

UNIVERSITY *of* MARYLAND  
UNIVERSITY COLLEGE - *Asian Division*

## Project 2: JavaScript and Forms

### Objective:

You will gain experience with the design and implementation of several JavaScript programs, a form, and Dynamic HTML.

I highly recommend downloading the Opera 6.01 browser and use its debugging features. Internet Explorer can also be utilized as a JavaScript debugging tool after you enable Script debugging and notification of every script error. These features are enabled by clicking on the appropriate check boxes which are located in the Tools | Internet Options | Advanced menu. Another excellent debugging tool is the periodic inclusion of window.alert methods that are used to display the contents of variables. These can easily be commented out or removed as the JavaScript program is debugged. Test the resulting code using Internet Explorer 5/6, Netscape 4, and Opera browsers.

Please consult the Links portion of the class web page for additional links to useful sites.

### Requirements:

This Project consists of five parts. Complete each part in sequential order as each part becomes progressively more difficult. The programs presented are considered minimal efforts requirements. Please be creative about adding more features to each program.

#### *Part A: Simple JavaScript Program*

Create a JavaScript program that will prompt and receive an integer number. Display in the browser window:

1. This number in with color black and relative font size +3
2. The square of the number in green
3. The cube in blue and with font size +2
4. Also display your name in the browser window

Print a copy of code and browser display

#### *Part B: Conditional Statements used for Temperature Conversion Program*

Create a JavaScript program that will convert temperatures between the Fahrenheit and Celsius systems. The following requirements are to be done using HTML and JavaScript:

1. Prompt for which Conversion
2. Prompt for the temperature (decimal values)
3. Display in the browser window:
4. The original temperature and unit
5. The final temperature and unit
6. Format the output as you wish
7. Display your name in the browser window

Print code and browser display.

#### *Part C: Loop Statement used to Calculate the Factorial of a Number*

Create a JavaScript program that will accept any positive integer and display it's factorial. The following requirements are to be done using HTML and JavaScript:

1. Prompt for a number.
2. The factorial is determined by multiplying all numbers from 1 to the selected number
3. Display in the final browser window:
  - a. The original original number

- b. The factorial for the number
- c. Format the output as you wish.
- d. Display your name in the browser window

Print code and browser display.

#### ***Part D: Functions used with JavaScript***

Create a JavaScript program that will:

1. Prompt for the radius from the user
2. Calculate and display the circumference and area of a circle with this radius
3. Create three functions in your program: CircumferenceCircle, AreaCircle, SquareNumber
4. Display in the browser window: The radius, circumference, and area.
5. Format the output as you wish
6. Display your name in the browser window

Print code and browser display.

#### ***Part E: Form as a Graphical User Interface used with a JavaScript Program***

Create a JavaScript program that will utilize a Form as a Graphical User Interface to be accessed by an externally linked JavaScript program. The following requirements are to be done using HTML and JavaScript:

1. The GUI must be intuitive, easy to understand.
2. You must perform some kind of logical or mathematical conversion
3. Display in the browser window:
  - a. The values entered, operation, and results
  - b. Display your name somewhere in the browser window

Print code and browser display. Print code and browser display.

#### **Due Date and Grading:**

Project 2 is due the Week 7, at the beginning of the first class. Turn in a cover page that includes your name and topic project number. Attach the HTML code for all documents in all parts. Print the appearance of all documents in a browser window for all parts. Write a conclusion section that summarizes what your project. Include features and problems.

This project will be evaluated based upon on your mastery of HTML code, CSS, and JavaScript. Late projects will be reduced 20% of the total point value for each class period late. Grading will be 80% objective and 20% subjective (neatness, clarity, conciseness, and relative effort). A project that correctly meets all specifications in a minimal way will receive a score of 80% of the total points.