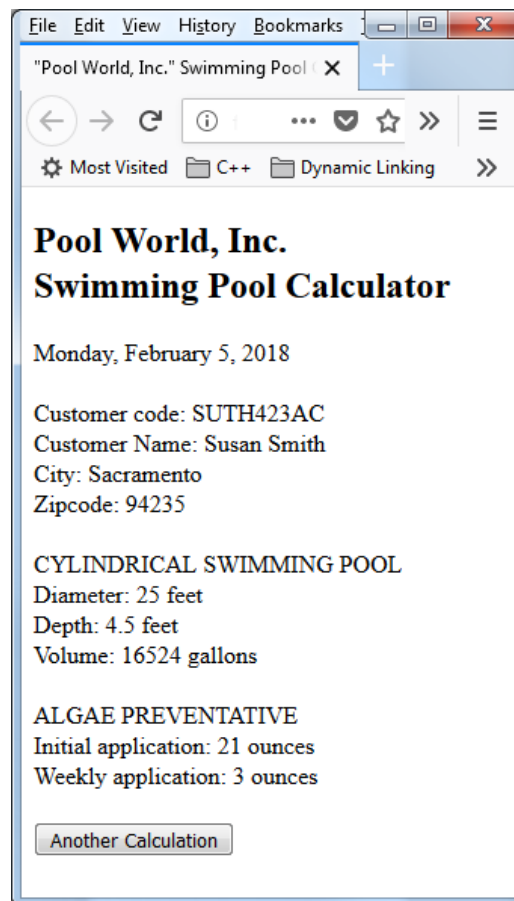


Assignment 1

Pool World, Inc. is an imaginary company that sells swimming pool supplies. They would like a Web application that would allow them to determine the volume in gallons of a cylindrical swimming pool, as well as the amount of initial application and weekly maintenance application of an algae preventative and killer.

The Web application should appear as shown in the figure below, though the actual values for the various items will depend upon the values entered for a given customer. The title that appears in the browser's title bar should be **"Pool World, Inc." Swimming Pool Calculator**.



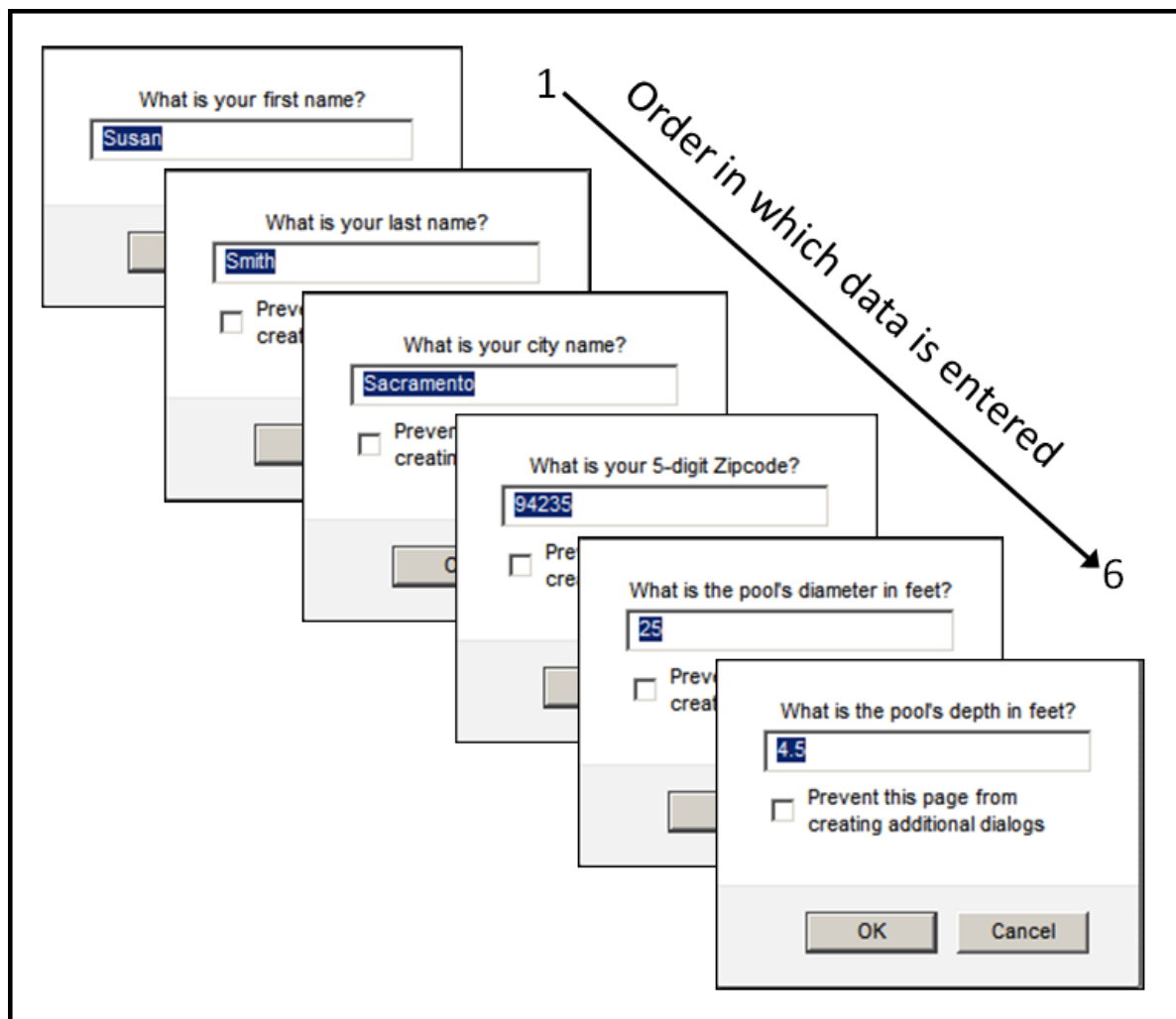
Note that there are four basic parts in the output following the header: the report date, a section with customer information, a section with the cylindrical swimming pool data, and a final section with data on algae preventative. At the bottom of the screen, a button appears that when clicked, will reload the page so that another calculation can be performed for another customer. As a starting point you may want to review the *Revisiting the Pool Volume Calculator* on slide #57 in 1 – **First Steps with JavaScript**. That script was for a rectangular pool, so you will clearly need to make adjustments since this assignment calls for a cylindrical pool. With the exception of the large header at the top of the Web page, all report output is to be placed in a div in your web page using the *getElementById()* method and *innerHTML* property. **Do not use *document.write* anywhere in your script.**

The Report Date

The report date is to come from the system date on the user's computer (slide #49 of 1 – **First Steps in JavaScript**) and must be formatted as shown in the previous figure. Use the function *DayName()* as discussed in slide #14 of 2 – **Cooking with Code** to get the name of the day of the week. In order to get the name of the month, design a similar function called *MonthName()*. Include this function along with the *DayName()* function in your *.js* file.

Getting the Customer's Raw Data

Use the *prompt()* dialog six times to obtain the raw data from the user. The figure below shows what these dialogs should look like and the order in which they should be displayed. The exact appearance of the dialogs will depend somewhat on which browser is used to view the Web page. The prompt message and default data shown in each dialog box in the figure should appear as shown in the figure when the dialog box opens. Having the same default data for everyone in the class will (1) help you to make sure that your program is running correctly, and (2) save the grader much time since (s)he will not have to key in the data for the dialog boxes.



Displaying the Customer Information

The customer code is meant to be unique for each customer. Use the *substr()* method and the **+** operator to concatenate the items making up the customer code. Note that in the customer code, all letters are upper-case—use the *toUpperCase()* method. The code consists of the first two letters of the first name, followed by the last two letters of the last name, followed by the middle three digits of the 5-digit zipcode, followed by the second and third letters of the city name.

Calculating the Swimming Pool Information

The volume of a cylindrical swimming pool is obtained from the formula $V = \pi R^2 H$, where **R** is the pool's **radius** and **H** is the depth of the pool. (Be careful—your dialog obtained the diameter, which is twice the radius.) Note that the volume is given in gallons, rounded to the nearest whole gallon. There are 7.48052 gallons per cubic foot. You will need to make use of the *Math.PI*, *Math.pow()*, and *Math.round()* built-in functions.

Calculating the Algae Preventative Information

The initial application of the algae preventative calls for 32 fluid ounces of algacide per 25,000 gallons of pool water. The weekly preventative dose calls for 1 fluid ounce per 5000 gallons of pool water. Note that both the initial and weekly doses are rounded to the nearest whole ounce.

DELIVERABLES:

Upload your **.html** and **.js** files onto the Altervista Web server. Make sure that your application runs correctly after uploading. Please email them to me by 12 midnight of the due date, which will be announced in class. ***Your JavaScript code should have appropriate // comments throughout that explain what the code does.***