

Exercise 5

1. Please develop a webpage to let users perform the four fundamental arithmetic operations: addition, subtraction, multiplication, and division.

(1) Please show the following message to let the user choose the operator:

"請輸入算數運算子：1 代表加(+)、2 代表減(-)、3 代表乘(*)、4 代表除(/)"

這個網頁顯示

請輸入算數運算子：1代表加(+)、2代表減(-)、3代表乘(*)、4代表除(/)

確定 取消

If the user input is not valid options, please show an error message “輸入有誤！選項自動設為 1。” using a popup window and set the option to 1.

這個網頁顯示

輸入有誤！選項自動設為 1。

確定

(2) Let the user input two numbers:

這個網頁顯示

請輸入第一個數字:

確定 取消

If the input value is not valid number, please show an error message “輸入有誤！數值自動設定為 1。” using a popup window and set the first number to 1.

這個網頁顯示

輸入有誤！數值自動設定為 1。

確定

這個網頁顯示

請輸入第二個數字:

確定 取消

Again, if the input value is not valid number, please show an error message “輸入有誤！數值自動設定為 1。” using a popup window and set the second number to 1.

這個網頁顯示

輸入有誤！數值自動設定為1。

確定

(3) Finally, the webpage shows the results of the arithmetic operation:

四則運算結果：

$$11 * 111 = 1221$$

Another example:

四則運算結果：

$$123 / 321 = 0.38$$

Other requirements:


- (1) Please modify the CSS in ex-5-1-ui.html to:
 - Set the font of the heading to cwTeXYen (Google 圓體字):
<https://wordpress.blog.tw/google-fonts-typography/>.
 - Center the number in <div>.
 - Set the padding for <div> to 5px.
 - Let all elements display **side-by-side**.
- (2) If the operator is division, the result should be rounded to two decimal places (取到小數點後兩位).

Hint:

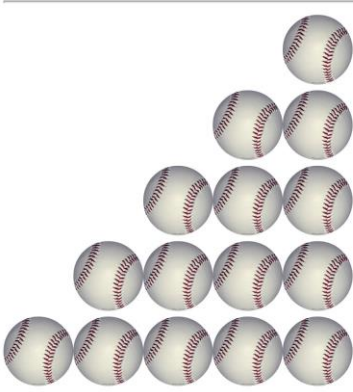
- Please study how to set values to HTML elements using DOM (document object model).
- “Side-by-side” is easy to realize by a CSS property.
- isFinite(): https://www.w3schools.com/jsref/jsref_isfinite.asp.

2. Develop a JavaScript program that displays the images of baseball based on the user's input (type: number). The user can input the side length and choose to draw a triangle, draw a square, a draw a special square. The expected user interfaces are as follows: (The image files are *baseball.jpg*, *baseball-x.jpg*. and *blank.png*. Should re-size the images to 50x50px)

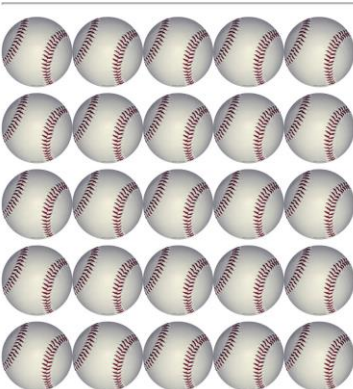
In the initial page:

Side Length (<=10):	<input type="text" value="5"/>	<input type="button" value="Draw Baseball Triangle"/>	<input type="button" value="Draw Baseball Square"/>	<input type="button" value="Draw Special Square"/>
				

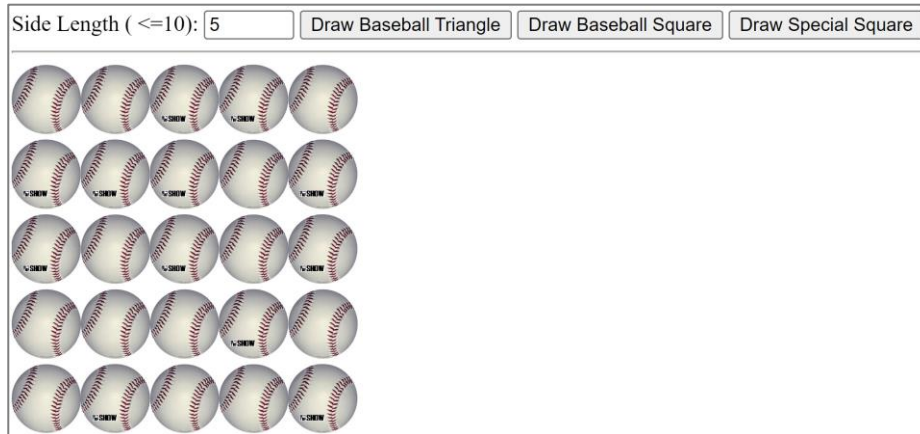
If choosing “Draw Baseball Triangle”:

Side Length (<=10):	<input type="text" value="5"/>	<input type="button" value="Draw Baseball Triangle"/>	<input type="button" value="Draw Baseball Square"/>	<input type="button" value="Draw Special Square"/>
				

If choosing “Draw Baseball Square”:

Side Length (<=10):	<input type="text" value="5"/>	<input type="button" value="Draw Baseball Triangle"/>	<input type="button" value="Draw Baseball Square"/>	<input type="button" value="Draw Special Square"/>
				

If choosing “Draw Special Square”:



Note that 1/3 of baseball images may be replaced by the special image, baseball-x.jpg, in the special square mode.

Besides, if the user inputs an invalid value (< 0 or > 10), this program will show a popup dialog, and set the input value as the default value 5.

Hint:

- The images are suggested to be shown in a *div* element.
- Suggest to use “blank.png” to leave spaces to build correct triangles.
- Math.random(): https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Math/random.