

General rules

1. This test is **open book**. You may consult the class notes, the recordings of the lectures, your programs, the textbook, and the Internet. You may not consult any person.
2. There are 5 questions.
3. You may use up to 2 hours minutes for this exam (including any time you spend consulting sources). If you have a documented disability, you may spend additional time. If you turn in the exam after the scheduled end time, include a note indicating why the exam is late.
4. You must submit this exam as a web page that you upload via the Canvas website. Any CSS or JavaScript you write must be included as part of the page.
5. Your web page should have an `<h1>` heading for each question. The W3c validator should report no errors for the page.
6. When a question refers to **the standard text**, it means this text:
`It is an ancient mariner, and he stoppeth one of three.`
7. If something is not specified in the questions, you may complete the specification however you want.

Signatures

- (a) Place this note in your web page:
`I have not spoken with other people about this exam, and I will not speak with others who have not yet finished the exam. I have only used the allowed amount of time on the exam.`
- (b) Place a list of all sources you referred to during the exam on the web page.
- (c) Place your name in the exam. This name stands as your signature to the statements above.

1 Simple HTML

For this question, you may not use Bootstrap. However, you may use jQuery.

- (a) Show the standard text (as defined above) with a tooltip on the word `mariner`. The tooltip should say `albatross-killer`, and it should have pink background and blue foreground. Caution: don't use the id "tooltip"; it conflicts with Bootstrap. Call it something else.
- (b) Show the standard text (as defined above) with a blurred brown shadow of 4px in both the X and Y directions.

- (c) Build a 4×4 table. The middle 4 cells should all be combined into a single cell, so in total there should be 13 cells, that is, 12 small ones and 1 big one. Each cell should contain a centered text "water" and have a padding of 3px on all sides. The big middle cell should have a light blue background; the others should not be colored.

2 Bootstrap

For this question, you must use Bootstrap. You may also use jQuery. Place a `<div class='container-fluid'>` region around the entire contents of the body of your web page.

- (a) Using Bootstrap's grid layout (without any additional CSS) and a single `<div>` element, place the standard text (as defined above) in the middle region (horizontally) of the page. If the viewport is extra small, use all 12 cells. If it is small, use the middle 10 cells. If it is medium, use the middle 8 cells. Otherwise use the middle 4 cells.
- (b) Make three Bootstrap buttons, with text `about`, `reel`, and `rout`. They should have no effect when clicked. They should have Bootstrap green, red, and blue backgrounds with white letters.
- (c) Make a Bootstrap drop-down menu with label `menu` with three entries, `drifts`, `snowy`, and `clifts` (that's not a misprint!). When clicked, the page should jump to your answers to question 1, question 2, and question 3, respectively.
- (d) Show the standard text (as defined above) with a Bootstrap tooltip on the word `stoppeth`. The tooltip should say `with his skinny hand`. Use default Bootstrap coloring.

3 DataTables

Build a DataTable based on the data provided by

<http://www.cs.uky.edu/~raphael/courses/CS316/examples/services.cgi>.

It must have these properties:

- It has three columns, titled `Port number`, `Service name`, and `Protocol version`, referring to the port number, the service, and the protocol of each entry returned by the CGI-bin program. Beware: the program provides these items in a different order.
- The table should use Bootstrap striping, and hovering the cursor over a line should darken its background. There should be no other CSS associated with the table.

4 Canvas

You must use jCanvas for this question. Create a 500×500 canvas with a 2px-wide green border that contains the following elements, drawn in order.

- (a) a blue circle in the middle with radius 200
- (b) a red circle centered at 500, 300 with radius 50
- (c) an uncolored square centered at 100, 50 with size 30, with a brown border of width 3.
- (d) the text `sadder` and `wiser` centered at 250, 400 with font size 19.

5 A game of buttons

For this question, you may not introduce any CSS, either in a `style` attribute, a `<style>` entry, or via jQuery. You must use Bootstrap classes to accomplish all styling.

- (a) Build three Bootstrap buttons, with text `mist`, `snow`, and `cold`. They all start red. (Use the Bootstrap coloring scheme.)
- (b) Use jQuery to create this effect: clicking the first button, `mist`, causes the second button, `snow`, to become green.
- (c) Use jQuery to create this effect: clicking the second button, `snow`, causes the third button, `cold`, to change its text to `wondrous` and its color to become blue.
- (d) Use jQuery to create this effect: clicking the third button (whether it has text `cold` or `wondrous` causes the second button button, `snow`, to return to its initial state and hides the first button, `mist`.