

PIC 40A: Homework 3 (due 5/5 at 5pm)

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

- You must upload your files to **Gradescope** 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 the deadline.
(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 submit 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 all files to Gradescope 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. (a) The tab should be titled “Shut The Box”.
(b) You should have a header displaying a heading “Shut The Box”.
2. 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.
3. (a) You should have another section with a heading saying “Dice roll”.
(b) Underneath the heading there should be a button saying “Roll dice” and a space for the result of a dice roll. Use a `` element for the space where results will appear.
(c) You should use a `<fieldset>` element to enclose your dice roll button and result.
4. (a) You should have another section with a heading saying “Box selection”.
(b) Underneath the heading 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.
(c) Underneath the table should be two buttons enclosed in a `<fieldset>` element saying: “Submit box selection” and “I give up / I can’t make a valid move”.
5. There should be a footer with copyright information.

Grading

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

- 1. is worth 1 point.
- 2. is worth 1 point.
- 3. is worth 1 point.
- 4. is worth 2 points.
- 5. is worth 0 points, since “whatever”.

Shut The Box

JavaScript

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

1. Clicking on a number or the corresponding checkbox causes the checkbox to become **checked** or **unchecked**. To make clicking on a number function correctly, you should add event listeners to some of your `<td>` elements. You should not type (or copy and paste) `addEventListener` or `on` 9 times; use a `for` loop or find another way to avoid code bloating.
2. All buttons should be given their functionality through the use of event listeners and event handlers, **not** the `onclick` attribute of a `<input>` or `<button>` element.
Whenever the “Roll dice” button is enabled, the “Submit box selection” button is **disabled**.
Whenever the “Submit box selection” button is enabled, the “Roll dice” button is **disabled**.
3. When the page is loaded, the “Roll dice” button is enabled.
When enabled, clicking the “Roll dice” button causes
 - (a) the “Roll dice” button to become **disabled**,
 - (b) the result of a dice roll to be displayed to the user of the webpage,
 - (c) the “Submit box selection” button to become enabled.
4. When the page is loaded, the “Submit box selection” button is **disabled**.
When enabled, upon clicking the “Submit box selection” button
 - (a) *either* the following **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 uncheck and **disable** the used checkboxes (clicking on the corresponding numbers should also no longer check these checkboxes);
 - ii. if the remaining boxes sum to less than or equal to six, we start to use one die instead of two;
 - iii. the last dice roll result is no longer displayed and we go back to rolling the dice.
5. Upon clicking “I give up / I can’t make a valid move” all buttons are **disabled** and the user of the webpage receives an **alert** telling them their score.

I have provided `template.js` so you can see, to some extent, how I implemented this myself. I have included all the function names and global variable names that I used.

Grading

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

- 1. is worth 2 points.
- 2. is worth 2 points.
- 3.(a)+(c) is worth 1 point.
- 3.(b) is worth 1 point.
- 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 is worth 3 points.