upon later, the tables, headings, list, and many more. |
| <script> | The script html tag is used to house and run JavaScript code |
| <b> | The b html tag is used to show text in an bold way |
| <i> | The i html tag is used to show text in an italicized |
| <strong> | The strong html tag is used to show the text with strong importance usually just looks like bold |
| <em> | The em html tag is used to show text in an emphasized fashion |
| <p> | The p html tag is used to declare a paragraph in the html document |
| <br /> | The br tag is used to add a space or a line break in the html document |
| <hr /> | The hr html tag is used to display a horizontal line to separate html content in the html document |
| <h1> to <h6> | The h1 – h6 tag is used to define the size of a heading text in the html document |
| <font> | While the font html tag has been removed in html 5 in favor for CSS it allows you to set a font for you html document |
| <ol> | The ol html tag defines an ordered list that will be render 1 … 2…. 3… for all the list items placed within it |
| <ul> | The ul html tag defines an unordered list that will be render a dot for all the list items placed within it |

**HTML Review (contd)**

Write a shot description for each of the following frequently used HTML tags:

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| <li> | The html tag li goes into one of the list types unordered or ordered and allows them to render whats inside of them |
| <table> | The table html tag has many elements that go inside of it, all of which will be discussed later, but all in all it defines a table. |
| <tr> | The tr html tag creates a table row with the table html tag |
| <td> | The td html tag creates a cell of data and goes inside the tr |
| <th> | The th html tag creates a table header |
| <img> | The img html tag allows you to insert and image from a source file or url |
| <!- - --> | The element <!-- --> defines a comment within the html document |
| <meta> | The meta html tag goes into the head of the html and allows the values inside of it to be parsed by computers and is used by web browsers |

1. [2] What do you understand by the term ‘deprecated tags’? Can you mention some of the HTML tags which have been deprecated?

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| Deprecated tags in html are tags that are no longer recommend to use but are still available for backwards compatibility. You can still use them and they might work but its not recommend. An example is font, center, and dir tags |

1. [5]
2. How many heading tags are there in HTML? Which one is the largest? Which one is the smallest?

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| There are Six(6) heading tags in HTML  <h1></h1> is the largest of the six(6)  <h6></h6> is the smallest of the six(6) |

1. What is a URL and what are the component/structure of a URL?

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| It means the uniform resource locator and all it is an address of a resource within the internet  Within a url there is a protocol, domain, path, query string, and fragment/anchor sometimes a port is provider as well |

1. Typically what is the name of Document Root?

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| The typical name is usually index.html for a webpage |

**JavaScript Questions**

1. [5] Why does a number entered in a JavaScript prompt box need to be converted to a numeric data type?

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| Because the JavaScript Language is weakly typed and need to specify what kind of value is being imputed |

1. [5] What is the difference between Algorithm, Pseudocode and Source Code? What is the purpose of Pseudocode, if you can’t run it on a computer?

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| Algorithm is a series of defined steps to solve a problem  Pseudocode is generalized code to help work through a problem without getting muddled in the intricacies of a programming language  Source code is the code that is actually given to the computer to run the level of abstraction is variable hear |

1. [5] What is the difference between a *sequence structure* and *event-driven programming*?

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| Event driven waits for user events to act on the program a structured program follow a predefined structure.  Structured programming is less complex the event driven typically |

1. [2] How can you be sure that combined conditions are evaluated is a specific order?

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| You can use the greatest debugging tool… A print statement ☺ |

1. [3] Referring to Web Forms, why some one might use some hidden fields in the Form?

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| Used to keep information hidden until something has been clicked on. Javascript can remove this once it is clicked and then be shown. |

1. [4] What does *Pixel* stands for? Write a number of Web Image Format Acronyms and elaborate their meaning.

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| Pixel or px is the unit of measurement used in web design.  Other Acronyms:  TIFF Tagged Image File format  SVG Scalable Vector Graphics  PNG Portable Network Graphics |

**CSS Questions**

1. [5] What are the different ways CSS can be used in HTML document?

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| CSS can be used to set the background of the html document. It can also be used to change the font size or even the font family. It can also now be used to create graphics within a canvas element in html.  You can also set style classes for the html document |

**CODING PROBLEMS**

1. [10] I have written the CSS as follows:

<html>

<head>

<style type="text/css">

<!--

.heading{

font-style: italic;

font-size: 24;

}

.content{

font-size: 12;

}

-->

#otherhead{

font-style: italic;

font-size: 12;

}

-->

</style>

</head>

Now show me the use of all the styles in <body> part. Explain the use of the styles.

**Text

Description automatically generated**

**In this file you used two different classes and one id element and within those you modifies the font style and the font size except in the content section**

1. [25 PT ]

Design a site according to the following requirements. Use **HTML, CSS** and **JavaScript**.

1. The first page (***index.html***) page should contain a form with three text boxes, name, e-mail address and password, and a submit button.
   1. The name field should not be blank and it should not have any digits.
   2. The e-mail address should be a valid one. For e-mail validation check for
      1. at least one character before the **@** sign
      2. at least one ‘**.**’ after the **@** sign
      3. at least five characters after the **@** sign
      4. at least two characters after the ‘**.**’
   3. Check the password to be ***“CS4720exam”***. The password is case sensitive. If the password is correct it will go to the next page (***main.html***)
   4. Show proper error messages in popup alert boxes.
2. The Home page should contain the links (***link.html***) should be:
   * 1. Home (***home.html***)
     2. Palindrome (***palin.html***)
     3. Table of Factorials (**factorial.html**)
     4. The status bar should show appropriate messages on ***“onMouseOver”*** and ***“onMouseOut”*** event
   1. The home page (***home.html***) should contain your name, id, e-mail address (with special tag) and your web site address. Use table to format this page.
   2. The palindrome page (***palin.html***) will contain one form with one text box and a submit button. It will check whether the given text is a palindrome (a text which spells exactly the same in either direction) or not.
   3. The Table of Factorial page (***factorial.html***) will contain one form with one text box and a submit button. Text box will accept a number between 1-10 and will show all the factorials from 1 upto that number entered

**Graphical user interface, website

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1. **Multiple Choice QuesText

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The prompt “Enter aa score or -1 to quit” is an example of using which of the following in a loop?

1. Accumulator
2. Sentinel value
3. Operator
4. Increment operator

What is the process that doesn’t evaluate a condition if the outcome has been determined?

1. Boolean
2. Concatenation
3. Relational
4. Short-circuit evaluation

A program is said to be robust if it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Contains a lot of code
2. Can handle many kinds of user errors without crashing
3. Runs quickly
4. Contains many submenus
5. ***[5 PT]***

***Data-Intensive Web Application (diwa): Discuss in short for the followings:***

* 1. What is DIWA?

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| Data intensive web applications are applications that handle data in large amounts not going to say an amount because a lot of data is variable but the amount today to qualify it is around the terabytes to petabyte area |

* 1. Life Cycle of DIWA

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| The life cycle of a data intensive web application are the data acquisition, then the data procession then there is data analysis on collected data and then serving the content to end users |

* 1. Architecture of DIWA

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| The architectures of data intensive web applications are the raw data, the problem set, the Analysis model, and then the Client portal |

* 1. Tools & Techniques for DIWA

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| Today almost anybody with enough cash can do data intensive web application development without having the spin up servers of there own with the high throughput needed for the data intensive web application by doing it through the countless cloud services |