PIC 40A: Homework 3 (due 10/29 at 10pm)

Like on homework 1, it is important that you meet the following requirements.

- You must upload your files to **CCLE** before the deadline.
- You must upload your files to the **PIC server** in the appropriate directory before the deadline.
- Both submissions must be **identical** (down to the character).
  Never make changes to the PIC server submission after submitting your homework.
  (We can see when a file was last modified.)
- You must tell us (me and the grader) your **PIC username**.
- You must **validate** your HTML using https://validator.w3.org/.

In this assignment you will make three files...

1. `README.txt`. This will contain your PIC username.
2. `shut_the_box.html`. This is the easier part of the assignment.
3. `shut_the_box.js`. I expect you'll spend longest on this part of the assignment.

As mentioned above, you should submit both files to CCLE before the deadline.
You should also submit the files to the PIC server. Save them in the directory

`/net/laguna/???...???/your_username/public_html/HW3`

(in the folder `HW3` within `public_html`). We should all be able to view your live webpage at

www.pic.ucla.edu/~your_username/HW3/shut_the_box.html

Now, I am just left to tell you what I want `shut_the_box.html` and `shut_the_box.js` to achieve. Go over the page for that!

Shut The Box

HTML

Watch the demo video. I address the following aspects of the HTML...

1. The tab should be titled "Shut The Box".
2. You should have a header displaying a heading "Shut The Box".
3. You should have a section describing the rules using numbering *i*, *ii*, *iii*, *iv*, ...

   You can copy my rules or you can improve on my description, whichever you prefer.
4. You should have a heading saying "Dice roll".
5. Underneath there should be a button saying "Roll dice" and there should be a space for the result of a dice roll. I used a `<span>` element for the space where results will appear.
6. You may want to use a `<fieldset>` element to enclose your dice button and result.
7. You should have a heading saying "Box selection".
8. Underneath there should be a `<table>`.

   The table head should contain the numbers `1`, `2`, `3`, ..., `8`, `9`.

   The table body should contain corresponding checkboxes.

   There should be no table foot.
9. There should be two buttons enclosed in a `<fieldset>` element saying:

   "Submit box selection" and "I give up / I can't make a valid move".
10. There should be a footer with copyright information.

Grading

Here's how your HTML will be graded...

- 1. - 2. are worth 1 point.
- 3. is worth 1 point.
- 4. - 6. are worth 1 point.
- 7. - 8. are worth 2 points.
- 9. - 10. are worth 1 point.

Shut The Box

JavaScript

Watch the demo video. I address the following aspects of the JavaScript...

1. Clicking the "Roll dice" button causes the result of a dice roll to be displayed.
2. Clicking on a number or the corresponding checkbox causes the checkbox to become `checked` or unchecked.
3. When rolling the dice, the "Submit box selection" button is `disabled`.

   When selecting boxes, the "Roll dice" button is `disabled`.
4. Upon clicking "Submit box selection"
   (a) *either* an `alert` message is displayed telling us we have made an invalid move:

   > The total of the boxes you selected does not match the dice roll.
   > Please make another selection and try again.

   (b) *or* our submission is successful. In this case,
      i. we `disable` the used checkboxes;
      ii. if the remaining boxes sum to less than or equal to six, we start to use one die instead of two;
      iii. we go back to rolling the dice and the last dice roll result is no longer displayed.
5. Upon clicking, "I give up / I can't make a valid move" we get an `alert` telling us our score.

   (Don't worry about the end state. In a future assignment, after clicking this button, we'll be redirected to another page, so the end state of buttons is irrelevant.)

I have provided `template.js` so you can see, to some extent, how I implemented this myself. I have included all the function names that I used. In addition to what is written, I introduced five other variables outside of the functions to store references to various `HTMLElements` or `HTMLCollections`.

Grading

Here's how your JavaScript will be graded...

- 1., 2., 3. are worth 2 points each.
- 4.a) is worth 2 points.
- 4.b)i) is worth 2 points.
- 4.b)ii) and 4.b)iii) are worth 1 point each.
- 5. is worth 2 points.